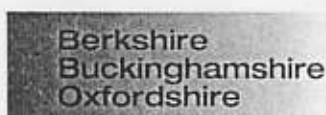


# WEST CHILTERNNS COMMONS PROJECT

## CONSERVATION AND RESTORATION PLAN FOR NAPHILL COMMON

APRIL 2000



**OXFORDSHIRE  
COUNTY COUNCIL**  
**ENVIRONMENTAL SERVICES**



Supported by the  
**Heritage Lottery Fund**



Tomorrow's  
heathland heritage

Supported by the Heritage Lottery Fund  
and English Nature

## NAPHILL COMMON

**Centroid Grid Reference:** SU 840 970

**Approximate area:** 60.69 ha

### SITE DESCRIPTION

One of the largest Buckinghamshire commons, Naphill is a SSSI originally designated for its unmanaged stand of native trees. Subsequently the importance of the previous wood pasture with veteran pollards, remnants of heath and presence of the nationally rare Starfruit (*Damasonium alisma*) have been recognised.

The common provides an important recreational resource for local people and visitors, being popular for walkers and horse riders alike.

(More comprehensive descriptions can be found in references 1, 2 & 3).

**OWNERSHIP:** Edward Dashwood  
West Wycombe Estate

**Contacts:** Ian Firth,  
The Park Office,  
West Wycombe Estate,  
West Wycombe House,  
West Wycombe,  
Nr High Wycombe,  
Buckinghamshire

Dr M Pawlik  
Naphill Common Committee  
16 Ash Close  
Walters Ash  
High Wycombe  
Bucks.  
HP14 4TR

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 Northing 196760 - 197757  
 Scale 1:5876  
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 Roads AM



Overplots  
 Ordnance Survey Sheets

Key plan



Buckinghamshire County Council

Naphill Common (N)

Plotted by PC/GRILS

## **Naphill Common**

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### **AERIAL COMPARISON OF HABITATS**

The following pages show a comparison of the main habitats present immediately after the war (1946-48) and in 1995. These are based on aerial photographs taken by the RAF and, more recently, by Aerofilms. Copies of both sets are owned by Buckinghamshire County Council and held in their Aylesbury offices.

From the comparative plans it would appear that the main change has occurred in the south eastern corner where woodland encroachment has reduced the open bracken and scattered scrub areas to small pockets. However, what is not evident is the change in nature of the previous wood pasture areas to semi-mature woodland.

### **HISTORY**

Records show that previously Naphill Common was managed as open wood pasture with areas of juniper and gorse scrub, grass and heather. The ancient pollard beech and oak trees, now being choked by younger trees, also testify to the once open nature of the common.

As with many of the Chiltern Commons, the loss of open habitat can be attributed to the decline in the numbers of commoners exercising their rights. Since the war, grazing of stock in such situations has become increasingly less profitable and more difficult without any perimeter fencing.

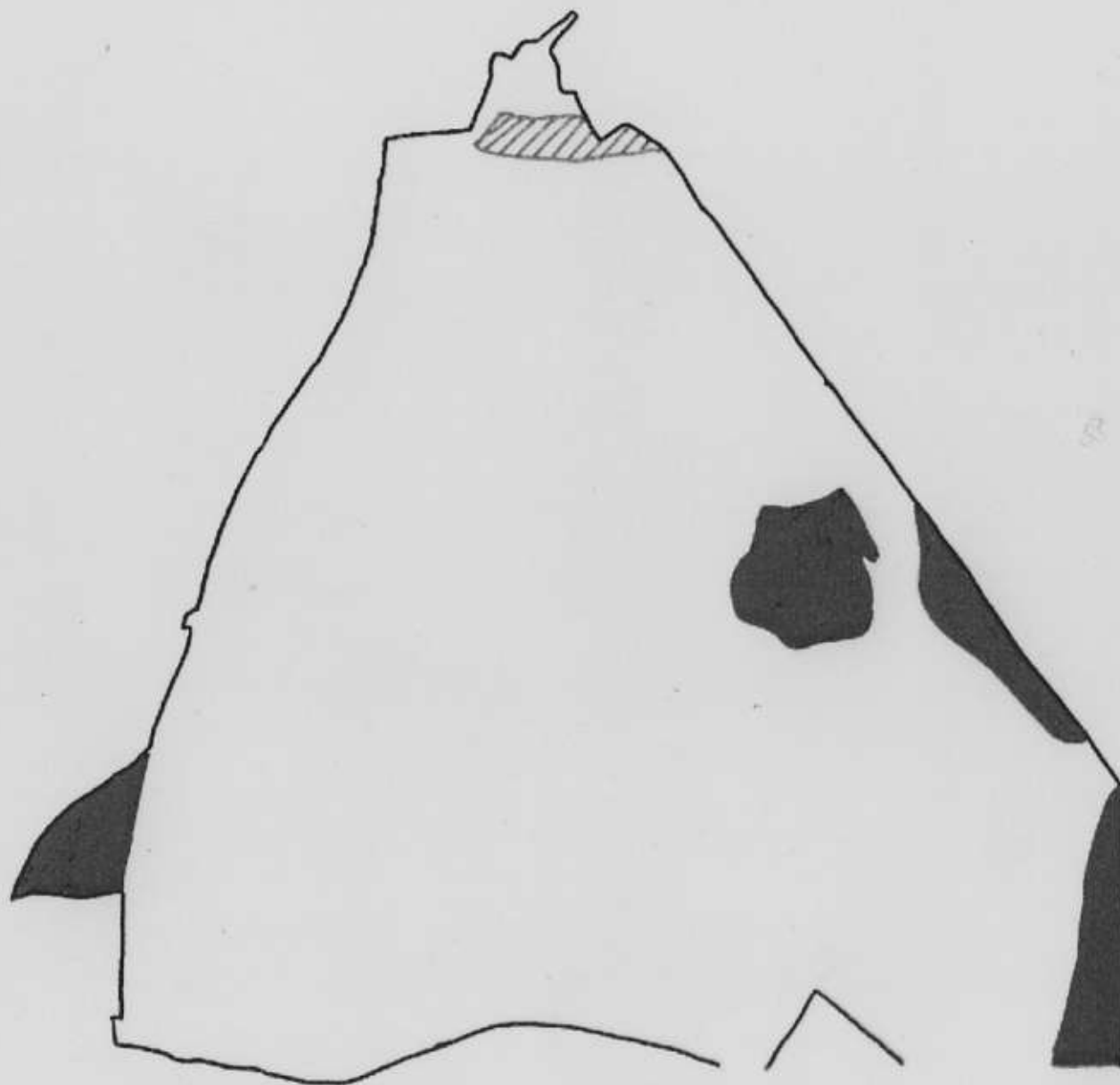
20 commoner's rights are registered which include:  
5 rights of pasture (cattle, horses, donkeys, goats, geese);  
18 rights of estovers and firebote.  
Some of these rights combine for individual households.

