The Feasibility of a New Approach to Grazing in the Cotswolds NIAs

For

The Cotswolds Conservation Board

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PROJECT SUMMARY

Project title: The Feasibility of a New Approach to Grazing in the Cotswolds NIAs

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Executive Summary

The appropriate management of grassland is essential for the formation and maintenance of important habitats, as well as for the preservation of productive capacity and cultural heritage. Species rich semi-natural grassland in the Cotswolds AONB provides a number of conservation and biodiversity benefits. However, due to changes in grassland management and the increase of arable production in the area, many of these important grassland areas have been lost, leading to habitat fragmentation. Grazing provides the most appropriate management approach, allowing areas of permanent pasture to become more semi-natural in character. However, livestock numbers on the Cotswolds have declined in recent years leading to the under-grazing of some areas of grassland which will revert to woodland over a number of years without appropriate intervention.

In order to address a number of issues relating to grassland management in the Cotswolds Scarp and Cotswolds Valleys Nature Improvement Areas (NIAs), the Cotswolds Conservation Board commissioned this study to assess the feasibility of developing a new approach aimed at sustaining or increasing the grazing of land that has become un-grazed and/or undermanaged in order to increase habitat connectivity and provide a robust and resilient ecological network, contributing to the capacity of England's wildlife to cope with the impacts of climate change. This will allow for the movement of species between areas of habitat and, where necessary, the longer-distance migration of species to stay within their climate envelope.

In particular, the project explores the use of a cooperative grazing approach, whereby livestock would be grazed across large areas, unrestricted by ownership boundaries. It is necessary to ensure that any proposals are financially viable, as such, a primary objective of this study is to assess whether a business case can be built to support the proposal. Additionally it is important that any new approach contributes to the wider objectives of the NIAs.

In collaboration with the Cotswolds Conservation Board, two study areas are selected in the north of the AONB, one in the Cotswold Scarp NIA, and the other in the Cotswolds Valleys NIA. In order to establish the current state of grassland and management strategies adopted in the study areas, 28 in-depth interviews with landowners and graziers are undertaken. A focus group is conducted with graziers, landowners and other key stakeholders to further explore the findings of the interviews.

The study identifies various barriers to and opportunities for grazing in the study areas. Three barriers are noted as being particularly significant. Firstly, is a lack of stock proof fencing associated with marginal grassland and an unwillingness among landowners to make financial investments in permanent fencing. Graziers consider the presence of stock proofing to be a priority when sourcing new grazing land. Secondly, as grassland becomes more marginal, landowners and graziers become less aware of its potential for grazing so it becomes more overgrown and the quality of the grass continues to reduce. As such, areas of grassland that have not been grazed in the recent past are not considered to be part of current stocks of grassland and do not feature in landowners' daily management decisions. A 'spiral of decline' is therefore identified whereby land which is not grazed becomes increasingly un-grazable. Thirdly, landownership, particularly in the Scarp has changed significantly in recent years. There are now a larger number of smallholdings, many of which are owned by hobby or non-farmers. These landowners may not be embedded within traditional farming networks and may not prioritise farming on the land, including the need for grassland to be grazed. Additionally, non-farming landowners may be unaware of Cross-Compliance regulations associated with grassland management or opportunities to enter into agri-environment schemes. In addition to these barriers, the ending of the Environmentally Sensitive Areas scheme is identified as a key risk to grassland in the area as many landowners are planning to plough large areas of arable reversion within the next two years.

Various opportunities are also noted. These include a high demand for additional grazing land among graziers, and a recognition among many landowners of the benefits provided by grazing through a range of informal and formal agreements. Additionally, many interviewees recognise the conservation benefits of appropriate grazing and value biodiversity. Both landowners and graziers also recognise the potential

role of the Cotswolds Conservation Board in facilitating an increase in the amount of grazing land through grants for stock proofing particular areas.

Although this study finds that a business case for cooperative grazing can be built based on the benefits it could provide to both landowners and graziers, is noted that for such an approach to be successful buy-in is essential. Therefore the proposal for a cooperative grazing approach is considered to be unfeasible due to a lack of support from key stakeholders. This is mainly because all large parcels of grassland in both of the case study areas are already being grazed and graziers and landowners are generally happy with the current system of letting land formally or informally. As a result, areas that are unmanaged and un-grazed are generally small and isolated and enter into a spiral of increasing decline/marginalisation. In order to address grazing in these areas we suggest that a different approach is required which focuses on promoting the long-term financial benefits of grazing undermanaged areas to both landowners and graziers in order to achieve buy-in to any new approach. The proposals for a pilot project focus on three key elements:

- The provision of grants for stock proofing through a new system established by the Cotswolds Conservation Board, as well as through existing channels such as Higher Level Stewardship. This would be attached to grazing agreements to ensure long-term grazing of the area for at least 10 years.
- The development of an online grassland database to match graziers with grassland and from which formal grazing agreement templates can be downloaded. This will provide a forum through which landowners, some of which are not part of traditional farming networks in the area, could advertise grassland.
- The appointment of a project officer to manage a pilot project to engage with landowners and graziers. The key aim would be to identify areas of undermanaged grassland within the spiral of decline that has been noted and seek to restore it so it is regularly grazed under the existing grass letting process. This will involve direct contact with the landowner to promote the project and discuss opportunities for grazing the area.