### **CURRENT MANAGEMENT**

In 1995, a report was written by Dr C J Smith to offer guidance for future management ('A Preliminary Field Survey and Proposals for Continuing Management – Naphill Common'). The common is currently subject to a 5 year Woodland Grant Scheme (WGS) for thinning, ride widening and management to protect the veteran pollards. Some path surfacing has taken place and the county council has assisted with pond management to encourage the rare starfruit.

**Naphill Common (N)**

**change 1947 - 1995**





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Overprints  
 Ordnance Survey Sheets

1947 data for north side  
 of common, unavailable.

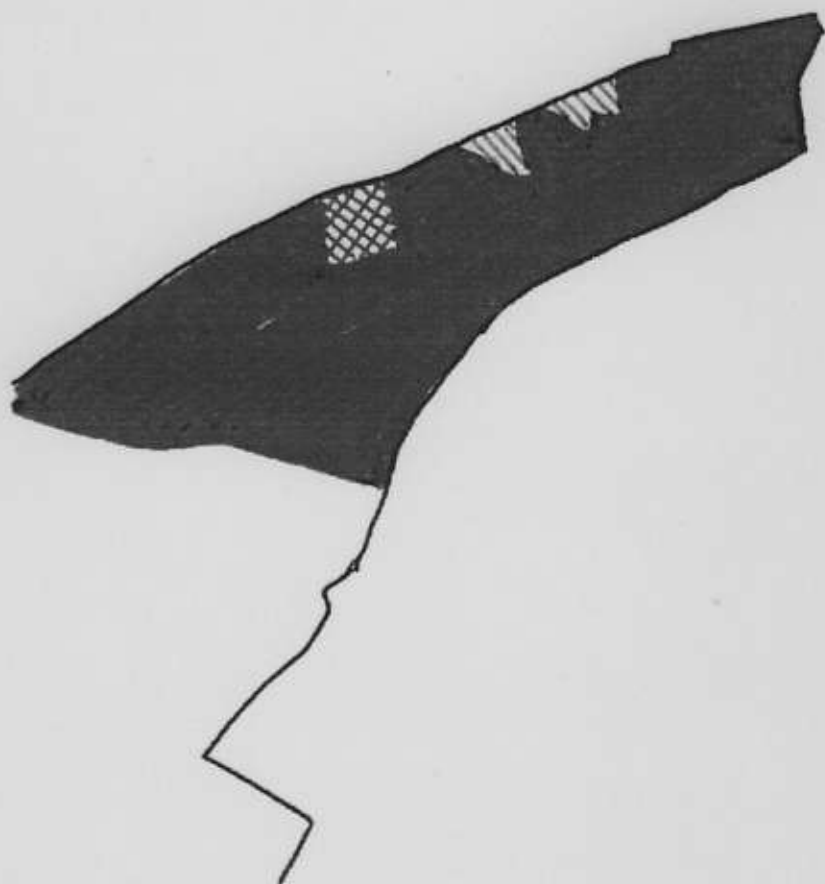
habitats in 1947



Buckinghamshire County Council

Naphill Common (S)  
Downley Common (N)

change 1947 - 1995







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Map details Easting 484057 485011  
 Northing 196015 196070  
 Scale 1:5076  
 Date 15/12/93  
 Roads AM



Overlays  
 Ordnance Survey Shells

**habitats in 1947**

Key: D187



Buckinghamshire County Council



# KEY



Broad-leaved woodland



Scattered Scrub



Dense Scrub



Unimproved Acid Grassland



Broadleaved scattered trees



Scattered woodland & wooded parkland.  
Some formal planting has taken place at Turville Heath.



Standing water



Continuous Bracken



Scattered Bracken



Gorse & Bracken



Amenity Grassland



Arable



Improved Grassland

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 Northing 196015 - 196972  
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Overplots  
 Ordnance Survey Sheets



Key plan



Buckinghamshire County Council

Naphill Common (s), Downley Common (N)

Plotted by PC/GRI S

## NATURE CONSERVATION OBJECTIVES

As a result of discussions with the West Chilterns Commons Project, a report looking into grazing and grass cutting management options was submitted to the Naphill Common Committee and the owners. This report - 'Grazing vs. Grass Cutting', 10.11.99 - (copy attached to this document) is still being considered.

It is imperative that any short or long term objectives for the common are agreed between the common's owners, commoners, Naphill Common Committee, English Nature, and, as appropriate, local people. Those with both the authority and responsibility to manage the common must decide on the desirability and feasibility of different objectives taking into account current resources, potential grant aid and local constraints.

Given sufficient support and commitment, nature conservation objectives for Naphill Common might be to:

1. Extend and link areas of grass and heath and open up glades by adopting systematic bracken and scrub control management. Concentrated efforts on the south east compartment would reclaim approximately **4ha** that has been identified by the 1940's-1990's comparisons as being subject to increased scrub and woodland cover. In time, management across the whole of the common, to push back the boundaries in a systematic and gradual manner taking due care of current landscape considerations and protecting areas of scrub that provide an important habitat in their own right, might restore as much as **15-20 ha**.
2. Maintain areas of important scrub habitat through a programme of rotational coppicing.
3. Encourage the expansion and diversity of areas of acid grass and heath by adopting a cutting and removal regime (*as described in the report, grazing is an alternative option*).
4. Continue protection of the ancient pollards.
5. Carry out further management to encourage the rare starfruit in the common's ponds.
6. Develop a commons leaflet to encourage local people to take a positive and active involvement in the management of the common.

Based on these conservation objectives it is possible to devise the following 5 year costed work plan.

## 5 YEAR COSTED PLAN

Work	Year 1		Year 2		Year 3		Year 4		Year 5		Total Cost (£)
	Area (ha)	Cost (£)	Area (ha)	Cost (£)	Area (ha)	Cost (£)	Area (ha)	Cost (£)	Area (ha)	Cost (£)	
<b>Scrub Management<sup>1</sup></b>											
a) Removal	0.75	1090.00	0.75	1090.00	0.75	1090.00	0.75	1090.00	0.75	1090.00	<b>5450.00</b>
b) Follow-up treatment			0.75	200.00	0.75	200.00	0.75	200.00	0.75	200.00	<b>800.00</b>
c) Rotational cutting	0.1	105.00	0.1	105.00	0.1	105.00	0.1	105.00	0.1	105.00	<b>525.00</b>
<b>Bracken Control<sup>2</sup></b>	0.1	100.00	0.1	100.00	0.1	100.00					<b>300.00</b>
<b>Grass Management<sup>3</sup></b>	1.0	450.00	1.75	600.00	2.5	750.00	3.25	900.00	4.0	1050.00	<b>3750.00</b>
<b>Commons Leaflet</b>			-	500.00							<b>500.00</b>
<b>Other<sup>4</sup></b>										500.00	<b>500.00</b>
<b>Totals<sup>5</sup></b>		<b>1745.00</b>		<b>2595.00</b>		<b>2245.00</b>		<b>2295.00</b>		<b>2945.00</b>	<b>11825.00<sup>6</sup></b>

(Notes on next page)

### Notes

- <sup>1</sup> Scrub cutting should take place in the winter months. Where stumps are to be treated to prevent regrowth, this should take place immediately after cutting (not to be undertaken in areas where rotational cutting, to maintain good scrub habitat, is the preferred management). Grazing is the best method of reducing regrowth though inclusion in the 'grass' area to be cut and removed will help.

The area of scrub to be cleared will be dependent on available resources (labour, finance etc.) and likely visual impact – what will be supported by owners, local people etc. The above areas (totalling 1.75 ha of scrub cutting per year) are those required to release 3 ha for grass/heath by the end of the 5 year period (and regenerate desirable scrub habitat). It might be preferred to spread this reclamation over a longer period.

Clearance of scrub and trees to protect veteran trees has been included in this section. (See section 3 & appendix C of the attached report for further details of scrub management).
- <sup>2</sup> Bracken control has to be systematic and maintained in order to keep on top of new growth or regrowth though hopefully the amount of work will decline over time provided suitable ongoing management of grass and heather areas is adopted.

The area shown is a nominal amount to cover management of bracken around rides and in clearings – more may be required following a detailed survey.

(See section 4 & appendix D of the report).
- <sup>3</sup> It is vitally important that suitable management of existing and reclaimed areas of open common proceeds. The areas shown relate to areas cleared of scrub in the previous years. Costs are based on estimated time for skilled volunteer labour to operate a cutting and removal regime (3 days in the first year increasing to 7 in the fifth). (See section 2 & appendix B). The grazing option has not been costed here but refer to section 1 and appendix A of the attached report for further details.
- <sup>4</sup> This represents a contingency for work to encourage the starfruit and a potential follow up ecological survey.
- <sup>5</sup> These costs do not include purchase of machinery which could not be justified on such a small area. Such work could only proceed if the owners already have suitable machinery that can be used or the costs could be shared with a number of other commons – possibly within the Chiltern Common Network.
- <sup>6</sup> This is very much a 'ball park' figure. The actual costs may be lower depending on volunteer input and the rate of work.

### Other Projects:

- It is recommended that ecological surveys are carried out at the beginning of this programme of work and repeated at suitable intervals (e.g. 5, 10 years etc.) to help determine the results of management and inform decisions on future management.
- A photographic record could also be kept – EN can give advice on fixed-point photography (see reference 5).

The work plan would be expanded, after further consultation, to identify specific areas and compartments for each season's work. Plans or maps showing each year's proposed work would also be helpful for both guiding work on the ground and measuring progress (these could link in with the fixed point photography).

The following page shows a project map based on the above 5 year work plan.

Naph111 Common (N)

Buckinghamshire County Council



# PROPOSED PROJECT MAP

XX Rotational cutting  
 X of scrub  
 Grassland Management  
 (not shown in rides  
 and glades)

Ordnance Survey Sheets



Map details: Easting 483428 - 484595  
 Northing 196782 - 197749  
 Scale 1:5765  
 Date 15/12/99  
 Roads AH  
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 Northing 196015 - 196972  
 Scale 1:5876  
 Date 15/12/99  
 Roads AM



Overplots  
 Ordnance Survey Sheets

# PROPOSED PROJECT MAP

Scrub removal  
 Grassland Management

Key plan



Buckinghamshire County Council



Naphill Commor (s), Downley Common (N)



## Naphill Common

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### CONSULTATION

The following consultation has taken place:

- |          |  |
|----------|--|
| March 98 | Initial contact from Wildlife Trust.   |
| July 99  | Confirmation that West Chilterns Commons Project was to proceed.   |
| 3.8.99   | Meeting with Mark Gillard (Ian Firth's predecessor) at West Wycombe Estate.  |
| 17.9.99  | Project writes to Dr Marek Pawlik, Naphill Common Committee.   |
| 11.10.99 | Site meeting with members of the Common Committee.   |
| 15.11.99 | Project issues copies of management report to owners, Common Committee and other parties (including English Nature and the Forestry Commission). |

It has not been possible to arrange a subsequent meeting with the owners, the West Wycombe Estate. Further consultation will be required with the owners and other interested parties before new management proposals can be implemented.

The West Wycombe Estate is supportive but does not have resources to devote to management of the common.

It is hoped that the development of the Chilterns Commons Network will allow continued development of appropriate and agreed management proposals at Naphill and other Chiltern Commons.

### REFERENCES:

- |   |   |
|---|---|
| 1. Charlotte Edmunds (1997)   | 'Chiltern Commons – An Assessment of their Management Requirements'   |
| 2. Rural Surveys Research Unit<br>University of Wales, Aberystwyth<br>(December 1998) | 'Biological Survey Of Common Land:<br>Buckinghamshire'  |
| 3. Smith, C.J. (1995)   | 'A Preliminary Field Survey and Proposals for the<br>Continuing Management of Naphill Common and<br>part of Downley Common'   |
| 4. Bullen, C. (1999)  | 'Fencing and Common Land Management'<br>UCL Dissertation  |
| 5. Claydon, P. (1985)   | 'Our Common Land'      Open Spaces Soc.   |
| 6. DETR (1998)  | 'Good Practise Guide on Managing the Use Of<br>Common Land'   |
| 7. Cox, J.H.S., Cooke, R., Porter, K.<br>(1998)                                       | 'Guidance on Heritage Condition Monitoring of<br>Lowland Heathland Restoration and Re-creation<br>sites in Tomorrow's Heathland Heritage Project<br>Areas.'      English Nature |

### ATTACHED DOCUMENTS:

- 'Grazing vs. Grass Cutting'. West Chilterns Commons Project, 10.11.99
- Addendum – to above report.