While a cooperative grazing approach is not considered appropriate, the benefits of *collaborative* grazing are noted. This involves neighbouring landowners/graziers working together to graze currently undermanaged areas. Any new approach should encourage collaborate agreements but should not be restricted to them.

This report recommends the implementation of a pilot scheme in the Cotswolds Scarp to establish the uptake of the recommended proposals among landowners and graziers. In order for this to be achieved, the financial benefits available to both parties must be promoted through face-to-face engagement. The suggestion is to encourage landowners to let undermanaged areas of grassland at a rate of zero. Instead of focussing on the short-term rental value of the land, the project should promote the potential for the value of the land to be increased through better management provided by the grazier, together with the development of a grazing infrastructure through the provision of grants for stock proofing. The Cross-Compliance regulations associated with grassland should also be promoted alongside opportunities to enter into agri-environment schemes which would encourage appropriate grassland management.

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GLOSSARY

AONB	Area of Outstanding Natural Beauty
bTB	Bovine Tuberculosis
CCB	Cotswolds Conservation Board
ELS	Entry Level Stewardship
ESA	Environmentally Sensitive Areas
HLS	Higher Level Stewardship
GAEC	Good Agricultural and Environmental Condition
IBDA	Integrated Biodiversity Delivery Area
LNP	Local Nature Partnership
NIA	Nature Improvement Area
SFP	Single Farm Payment
SPS	Single Payment Scheme
SMR	Statutory Management Requirements

1. Introduction

The Cotswolds Area of Outstanding Natural Beauty (AONB) is characterised by its rich and diverse landscape shaped by the Jurassic limestone on which it lies. The AONB incorporates a gentle dipslope with a steep western facing slope and covers a total of 790 square miles, stretching from the City of Bath in the south to Warwickshire and Worcestershire in the north. The area contains nationally important limestone grassland habitats interspersed with ancient woodland.

There are 3,434 farm holdings in the Cotswolds AONB. The rich mosaic of the Cotswolds is documented in a detailed Landscape Character Assessment which identifies 19 landscape character types in the area. This includes the Scarp which represents a dramatic landscape marking the western edge of the AONB. The thin soil and steep topography of the Scarp prevents cultivation. The landscape is therefore mainly permanent pasture with areas of unimproved grassland and species rich ancient woodland. To the east of the Scarp, the undulating plateau is characterised by large arable fields and improved pasture. Further east, the lowland landscape is well maintained by arable farming and grassland and areas of ancient woodland (Cotswolds AONB Partnership n.d). The 19 landscape character types are shown in Appendix 1.

The Cotswolds AONB contains over 50% of the UK's total unimproved Jarassic limestone grassland, providing habitats for many rare plant species, including orchids, pasqueflower and Cotswold pennycress. The grassland across the AONB is also home to nationally rare species of butterfly such as the chalkhill blue. There has been a significant decline in wildflower meadows and grassland in the Cotswolds from 40% land coverage in the 1930s to the current level of 1.5%. Loss of wildflower rich grassland is due to a number of factors, including the use of artificial fertilisers as well as over or under-grazing (Cotswolds AONBa n.d; Grazing Animals Project, 2009). While the Cotswolds used to be famous for wool production, the reduced profitability of livestock farming has led to a reduction in livestock numbers on the hills, which has consequently led to the under-grazing of many areas. Between 1990 and 2007, the number of beef cows on the Cotswolds reduced by 8% and the number of sheep reduced by 23% (Cotswolds AONBb, n.d). Grazing of land is essential to prevent the encroachment of scrub which shades out rare flowers and will eventually lead to succession to woodland. In order to ensure the protection of valuable grassland across the Cotswolds AONB, grazing is essential. However, it is thought that in certain areas, grassland is being undermanaged or abandoned. Appropriate management of grassland will allow it to become more semi-natural in character and will help to link areas of particular biodiversity value. The Cotswolds Conservation Board has commissioned this study to establish whether a new approach to grazing may be able to address these issues and help to secure the management of grassland in the future. The aim and objectives of the study are detailed in the following section.