## NAPHILL COMMON

### GRAZING vs. GRASS CUTTING

Report prepared by Neil Jackson on behalf of the Naphill Common Committee,  
10.11.99

Following a meeting with members of the Naphill Common Committee (11.10.99) it was felt that a comparison between grazing and grass cutting would help the parties involved with managing the common identify the preferred management options for maintaining and extending the open areas. 'Letting nature take its course', or non-intervention, is not an option if the particularly valuable heath and acid grassland habitats, that remain from the era when the common was an open grazed heath, are not to be lost to a succession of bramble and scrub through to woodland.

The report is not a detailed management plan but seeks to give the parties sufficient information to decide on the next step. It is recognised that more work will be required before either a grazing or grass cutting regime can be implemented but it is important, in the first instance, that all the parties agree to the best way forward.

The recommendations that follow build on the survey and management report prepared by Chris Smith (October 1995). Any further detailed plans should similarly be based on Chris's work.

Report contents:

1. **Grazing** - Why graze? Grazing regime, stock control, who can graze stock, types of stock, consultation and approval procedures.
2. **Grass cutting** - Cutting regimes, what machinery to use, composting.
3. **Scrub management.**
4. **Bracken control.**
5. **Access issues.**
6. **Grant aid.**
7. **Conclusion.**

#### **Appendices – Costed Options.**

- A. Grazing - permanent fencing.
- B. Cutting and removal regime.
- C. Scrub Management.
- D. Bracken Control.
- E. Access Issues.
- F. Summary of Unit Costs.
- G. Outline Management Plan.
- H. References.

### 1. GRAZING

#### 1.1. Why Graze?

Section 3.2 of Chris Smith's report (p.37-41) looks in some detail at the reasons to consider grazing. Suffice to say here that a suitable grazing regime could provide the best and most sustainable way of maintaining and improving the matrix of heath and grass communities and the wildlife they support. As mentioned earlier, non-intervention will eventually lead to the total loss of these areas while, at best, a cutting regime will produce a series of different compartments that cater for the different growth and flowering requirements of different species. Each of these compartments will have a relatively even structure and lack the intimate mix of plant height and growth stage (so beneficial to a number of invertebrate species) that a good grazing regime can encourage. Similarly, when using large cutting machinery, it is difficult to cater for anthills, which represent an important feature of established grassland and heath ecosystems.

It is important to emphasise however that grazing has to be controlled in terms of where, when and how many stock graze and indeed the type of stock. Overgrazing and poaching has to be avoided while sufficient stock need to be present to remove enough of the year's vegetation to stop succession.

#### 1.2. Grazing Regime

**1.2.1. Stocking Rates.** In an agricultural context farmers might aim for 1 cow or 4 sheep per acre but on commons, where the nutritive value of vegetation is considerably poorer, stocking will be far more extensive – possibly as low as 1 cow/4 sheep per 10 hectares (1 hectare is equivalent to 2.471 acres). [Ponies may only require a little more grazing land than sheep]. Thus if the total area to be grazed was only 20 hectares we might only need 2 - 8 animals (depending on the type of stock used).

**1.2.2. Grazing Period.** Depending on the grazing option chosen (see below), grazing small numbers over a large area may present problems, not least in being able to find stock to check on them. It may therefore be better to graze higher numbers of stock for defined periods of time. A simple guide might be to graze animals for two 5 to 10 week periods:

- between the end of March and beginning of June. Stock would be introduced as soon as ground conditions allow in sufficient numbers to achieve a good mixed sward height in the grass areas without causing poaching damage. A suitable sward height to aim for might be an average height of 8-11 cm (3-4 inches) within the range of 2-18 cm (1-7 inches). Stock should preferably be removed by mid May to allow sufficient time for grasses and herbs to flower.
- between mid August and the end of October. The majority of flowering will have taken place by this time and, providing stock numbers are not too high, some flowering will continue while grazing occurs. 'Mob grazing' – large numbers of stock for short periods – should be avoided. The aim should be to achieve a good mixed sward height as mentioned above – animals being removed before ground conditions get too wet and poaching occurs.

1.2.3. It should be noted that some poaching could be beneficial to certain species. For example, it has been suggested that a small amount of animal treading in the pond edges may be beneficial to the starfruit, while on other sites, orchids have benefited from occasional very tight grazing towards the end of the season. The recommendation would be to avoid being too prescriptive, allowing some variation from season to season, while adopting the general principles outlined above.

1.2.4. To achieve such periodic grazing it would be necessary either to use stock from elsewhere brought in specifically to graze the common during the periods required or, if the common is to have its own stock, it will be necessary to secure the use of **fall back land**. This is land where stock can be kept and grazed during the periods when they are not required on the common. As stock numbers are likely to be quite small and such fall back land could be more agriculturally improved, the area need not be very large. It might be possible for the West Wycombe Estate to identify a suitable field or fields for this purpose.

1.2.5. Such periodic grazing would mean that local residents and people walking or riding on the common would know when they might expect to come across stock.

### 1.3. Controlling Stock

Although there are basically two options worth considering, it is interesting to remember that, when the Chiltern Commons were last regularly grazed, **shepherding** would have been the most frequent method of stock control. At the turn of the century young boys or other members of the community who could not be employed otherwise would have been charged with keeping an eye on stock and making sure they didn't wander onto neighbouring properties.

Today, it is worth looking at the relative merits of tethering and fencing.

**1.3.1. Tethering.** This is still practised to a limited degree on a number of commons, this year a single goat is being tethered on the neighbouring Downley Common. It would be easy to dismiss this as a worthwhile option but that would be to underestimate the good work that tethered animals can do.

Advantages = Stock can be placed where the grazing is needed, they are easy to find!, capital outlay is small (New Forest Ponies can be purchased for £25, other stock may be cheaper), grazing of small numbers of stock is practicable, stock numbers can start low and be increased as the available grazing area increases.

Disadvantages = Stock have to be attended to daily for welfare reasons (to check that they have sufficient water and are healthy) and moved frequently (to ensure that areas do not become overgrazed). There may be concerns over dog worrying and for general stock safety if areas are to be grazed that are away from general public view.

Tethered grazing is usually practised on a small scale by individual commoners but it would be possible for a group to take on this responsibility (see below 'Who can graze stock', paragraph 1.4).



**1.3.2. Fencing.** Temporary and permanent fencing represent quite different options.

**1.3.2.1. Temporary** fencing normally involves electric netting or wire enclosing the area to be grazed. Commonly used in a number of agricultural grazing systems, it is being successfully used by one of our Chiltern commoners today.

Advantages = This method is extremely flexible and allows grazing of relatively small compartments with little initial capital outlay – the cost of 200m of electric sheep netting with the necessary stakes and battery unit is less than £200 (excluding VAT).

Disadvantages = Generally the same as those for tethering apply. Labour input in checking stock and moving fencing is high. Some graziers would not attempt to graze with temporary fencing if this was not within an area enclosed by a secure boundary fence – the risk of stock escaping being too great.

**1.3.2.2.** It is possible that commoners, exercising their rights to graze and not denying others their rights of access, could graze small compartments without a formal application to the Secretary of State, DETR. However this is a debatable legal point and would not be a recommendation of this report. In practise, for any fencing option, the 'Consultation and Approval Procedures' outlined below (paragraph 1.6.) should be undertaken.

**1.3.2.3. Permanent** fencing provides the most reliable form of stock control.

Advantages = Security for stock and neighbouring properties alike, after initial outlay maintenance costs are relatively cheap (providing the local community is supportive and vandalism is low), stock have to be checked less frequently (no need to move during grazing period once correct numbers have been decided upon, a permanent water supply can also be installed). Once erected and the grazing regime established, grazing within permanently fenced enclosures is thought to be the most sustainable long-term management option for commons.

Disadvantages = Initial outlay is high, local people and 'user groups' will have concerns over limitations to rights of access and inconvenience. While a suitable fencing scheme may overcome these concerns, the consultation and application procedures can take a long time and need considerable commitment from those taking responsibility.

**1.3.2.4.** A more detailed study of options for permanent fencing is enclosed in appendix A.

#### **1.4. Who Can Graze Stock?**

The full legal position is described in The Open Spaces Society's publication - 'Our Common Land' (author Paul Claydon) – and the DETR's 'Good Practise Guide On Managing The Use Of Common Land'.

**1.4.1.** In brief, as with other commons, Naphill has a number of **Commoners** with registered rights of pasture. These are generally specified as to numbers and types of stock and may identify times when animals can be grazed or have to be removed. Although no common rights of pasture are currently being exercised, commoners may **licence another party** to exercise these rights provided the registered numbers are not exceeded.

It is, therefore, within the powers of the commoners to organise the grazing of the common without having to take a hands-on involvement with stock management.

1.4.2. Whilst the **common's owners**, the West Wycombe Estate, do not have any rights of common, they do have the right to graze 'the balance of the land'. This is calculated as the area of land in excess of that required for all the commoners to exercise their rights to graze. As there is currently only a relatively small amount of land that would sustain stock and at very extensive rates, the balance of the land may be non-existent. However, just as commoners can licence other parties, an agreement could be reached between the owner and the commoners to graze stock.

### 1.5. Types of Stock

1.5.1. Sheep, goats, ponies and cattle all have their merits. Generally the hardier the breed (often the more traditional) the better as the stock will have to cope with vegetation that, in agricultural terms, has a poor digestibility level. Modern breeds can cope provided they are used to eating the type of vegetation the common provides – young stock that have grazed rough pasture with older animals would manage very well while other animals might lose condition. New Forest ponies have been particularly successful in tackling holly which is becoming rather too dominant on areas of the common.

1.5.2. Different stock can raise different concerns – sheep being chased by dogs, dogs being chased by cattle – but there are many examples where, once established, the animals have proved popular with locals and visitors alike. Chris Smith refers to the examples of Burnham Beeches and Inkpen Common, a visit to these commons or others where grazing is practised, might help the Committee and others assess the balance of benefit of having stock at Naphill. It should be emphasised that stock numbers are only ever likely to be very low with stock present for between 10 and 15 weeks a year.

### 1.6. Consultation and Approval Procedures

If a permanently fenced grazing regime is chosen as the way forward, the following consultation and approval procedure is recommended:

- I. Carry out a detailed survey to identify a preferred fencing line, position of access furniture, water troughs etc. Due consideration needs to be given to property boundaries, existing access points and the aesthetic impact of the fencing (see appendix A). As a general rule it is helpful to identify all the points of access and then make provision for twice this number so that people's access is potentially improved rather than limited. Although stock access to ponds may be helpful, fresh drinking water should always be available to reduce the risk of disease to animals.
- II. Approach individual commoners to explain exactly what is being proposed and why.
- III. Ask the Open Spaces Society to attend a site visit and meeting to discuss the proposals and ask for comment with regard to the best method of fencing and maintaining access for local residents and visitors alike.
- IV. Inform local residents of the need for fencing and grazing and the proposed fence line. Consult over the fence line and access points, giving local people opportunity to contribute to the process, e.g. where would be the best place for

access furniture, would kissing gates or stile be preferred? Suitable means may include use of a newsletter, perhaps followed by an exhibition evening or public displays of the proposals where people could sign up to work groups to discuss details of the proposals.

- V. Apply to the Secretary of State (DETR) for approval to fence, preferably when there is a balance of individuals and groups who are willing to positively support the application (it is an unfortunate fact that people who are not in favour of something are generally more vocal than those that are). It should be noted that, while there is no actual charge or fee for making such an application, public notices and advertisements in the press are required. Together with arranging meetings and corresponding with individuals and groups, the costs - particularly in terms of time - do mount up. A straight forward application could take 4/5 months while a contested application could go to public enquiry and the process could take over 2 years! Perhaps the input of voluntary time and organisation is one of the ways the Naphill Common Committee could really utilise their strengths and energies.

## 2. GRASS CUTTING

### 2.1. Cutting Regime

2.1.1. As mentioned earlier, it is not possible to achieve the same intimate mix of plant structure and species with cutting compared to grazing regimes. Although, in this sense, cutting and removal can be seen as the second best option, it is still possible to maintain a diverse habitat of grasses, wildflowers and heather through this method. A traditional hay cutting regime can encourage wildflowers but be pretty disastrous for invertebrates, many caterpillars and butterflies within the hay crop being destroyed during the cutting and baling operations. By varying the cutting time on different compartments the impact on any one invertebrate species is lessened. On some commons it may be appropriate to treat some areas as hay meadow but at Naphill the open areas are small with mixed vegetation so the cutting regime should aim to imitate the grazing periods mentioned earlier.

2.1.2. **Grass.** As with grazing it is important not to be too prescriptive, timing of cuts may need to be varied depending on the season and the amount of growth and hopefully, as management progresses, the area of open land being reclaimed from scrub invasion will increase. The basic pattern would be:

- Spring cut (March/April) – to remove growth that has occurred since the previous cut so keeping the sward open for the finer grasses and less competitive herb species. All cuttings would be removed (see ‘composting’, paragraph 2.3.).
- Late summer/autumn cut (August/September) – once grasses & flowers have had an opportunity to set seed, the vegetation is cut and removed to prevent a build up of dead material at the base of the sward which will again limit diversity. Cut height should be 5-7.5 cm (2-3 inches). Preferably the cut vegetation would be left lying on the ground for a day or two and, if possible, turned to encourage seed and surviving invertebrates to return to the ground.