1.1. Project aim and objectives

The overarching aim of this study is to assess the feasibility of a cooperative grazing approach in two different but contiguous areas: the Cotswold Scarp and Cotswolds Valleys NIAs, to provide an indication of the likely opportunities and barriers associated with such an approach. In order to achieve this aim, the following six objectives have been identified:

OBJECTIVE 1.
To assess the current nature of grassland habitats in the Cotswold Scarp and High Wold and the current grazing approaches allowing for the identification of areas of under-grazing and poor grassland management in the two areas.

OBJECTIVE 2.
To establish the various cultural and socio-economic factors associated with cooperative grazing across ownership boundaries.

OBJECTIVE 3.
To identify the potential barriers and opportunities associated with the introduction of a cooperative grazing approach.

OBJECTIVE 4.
To assess the potential contribution of a cooperative grazing approach to the long term aims of the Cotswold AONB and the Cotswold Scarp NIA, including the provision of ecosystem services and increasing the connectivity of fragmented habitats.

OBJECTIVE 5.
To develop a proposal for the implementation of a pilot cooperative grazing scheme

OBJECTIVE 6.
To provide a number of recommendations in relation to whether a business case can be made for the introduction of a cooperative grazing scheme and the mechanisms required for its implementation.

1.2. Landscape scale management and the role of a new approach to grazing

The Lawton Review (*Making Space for Nature*), highlighted the value of England's wildlife and landscape (Lawton et al. 2010). However, the report notes the continued decline in biodiversity across Europe in recent years and recognises the increasing pressure on the natural environment from agriculture and development. It is therefore essential that the various benefits provided by the natural environment are carefully balanced in order to ensure the continuation of profitable agricultural production, while protecting and enhancing the intrinsic values that the environment provides. These values include ecosystem services such as food, water, materials, flood defences, and carbon sequestration. These issues are supported by the government's commitment to the the Biodiversity 2020 strategy which sets out the ways in which we are to meet our international and EU target (Defra 2011). Lawton et al (2010) discuss the role of ecological networks in conserving wildlife and joining up environments that have become fragmented due to human activity. The overarching conclusion of the Lawton review (2010) is the need to enhance the resilience and coherence of the current ecological network in England. The review suggests that there is a need to improve the quality and increase the size of current sites, enhance the connection between sites, create new sites and reduce pressures on the wider environment. The review summarises this in four words: *more, bigger better* and *joined*.

While it is not a new concept, since the publication of the Lawton Review (2010), the Government has increasingly moved towards landscape scale management; firstly, through the introduction of Integrated Biodiversity Delivery Areas (IBDAs)[1] and secondly through the more recent creation of Nature Improvement Areas (NIAs). This approach emphasises cooperation and communication between stakeholders to identify overarching objectives for the successful management of a particular area unrestricted by ownership or administrative boundaries.

The Government published its commitment to the development of NIAs in its 2011 White Paper entitled *The Natural Choice: securing the value of nature*. The White Paper (HM Government 2011: 3) states that the role of NIAs is to "enhance and reconnect nature on a significant scale". In order to do this, a commitment has been made to the development of Local Nature Partnerships (LNPs) to bring together a range of stakeholders to develop collective objectives to meet the aims put forward by the Lawton Review (2010). On 12th February 2012, 12 NIAs that will receive government funding were announced. Outside of this, independent NIAs can also be established.

1.3. Cotswolds NIAs

Two NIAs have been identified in the Cotswolds AONB by the Cotswolds Ecological Networks Forum. They are: the Cotswolds Scarp NIA and the Cotswolds Valleys NIA. The location of the two NIAs is shown in Appendix 2. The South West Nature Map's Strategic Nature Areas and Oxfordshire's Conservation Target Areas were used to identify areas with the best habitat restoration potential. Local experts, as well as data from the Cotswolds AONB Landscape Character Assessment, were also consulted.

The NIAs have been identified for a number of reasons. These include:

[1] For a detailed discussion and evaluation of IBDAs see Short et al (2012)

- The Cotswolds contains just over half of the country's species rich Jurassic limestone grassland
- The Cotswolds is one of five Ancient Woodland Priority Areas in the south west
- Together, woodland and grassland form an important mosaic which provides a variety of wildlife and habitat benefits.

1.3.1. The Cotswolds Scarp NIA

The Cotswolds Scarp retains much of its semi-natural character and provides the opportunity to create an 80 mile long habitat corridor, running on a south-north axis. According to the Lawton Review (2010), in order to ensure the capacity of England's wildlife to cope with the impacts of climate change, the existence of a robust and resilient ecological network is essential. This will allow for the movement of species between habitats and, where necessary, the longer-distance migration of species to stay within their climate envelope. The large size of the Cotswolds Scarp NIA will allow grassland and woodland species to successfully adapt to climate change by moving to new climate space within the area. Other ecosystem services will also be provided such as carbon sequestration by woodland and permanent pasture, soil protection and flood prevention.

The NIA contains a number of commons which are currently fragmented and would benefit from linkages through more appropriate management. The area also benefits from significant tourism and includes the Cotswold Way National Trail. Appropriate landscape management will enable the NIA to contribute to the further development of tourism in the area and the local production of livestock.

1.3.2. The Cotswolds Valleys NIA

The Cotswolds Valley NIA is made up of river corridors linking the Cotswold Hills to the Thames Valley and Cotswolds Water Park. Most of the rivers in the NIA are nationally important examples of oolitic limestone rivers of high wildlife value. Current land management in the area poses a threat to the rivers due to diffuse water pollution. The NIA will therefore focus on the appropriate management of the valley sides, providing an opportunity to create wildlife corridors made up of a mosaic of woodland, scrub and limestone grassland. The management of the valley slopes will focus on measures such as buffering water courses and connecting habitats to provide habitat corridors and improving water quality. With the Environmentally Sensitive Areas scheme coming to an end in 2014, many areas of grassland in the Cotswolds Valleys NIA are at risk of being ploughed as they are brought out of arable reversion.

1.4. Delivering the NIAs

In order to build robust ecological networks in the NIA, the Cotswolds Ecological Networks Forum has outlined the following objectives (Cotswolds AONBc n.d):

- Develop and deliver the Cotswold's NIAs by coordinating existing activity and filling gaps in activity through developing new projects
- Encourage and realise opportunities to increase habitat connectivity both with the NIAs and across the wider landscape
- Identify and develop new ways of sustaining activity and communicate key messages.

This project will feed into these objectives by exploring the potential for a new approach to grazing in the Cotswolds NIAs to help to meet the wider goals of the Cotswolds NIAs.

1.5. Current state of grassland in the Cotswolds NIAs

The Cotswolds Scarp NIA has retained much of its semi-natural character and has a large amount of permanent pasture. The area is dominated by permanent pasture which could provide an important corridor between existing unimproved grassland habitats if it became more semi-natural in character by appropriate management. The retention of the corridor is essential for enabling wildlife to successfully

adapt to the impacts of climate change. Although much of the grassland in the NIA has been retained, some areas are threatened due to a lack of management leading to the development of rank sward and scrub. In comparison, the Cotswolds Valleys NIA is dominated by arable farming. However, there still exist isolated areas of grassland and arable reversion. These pockets of important grassland are threatened due to the continued increase in commodity prices which are encouraging farmers to plough grassland for arable production. This would further isolate the grasslands in this area.

Coupled with high prices for arable crops, the profitability of livestock production has continued to decline, leading to a reduction in livestock numbers in the Cotswolds. Some grassland in the AONB have therefore been under-grazed and in some cases abandoned. In order to address these issues, it is essential that a suitable level of grazing can be maintained in the area. A new approach to grazing is therefore required. In line with the landscape scale management approach, a cooperative grazing strategy has been suggested whereby a livestock business would graze extensively across ownership boundaries. This approach is discussed in more detail in the following section.

1.6. Cooperative grazing

Cooperative management of natural resources has been shown to provide a number of biodiversity benefits (Pretty and Smith 2003; Mills et al 2011). For example, a study carried out by Mills et al (2011) found that collective agri-environment schemes have the potential to deliver significantly higher biodiversity gains than those implemented on individual farms. Mills et al (2011) suggest that such projects can reduce habitat fragmentation and encourage large scale habitat restoration. The benefits of a cooperative approach to agri-environmental management have been recognised and a supplement for group applications is offered for Higher Level Stewardships. In the case of grazing, a cooperative approach would involve agreements between contiguous landowners to allow grazing across their ownership boundaries. This would ensure appropriate management of large areas of grassland while providing a financially feasible approach for livestock graziers in the area.

A cooperative approach to grazing would aim to contribute to the objectives of the Cotswolds NIAs in a number of ways. Firstly, the approach would seek to increase the connectivity of grasslands in the NIAs and reduce the risk of abandonment or reversion to arable production. Secondly, a cooperative grazing approach would seek to contribute to the provision of an ecological network allowing for successful climate change adaptation and thirdly, the approach would encourage cooperative activity and communication between stakeholders.

1.7. Report structure

In order to address the aims and objectives stated above it was necessary to undertake both desk based and primary research. The following section provides a review of the literature relating to the management of grassland and the biodiversity benefits that can arise from appropriate management. This is followed by an overview of the methodology adopted for this study in section 3. The findings from a series of in-depth interviews with landowners and graziers and a focus group are presented in section 4. The results are discussed in section 5, together with the proposals for the implementation of a grazing pilot project. A conclusion is provided in the final section of the report.