2.1.3. Varying the summer/autumn cut timing between compartments and also on a year to year basis for any given area, will favour different specie flowering times and, therefore, encourage greater diversity in the long term.

2.1.4. Leaving an uncut margin (1m or wider depending on compartment size) or even whole grass areas uncut every 3<sup>rd</sup> or 4<sup>th</sup> year will be beneficial to moths and small mammals. Care has to be taken to avoid succession to scrub – any uncut margins should be cut and vegetation removed on a 3-5 year rotation (i.e. don't cut all the margins in one year). Cut height should be 7.5-12.5 cm (3-5 inches). If scrub is invading the margin within the 3-5 year period, the margin should be topped above the main grass height to cut back the woody vegetation.

2.1.5. The closer different compartments are the better, creating a matrix of different vegetation heights to benefit invertebrates. However, practical considerations will limit this. If a cutting regime is chosen and once the method of cutting is decided upon, a more detailed plan will need to be prepared.

2.1.6. **Heather.** The aim of the cutting regime will be to prevent all the heather from getting senescent, too woody, old and leggy and eventually collapsing with poor regeneration. Cutting might be three times over a 15 year cycle, cutting at different heights before the last cut 'coppices' the heather to encourage regrowth. Again the regime would seek to produce a varied height and age structure within each area. A detailed survey would help identify practicalities – as with other elements of the plan the final regime would need to be approved by English Nature.

2.1.7. Cutting back encroaching scrub, the removal of bracken litter and possibly scarifying the ground before spreading some of the heather cuttings could encourage the expansion of heather areas.

## 2.2. What Machinery to Use

2.2.1. Ideally aim for simple but very robust machinery. It might be possible to find an old style single chop forage harvester that would do the job, otherwise a heavy duty purpose built cutting and removing machine might be purchased.

	Advantages	Disadvantages
Forage Harvester	<ol style="list-style-type: none"><li>1. Initial outlay potentially cheaper.</li><li>2. Operation with separate tractor and trailer gives more flexibility for disposal site.</li></ol>	<ol style="list-style-type: none"><li>1. Needs separate tractor and trailer (and operator) to collect and dispose of cut material.</li><li>2. Not very manoeuvrable, needs reasonably sized turning circle.</li></ol>
Purpose Built Machine	<ol style="list-style-type: none"><li>1. Robust, heavy duty.</li><li>2. Able to cut thick vegetation, depending on make it may be able to cope with scrub control as well.</li><li>3. Very manoeuvrable.</li></ol>	<ol style="list-style-type: none"><li>1. High initial outlay.</li><li>2. Needs moderate sized tractor to operate (possibly 60–80 hp min.).</li><li>3. Although can transport and tip arisings, time taken may mean that second trailer and vehicle needed.</li></ol>

2.2.2. It might be possible to share the use of machinery with other commons using this management regime providing the detailed management plans allow sufficient time to carry out the necessary operations on all the commons within the correct seasons.

## 2.3. Composting

2.3.1. While it might be theoretically possible to use some of the vegetation as animal feed – if weather conditions allowed a ‘hay crop’ to be made and stock were available to take the feed – in practise the question is going to be one of disposal. The most realistic option will be to choose a site for composting. The only alternative would be to transport the vegetation to a landfill site where the costs would be prohibitive.

2.3.2. The choice of site(s) will have to fulfil the following conditions:

- Will not allow the run off of any nutrients that might damage the SSSI;
- Close enough to the areas to be cut to make the transportation of cuttings practical;
- Accessible for removal of composted material.

2.3.3. Disposal of the composted material may not be easy. Enquiries should be made as to the possibility of an arrangement with a local allotment holders association for use of the composted material as gardening mulch. Alternatively a local farmer may be willing to use the material as organic manure.

### 3. SCRUB MANAGEMENT

3.1. While it is easy to regard scrub as something to be removed to prevent loss of open areas, this would be to overlook the valuable habitat it provides in its own right (see Chris Smith's proposed management project IV, p.85 of his report). Scrub communities can be managed by rotational coppicing over a 10-15 year cycle but in the context of this report we are looking primarily at controlling encroachment and linking open areas.

3.2. Lighter scrub and regrowth might be controlled by grazing animals or the machine mentioned above. Initially chainsaw operators will be required to open areas out. The brash should either be taken back beneath mature woodland cover edge (being cut to lie on the ground) or chipped. Chippings could be left to mulch down or blown onto paths and bridleways as a temporary surface.

3.3. When deciding the actual amount of scrub to be cut each year, besides the cost of the work, the desire to make significant in-roads has to be balanced against the ability to maintain open areas.

3.4. Unit costs for scrub management are detailed at appendix C.

### 4. BRACKEN CONTROL

4.1. Again it should be noted that bracken can provide a valuable habitat for nesting birds, certain flora and butterflies. However, left unchecked, bracken can take over valuable areas of open grass and heath. Concerns have also been expressed over the carcinogenic properties of bracken spores and sap while ticks can present a problem for stock, dogs and their owners alike.

4.2. In the past bracken would have been restricted by the effects of animal treading and cutting and removal for animal bedding. Today's management employs a combination of cutting and removal, rolling or crushing to weaken the rhizomes and possibly spraying. Different sites have had success with different methods but a common factor is the need to use more than one technique for several years. Even after the bracken is at an acceptable level, general vegetation management will have to maintain control.

4.3. A suggested management programme would include:

- An initial roll/crush when the bracken has expended maximum energy producing the year's growth and before the underground rhizomes are recharged – around about July.
- Cutting and removing vegetation to prevent litter build up – August/September.
- A further heavy roll in the autumn to further weaken the rhizomes – September/October.

Provided other vegetation isn't being harmed, nesting birds or other wildlife are not being disturbed and vehicles are not causing damage, the more frequently the bracken is rolled

or cut the higher the level of control. As with all potentially damaging management operations on a SSSI, prior EN agreement must be received.

4.4. Unit costs are detailed at appendix D.

### 5. ACCESS ISSUES

5.1. The need to control unwanted vehicular access and maintain path surfaces so that horse riders and others keep to the agreed routes already exists. As management progresses and open areas expand, the need to avoid conflicting uses might increase.

5.2. Vehicular access can be effectively restricted by the use of 'dragon's teeth'. These are simple wooden posts, about 1 metre in length, that have a metal foot attached (a piece of reinforcing rod hammered through a pre-drilled hole will do) and are securely buried for half their height in the ground. Pressure treated softwood posts can be used but hard wood posts cut during thinning operation could be just as effective. Buried posts should be spaced at just less than 2m intervals to discourage unwanted parking or driving on the common.