2. Grassland Management

"Grazing is one of the central and pivotal issues affecting grasslands, linking their maintenance, productivity, economic use and management for biodiversity" (Watkinson and Ormerod 2001).

2.1. Managing grassland for biodiversity

In its narrow sense, UNESCO defines grassland as "land covered with herbaceous plants with less than 10% tree and shrub cover" (European Commission 2008). Calcareous grasslands, such as those that span the Cotswolds, are sites of conservation importance both in the UK and Europe, supporting diverse flora and fauna and often threatened species (Rodwell 1992; WallisDeVries et al 2002). In particular, upland calcareous grasslands are important for a number of nationally rare butterfly species, including the northern Brown Argus and the Small Blue (Natural England 2005). As livestock will often graze this habitat in preference to heaths or more acid grasslands, farmers in these areas are keen to maintain high stocking rates for production, but are also continually faced with the need to protect grassland against weedy species (Watkinson and Ormerod 2001). In the EU, 'permanent' grassland is defined as: land used to grow grasses or other herbaceous forage naturally or through cultivation that is not included in the crop rotation of the holding for 5 years or longer (Commission Regulation EU No 796/2004). In contrast, a 'ley' is temporary grassland less than 5 years of age, included in a crop rotation (De Vliegher and Carlier 2007). Agriculturally 'unimproved' grassland refers to grassland that has not received artificial fertilizer and has not been subjected to intensive cutting or grazing within the last 45-50 years (Vickery et al 2001). These grasslands have long been recognised as a resource of high nature conservation value (Bignal & McCracken 1996; Crofts and Jefferson 1999).

In Britain, the management of grassland has changed substantially in the second half of the 20th century, with agricultural intensification and decline in traditional grazing management resulting in fragmentation, loss and degradation by scrub invasion across European calcareous grasslands (Willems 2001). This issue has prompted the designation of some sites as Special Areas of Conservation, Sites of Special Scientific Interest (SSSIs) and the development of Biodiversity Action Plans that target the enhancement and preservation of biodiversity rich habitats. Regular management is more important for grasslands than any other habitat type (Kirby 2001). More specifically, management of calcareous grasslands is key, with significant implications for the plant community composition and availability of key plant structures (Mortimer et al 1998). For the Cotswolds, grassland sites typically contain over 100 species of wildflowers and grasses and 25 species of butterflies. Here, the greatest threat to their survival is a lack of grazing or other suitable management (Cotswolds AONBc n.d).

2.2. Grazing

Many natural grasslands have become degraded and damaged by cultivation, intensification of reseeding, and fertilizer application associated with the pressures to increase animal production (Watkinson and Ormerod 2001). With these pressures being so marked, grasslands are now becoming more significant than ever from an ecological perspective. The extent of grazing intensities of animal production in the UK uplands can impact on vegetation, soils, birds, and mammals and strongly influence the landscape value (Milne 1996).

Livestock grazing plays a key role in maintaining species-rich habitats by controlling aggressive species that dominate these areas by preventing scrub encroachment. Scrub can be defined as 'dynamic vegetation' that is usually regarded as a seral stage between open habitats, such as grassland and some form of woodland, and typically viewed now as a symbol of landscape dereliction (Gough and Fuller 1998). Conservation management, most commonly cutting, grazing and burning is used to prevent encroachment of scrub. Scrub encroachment is often linked with under-grazing, but can also be driven by a number of extrinsic factors. Invasions of two types of species are often the cause for concern in grassland management; the invasion of grassland by woody species such as hawthorn and ash with consequent loss of the grassland system; and the invasion by alien and typically unpalatable species such as turkey oak and cotoneaster (Watkinson and Ormerod 2001). Grazing removes plant material

more gradually than cutting or burning and also supports other farming activities, like hay-making (Natural England 2005).

In addition to the level of grazing, it is recognised that the timing and animal species involved can be just as important (Humphrey and Patterson 2000). Sheep can graze very close to the ground which can result in tight 'lawn-like' vegetation and can push their way through scrub. They are selective grazers and will target flowering plants which can have a negative impact on species diversity, however, they find it harder to graze over longer vegetation (Natural England 2005). On the other hand, cattle do not graze vegetation too close to the ground and often leave tussocks of grass, used by insects and small mammals. Cattle do not graze selectively and so do not target flower heads and herbage important for biodiversity. Instead, they are able to create rough areas by trampling; an important way of controlling scrub (Natural England 2005). Like cattle, hardy breeds of horse can also control scrub by foraging on species such as rush, bracken and reeds (Natural England 2005).

Ash et al (2001) however claim that grazing alone is not enough to stop scrub encroachment, and where a moderate amount of grazing exists, scrub encroachment may be speeded up by opening the sward. In addition, some plants and animals may not be able to tolerate the intensity of grazing needed to prevent invasion. Grazing may lengthen the time between cutting by slowing re-growth, but only intense grazing over long periods of time will kill scrub (Toynton and Cox 1994). Some perennial weeds such as thistles and nettles are able to avoid being eaten due to effective defences and so can thrive in situations where grazing has reduced the ability of other plants to restrain their growth (Soil Association n.d).

2.3. Other methods for grassland management

Cutting is another effective way of maintaining grassland; however in comparison to grazing, it produces uniform sward with little structural diversity (Benefer 2006). Woodcock et al (2005) review the implications of different management practices on the structural aspects of the vegetation, stating that mowing and burning can be catastrophic in terms of loss of vegetation, while grazing will result in more selective defoliation, and influence competitive interactions between plant species (Duffey et al 1974). Variation can be introduced by varying cutting time and frequency and height of cut across the site, however it is best that heavy machinery be avoided as this causes the ground to be compacted, which limits biodiversity as the best flora in calcareous grasslands is often found on loose shallow soils (Kirby 2001). Burning was once used as a tradional grassland management method in the Cotswolds. Annual burning can prevent extensive spreading of shrubs, however studies have shown that burning is not the most appropriate method for the management of species rich grassland (see for example Moog et al. 2002). In addition to grazing, topping pastures is a strategy used to reduce annual grasses and retain desirable species within them. Application usually consists of a non-selective herbicide at a critical time to target weed seed-set, and then followed by grazing the pasture. 'Mechanical' topping refers to slashing or mowing activities late in the season to further prevent the development of viable weed seeds.

2.4. Cross Compliance regulations for grassland management

The importance of appropriate grassland management is recognised by the European Union through its scheme of agricultural payments. In order to qualify for full payment under the Single Payment Scheme (SPS) and Environmental Stewardship schemes payments, the recipient must meet all relevant Cross Compliance requirements. These requirements are split into two types: Statutory Management Requirements (SMRs); and requirements to keep land in Good Agricultural and Environmental Condition (GAECs).

With regard to grassland management, a number of rules are in place to control the spread of specified non-native weeds that can pose a risk to habitats, agricultural land and grazing animals. For example, GAEC11.A1 states: "You must take all reasonable steps to prevent the spread of specified invasive non-native weeds and injurious weeds on your land and onto adjoining land." Under GAEC11.B1, "You must not unreasonably fail to comply with a notice served on you" (Defra 2012:30).

To avoid encroachment of unwanted vegetation, land that is not in production must be kept in good agricultural and environmental condition. Under GAEC12.A1, "You must cut scrub and cut or graze rank vegetation on the whole area of your agricultural land that you do not use for agricultural production at least once every 5 years, in order to prevent encroachment of scrub." Equally, under GAEC12.B1, "You must not cut down or plough vegetation on the land between 1 March and 31 July (inclusive);" B2, "You must not in any 12 month period, cut or graze scrub or rank vegetation on more than 50% of the agricultural land not in agricultural production.' Rules B1 and B2 however do not apply if the landowner needs to cut grass to meet the GAEC rules on the control of weeds (GAEC 11) or if they are actively bringing the land back into production (Defra 2012:31). GAEC12.B3 states, "You must not apply inorganic fertiliser to the land, unless the land is known to be used as, and is managed as, a geese feeding area in the winter;" and B4, "You must not apply manure or slurry to the land, unless the land is known to be used as, and is managed as, a geese feeding area in the winter." The rules of this standard (GAEC 12), however do not apply if the land is a Site of Special Scientific Interest (SSSI) and the landowners obligation under their SSSI designation conflict with the rules of this GAEC (Defra 2012:31).

2.5. Ecosystem Service, Climate Change Adaptation and Habitat Connectivity

The permanent pasture in the Cotswolds has the potential to deliver multifunctional objectives because its sustainable management can yield substantial benefits in terms of biodiversity conservation, but also for other ecosystem services, including carbon storage, soil nutrient retention, with has knock on effects to water quality, and pollination (see Table 1). According to Bullock et al (2011), in contrast to improved grassland and arable and horticultural land, semi-natural grassland in general: a) stores greater densities of carbon and produces less nitrous oxide (Janssens *et al* 2005); b) has lower stocking densities, resulting in lower methane production (Leibig *et al.* 2010) and c) allows greater water infiltration rates and enhanced storage, preventing flooding and resulting in less atmospheric (e.g. ammonia and ozone) and water (e.g. nitrogen, phosphorus) pollution (Weatherhead & Howden 2009). Nutrient cycling also seems to be more efficient in unimproved grasslands (Lovell *et al.* 1995). Conserved and restored semi-natural grasslands also have the potential to provide cultural services related to recreation and tourism (Barkmann and Zschiegner, 2010), especially if rare livestock breeds are used and possibly provides pollinator and pest control services for surrounding intensive farmland (Ricketts et al, 2008).