5.3. Determined or malicious access by vehicle users may need more drastic attention such as whole tree trunks being placed across access points. Care has to be taken not to restrict legitimate use.

5.4. Path surfacing can prove very expensive. The use of wood chips has already been mentioned but this is only a temporary measure, chips would need to be topped up as they rotted down, and areas that have suffered bad rutting and disruption may need more drastic action. In these cases it might be advisable to dig out the worst of the rutted clay and replace with a layer of inert crushed stone to act as a foundation and aid drainage. The top layer could then be made up with finer stone or wood chips. To avoid such expense it might be preferable if user groups could agree a code of use so that lengths of path, where damage is likely to occur, are not used by heavy vehicles or possibly horses during wet conditions – this is dependant on other routes being available of course.

5.5. While not wishing to encourage the proliferation of signs in such an unspoilt setting, it might be appropriate to consider the use of discrete waymarking posts (similar in design to the dragon's teeth but with appropriate symbols routed into a diagonally cut surface) to clarify bridleway and footpath routes. If an access code is agreed, small signs could also be erected at the main entry points to the common.

5.6. Example costs for installation of dragon's teeth and path surfacing are detailed at appendix E.

## 6. GRANT AID

Once a desired course of action has been chosen, detailed plans can be drawn up and applications for grant aid made. Such grant aid might include Heritage Lottery Fund (HLF), the Local Heritage Initiative, Countryside Stewardship Scheme, local authority grants and others. Most grant aid will require a level of funding from the applicant though many will take into account volunteer involvement (reference is made to costing volunteer time in the appendices).

## 7. CONCLUSION

During the last ten years 'sustainability' has become the buzzword. In the true sense of the word, sustainable management might be regarded as management that pays for itself. Using this definition, there would be little conservation work that could be described as sustainable when making a purely financial analysis. However, as was said at the beginning of this report, non-intervention is not an option if the valuable wildlife habitats characterised by open common land are not to be lost at Naphill. Pragmatic decisions have to be made weighing the financial cost of management against the subjective values of wildlife, local environment and public enjoyment. The most sustainable option then has to be chosen.



## APPENDIX A

### Permanent Fencing Options for Grazing

#### Common Perimeter

Fencing the common perimeter would permit the long-term objective of wood-pasture, described in sections 3.1 and 3.2 of Chris Smith's report (pages 36,37), to be achieved.

Moving in a clockwise direction from the northern most point, such a perimeter fence would follow the boundaries of properties backing onto the common, the track from Hunts Hill to Cookshall lane, Cookshall Farm, Great Cookshall Wood, Bradenham Hill Farm and adjoining properties, the National Trust and properties in compartment 3.2. This would obviously include the neighbouring Bradenham common so consultation would be required with the National Trust and neighbours of this common.

Members of the Committee suggested that perimeter fencing should follow the historic boundary and therefore the boundaries of properties backing onto the common. Such fencing, together with the dragon's teeth mentioned in paragraph 5.2, would help prevent property encroachment and was thought preferable to fencing out a vehicle access strip. Separate costing for a 'residential' grade fence has been included and the field gate number includes provision for the gates for each property. However, it is recognised that some of this fencing would not be required (or wanted by property owners) nor do all properties have vehicular access rights to the common.

Chris Smith's report also recommends hedge restoration along the Cookshall farm boundary (page 71). Ideally this should be done at the same time as the fencing but it is not costed below.

Lengths and numbers of gates etc. have been taken from a map kindly supplied by Mrs Jill Shiu. All measurements and prices are approximate and for illustration purposes only. Detailed surveying and pricing would be required before embarking on such an option.

Costs are based on contractor rates to erect the fencing but do not include VAT. Volunteer unit rates have been used for stock management.

	Quantity	Unit Cost (£)	Total (£)
Stock Fence	3,800 m	3.5 - 5.75 /m	13,300 - 21,850
Residential Fence	1,900 m	25 /m	47,500 <sup>1</sup>
Cattle Grids	6	2,600	15,600
Field Gates	50 <sup>2</sup>	300	15,000
Bridle Gates	5	250	1,250
Kissing Gates	20	400	8,000
Stiles (every 50m)	56	175	9,800
Water Troughs /supply	10	175	1,750
Stock	10	25	250
Management	105 man days	50	5250

## Naphill Common

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### Notes

- <sup>1</sup> It might be appropriate to offer a 50% grant up to £200 for each property (assuming the average property width is 15-20m).
- <sup>2</sup> N.B. generous estimate taking into account residential properties.

### **B. Fencing SE Compartment**

A smaller trial area of fencing could be considered. A suggested fence line would include Chris Smith's compartments 1/5 & 1/6 (see page 61) and 5/4 & 5/5 east of path 506 (see page 70).

	Quantity	Unit Cost (£)	Total (£)
Stock Fence	890 m	3.5 - 5.75 /m	3,115 - 5,118
Residential Fence	360 m	25 /m	9,000
Cattle Grids	1	2,600	2,600
Field Gates	15	300	4,500
Bridle Gates	2	250	500
Kissing Gates	7	400	2,800
Stiles (every 50m)	10	175	1,750
Water Troughs /supply	1	175	175
Stock units	2	25	50
Management	25 man days	50	1,250



## APPENDIX B

### Cutting & Removing Regime

#### A. Machinery Purchase

Costs of cutting and removal machinery vary according to working width (1.2–2.0m) and robustness. The tougher machines can cope with material up to 75mm (3 inches) in diameter.

Price new	£4,000 - £11000 (+VAT) <sup>1</sup>
Maintenance (allow contingency)	£500 p.a.
Labour <sup>2</sup> : assume 15 days <sup>3</sup> at 'qualified volunteer' rate (£150/day)	£2,250

#### Note

- <sup>1</sup> Purchase and maintenance costs may be reduced significantly if machinery is shared with other commons.
- <sup>2</sup> Volunteer labour may be free but is costed here for grant aid purposes.
- <sup>3</sup> Actual time will depend on material being cut and area. Area will increase as management to expand open areas increases. The above assumes a 5 day cutting time in the spring with 10 days for the late summer/autumn cut.

The above figures do not take into account the purchase of a tractor.

#### B. Contractors

Contractor rates will vary and the rate per hectare may decrease as the area increases.

Contract labour & machinery: 15days (£200/day)	£3,000 (+VAT)
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## APPENDIX C

### Scrub Management

The area of scrub to be managed will be guided by Chris Smith's report together with a yearly assessment on the ground taking account of both ecological and aesthetic considerations. Scrub regrowth will occur even with stump treatment but it is severely restricted if the area is grazed at sufficiently high levels.