Table 1: Ecosystems Services delivered by semi-natural grassland. Adapted from (Bullock et al, 2011)

Service Group	Final ecosystem service	Goods and benefit
Provisioning	Livestock: forage for cattle, sheep, etc	Food (meat, milk), fibre (wool), possibly enhanced quality of meat and milk
	Standing vegetation: biomass crops	Possibly fuel
	Crops: pollination and pest control spillover	Food (crops)
	Water quantity: storage of water and recharging of aquifers	Potable water, water for food production, flood protection
	Wild species diversity: plant genetic diversity, seed for restoration projects	Genetic resources, bioprospecting, recreation and tourism, ecological knowledge
Cultural	Environmental settings: valued species and habitats, agricultural heritage, archaeological heritage, grazing for rare livestock breeds, ecological knowledge, training areas	Physical and psychological health, social cohesion, recreation and tourism, UK research base, UK military training
Regulating	Climate regulation: sequestration and storage of carbon and other greenhouse gases	Avoidance of climate stress
	Purification: reduced pollution and storage of pollutants	Clean air, clean water, clean soils

There are concerns that the fragmented nature of the Cotswold's ecological networks means that they are currently not in an optimum condition to enable the wildlife of the area to adapt to climate change and maintain ecosystem services. Rather than conserving isolated pockets of grassland, there is a need for grassland conservation and restoration to occur across a larger area, thereby achieving a number of environmental objectives that will help grassland habitats and species to adapt to climate change. Firstly, landscape-scale restoration will enhance the threshold effects of grasslands. The marginal benefits from conservation are typically small until some threshold level of action has been reached. Where species range widely throughout the landscape, perhaps utilising different features during the course of their life cycles and in different seasons, management to achieve a viable population requires more than a site based approach. Small and isolated pockets of individual species may become locally extinct during unfavourable conditions and fail to be recognised because there are no populations within dispersal range (Bullock *et al.* 2002). Studies have shown these processes to be important for semi-natural grassland species such as the marsh fritillary butterfly (*Euphydryas aurinia*) (Bulman et al. 2007) and devil's bit scabious (*Succisa pratensis*). The threshold requires a proportion of farmers and land managers within an identified area to implement certain measures.

Secondly, landscape-scale conservation will increase the connectivity of grassland habitats. Many protected sites are now well managed but are fragmented, isolated havens in a wider landscape that is of variable quality. Spatial isolation has impacts for genetic diversity and population viability. By establishing linkages and 'stepping stones' between these sites in the wider landscape, species will be able to re-colonise old territories and protected sites will flourish. It will also allow sub-population interaction, permit species re-establishment following local loss or extinction, promote genetic diversity and allow greater adaptability. Linking together areas to make ecological corridors and a connected network have real benefits in allowing nature to thrive. It is as much the sum of the parts that matters as the whole (Hilty et al., 2006). Even the smallest area of land can contribute towards a landscape-scale approach provided they are connected or acting as a stepping stone that enable species to move across a wider landscape. In practice, connectivity will require adjacent farms to provide similar linked management as corridors or stepping stones.

Finally, landscape-scale conservation will enhance the buffering effect (edge effects). The small size of many semi-natural grassland sites means that edge effects are significant, gradually eroding the biodiversity value of many key sites. Small patches of grassland, for example, may be degraded by nutrient pollution from fertilisers and spray drift from adjacent arable land (Lawton et al, 2010). Also, Ries et al. (2004) found that where habitats abut, such as woodland with a cereal field, they often create markedly different microclimates and other characteristics from the habitat centre. Buffering and larger sites reduce these edge effects. The Lawton team, for example suggested that buffering of woodlands, wetlands and where there is a threat from ammonia should be at least 30m. To reduce edge effects active co-ordination of buffering by all, or the majority of farmers bordering a specific site, is required.

On the Cotswolds a number of delivery approaches could be used to provide these threshold, connectivity and buffering effects, for example through a grazing scheme aimed at identifying currently fragmented areas of undermanaged grassland and bringing them under appropriate management through grazing or through coordinated agri-environment schemes. Mills et al (2012) reviewed a number of delivery mechanisms or co-ordination approaches that have been adopted or proposed to deal with the issue of ensuring appropriate spatial arrangements of environmental measures across farm boundaries. These include approaches that would require co-operative submission of an AES application, and also includes those which reward connectivity, but do not rely directly on co-operative agreements.

A key aim of this study is to explore the ability of a new grazing approach to address issues relating the provision of ecosystem services, climate change adaptation and habitat connectivity. The methodology adopted for the study is outlined in the following section.