Dense scrub – approximate contractor rates	£1450/ha
Scrub regrowth (assuming cutting/removal machine can be used at contractor day rate)	£200/ha

## APPENDIX D

### Bracken Control

Agricultural rollers can bruise bracken fronds though specialised Bracken Breakers have been developed by a Yorkshire based agricultural engineer, Brian Otterburn, in conjunction with EN. These can be tractor mounted or trailed behind a land rover or quad bike and are, therefore very manoeuvrable.

Prices new: approximately £2000

Purchase of such machinery may not be justified for the relatively small areas of bracken at Naphill though sharing with other commons would be worth considering.

It is anticipated that all the current bracken areas could be rolled or crushed within a day (cutting and removal could be carried out when other vegetation is cut).

Labour: (1 day in July, 1 day in October – skilled volunteer rate, £150/day) £300

## APPENDIX E

### Access Issues

#### Dragon's Teeth

Pressure treated softwood, with metal 'foot' attached	£350/100
Installation cost (7 days unqualified volunteer labour)	£350

#### Path Surfacing

Contractor rate to grade out worst of rutting, infill with crushed stone, top off with wood chips	£1180/100m
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## APPENDIX F

### Summary of Unit Costs

The following are estimated prices that have been used for illustration purposes within this report.

Stock fencing:	
Open field with tractor access	£3.50/m c
Woodland – tractor access	£4.25/m c
Woodland – no tractor access	£5.00/m c
With stiles/gates every 50m	£5.75/m c
Residential fence (post & rail[x4])	£25.00/m c
Cattle Grids	£2,600.00/m c
Field Gates (10 ft wooden)	£300.00 c
Bridle Gates	£250.00 c
Kissing Gates	£400.00 c
2 Step Stiles	£175.00 c
Water Trough + 50m supply	£175.00 c
Trailed cutting & removal machine	£4,000 - £11,000
Scrub clearance (including stump treatment):	
Dense (75-100% cover)	£1,450.00/ha c
Moderate (50-75% cover)	£1,050.00/ha c
3m width for tractor access	£1.50/m c
Bracken Breaker	£2,000.00
Dragon's teeth	£350.00/100 c
Path surfacing	£1180.00/100m c
Labour units:	
Unqualified	£50.00 v
Qualified (chainsaw operator, tractor driver, spraying etc.)	£150.00 v

### Notes

- c Contractor rates do not include VAT.
- v Volunteer labour rates to be used when applying for grant aid.

## APPENDIX G

### Outline Management Plan

Outline Management Plan		January	February	March	April	May	June	July	August	September	October	November	December
Year 1	Grazing	Clear vegetation along fence line				Erect stock & residential fencing/ access furniture/ install water supply <sup>1</sup>							
	Cutting			Spring cut/remove					Late summer/autumn cut				
	Scrub	Cut dense scrub									Cut scrub regrowth		
	Bracken							Roll/ crush		Cut/ remove	Roll/ Crush		
	Access					Dragon' teeth/path surfacing works							
Year 2	Grazing			Stock present					Stock present				
	Cutting			Spring cut/remove					Late summer/autumn cut				
	Scrub	Cut dense scrub									Cut scrub regrowth		
	Bracken							Roll/ crush		Cut/ remove	Roll/ Crush		
	Access					Path surfacing works							
Year 3 <sup>1</sup>	Grazing			Stock present					Stock present <sup>2</sup>				
	Cutting			Spring cut/remove					Late summer/autumn cut				
	Scrub	Cut dense scrub									Cut scrub regrowth		
	Bracken							Roll/ crush		Cut/ remove	Roll/ crush		
	Access					Path surfacing works							

#### Notes

<sup>1</sup> Fencing may be phased over 2 years if large area is chosen, hedge restoration is included or to spread costs.

<sup>2</sup> Review stock numbers.

<sup>3</sup> The year 3 programme will be repeated in following years. Areas of scrub and bracken to be managed and path to be surfaced will decrease in time, areas to be cut and removed will increase.

## APPENDIX H

### References

- Bullen, C. (1999) 'Fencing and Common Land Management' UCL Dissertation  
Claydon, P. (1985) 'Our Common Land' Open Spaces Soc.  
DETR (1998) 'Good Practise Guide on Managing the Use Of Common Land'  
Smith, C.J. (1995) 'A Preliminary Field Survey and Proposals for the Continuing  
Management of Naphill Common and part of Downley Common'

Neil Jackson, Smallwood, on behalf of the West Chiltern's Common's Project, 15.11.99

## ADDENDUM

### To Naphill Common Report

16.11.99

#### COMPARISON BETWEEN GRAZING AND CUTTING OPTIONS OVER TEN YEAR PERIOD

The costs in appendices 1 & 2 are thought to be a 'worse case scenario'. It is felt that the actual costs for some items may well be significantly less, e.g. the required contribution for residential fencing and gates, stock management costs and time taken to cut and remove vegetation. The following comparison therefore uses less pessimistic figures, more accurate figures can be calculated once an option is chosen and a detailed survey undertaken to measure areas to be included for management purposes.

	Grazing		Cutting and Removal	
	Perimeter Fence	SE Compartment	Machinery Purchase	Contractor
Set-up Cost	£ 83,650 <sup>1</sup>	£ 19,375 <sup>1</sup>	£ 10,000 <sup>4</sup>	-
Management/ Running Costs Years 1-5	£ 6,250 <sup>2</sup>	£ 3,000 <sup>3</sup>	£ 7,000 <sup>5</sup>	£ 6,000 <sup>5</sup>
Years 6-10	£ 6,250	£ 3,000	£ 9,250 <sup>6</sup>	£ 9,000 <sup>6</sup>
<b>Total</b>	<b>£ 96,150</b>	<b>£ 25,375</b>	<b>£ 26,250<sup>7</sup></b>	<b>£ 15,000<sup>8</sup></b>

#### Notes

- <sup>1</sup> Although minor maintenance will be required, the fencing and associated structures should last 20+ years.
- <sup>2</sup> 25 days at the volunteer rate for each year.
- <sup>3</sup> 12 days at the volunteer rate for each year.
- <sup>4</sup> Considerably less if shared with other commons.
- <sup>5</sup> Assume average at 6 cutting days (2 spring, 4 late summer) for first 5 years.
- <sup>6</sup> Assume average at 9 cutting days (3 spring, 6 late summer) for second 5 years.
- <sup>7</sup> Depending on use, the machine may have to be replaced after 10 years.
- <sup>8</sup> Contractor costs will increase as area increases and with inflation. This is a year on year cost with no saving over time.