3. Methodology

In order to assess the feasibility of a new approach to grazing in the Cotswolds NIA, primary research was undertaken. In collaboration with the Cotswolds Conservation Board, two study areas were identified. The areas were contiguous but had varying characteristics. The first area was located on the Cotswold Scarp running between Broadway and Snowshill, and the second was an area classified as High Wold and High Wold Valley area running north from Condicote. The selection of the study areas is discussed further in the following sub-section. In order to address the aims and objectives set out by this study (see section 1.1), data were gathered through 28 in-depth interviews with landowners and graziers in the two study areas. The findings of the interviews were explored further at a focus group attended by various stakeholders. Both the interviews and focus group are described in more detail later in this section.

3.1. Selection of study areas

The two case study areas that were selected were done so on the basis that they represent varying characteristics relevant to the wider Cotswolds AONB and could provide comparable data with regard to issues relating to grazing in different landscape areas. It was necessary to identify one study area within the Cotswolds Scarp NIA and a second in the Cotswolds Valley NIA. In order to select smaller case study areas within these larger areas, a number of issues were considered, such as areas particularly at risk from a reduction in current levels of grassland due to the termination of Environmentally Sensitive Area schemes. The presence of areas of grassland of high conservation value, such as SSSIs that are currently fragmented, was also considered. The first case study area, hereafter referred to as the Scarp, encompasses a proportion of the Escarpment landscape character area and covers the area of farmland between Broadway in the north and Stanway in the south. The second case study area encompasses parts of the High Wold and High Wold Valleys character area, north of Condicote. This area will be referred to as the High Wold throughout the report. Detailed maps of the two case study areas are provided in

Appendix 3. The character of the two areas is detailed below.

3.1.1. Case Study Area 1: Scarp

The Cotswolds Conservation Board's Landscape Strategy (n.d.) details the following key features of the Escarpment Landscape Character:

- Steep exposed and elevated west facing escarpment slope, partly cloaked in semi-natural broadleaved woodland
- Generally poor soils and steep sloping relief of the escarpment not suited to arable farming, and primarily used for pasture or woodland.
- Calcareous grasslands located on steeper escarpment slopes

Additionally, the Landscape Strategy (n.d.) notes a decline in grazing stock on the upper escarpment slopes and the abandonment of some grassland. This has the potential to lead to scrub encroachment and the loss of species rich grassland due to the invasion of dominant grass species.

3.1.2. Case Study Area 2: High Wold

The Cotswolds Conservation Board's Landscape Strategy describes the High Wold Valleys landscape character area as a 'broad, elevated, gently undulating plateau'. The area is dominated by arable farming with some improved pasture/grass leys with very limited permanent pasture. The High Wold Valleys area is described as 'predominantly dry or ephemeral flow headwater valleys with generally broad valley form and shallow slope profiles'. The High Wold Valleys contain areas of open pastoral farmland together with pockets of arable land. Pasture in the High Wold Valleys generally comprises improved grassland with small areas of unimproved and calcareous grassland.

The size of the areas were selected on the basis that they are large enough to access 28 landowners and graziers on contiguous land, but small enough to allow for an in-depth study of the nature of grazing in the area. Once the case study areas were selected it was necessary to gain an in depth understanding of grassland management, and grazing in particular, in the two areas. This was done through area visits followed by in-depth interviews with landowners and graziers in the study areas. The interviews are discussed in more detail in the following section.

3.2. Telephone interviews

The aim of the interviews was threefold. Firstly, the interviews aimed to gain an understanding of the current character of grassland in the two areas and identify the main management strategies that are used. Secondly, the interviews aimed to explore the prominence of grazing in the two areas and the types of arrangements that are present between landowners and graziers. Finally, the interviews aimed to explore the potential for implementing a new approach to grazing in the Cotswolds NIAs. This included addressing the potential for cooperative grazing. The barriers and opportunities associated with a new approach were a key area of focus alongside the financial feasibility.

Twenty eight farmer interviews were undertaken. Table 2 provides a summary of the interviews. As the table shows, farm sizes in the High Wold area were much larger than in the Scarp. A higher number of interviews were therefore undertaken with landowners and graziers in the Scarp in order to cover a similar sized area.

Table 2: Summary of interviewees

Area	Number of interviews	Number of landowners interviewed	Number of graziers interviewed	Average farm size
Scarp	17	12	4	94 ha
High Wold	11	8	3	387 ha

Potential interviewees were initially contacted by letter detailing the project and requesting a telephone interview. Telephone contact was then made to arrange a convenient time for the interview.

3.2.1. Sample selection

As the potential for the implementation of a cooperative grazing scheme was the focus of this study, it was important that farmers and landowners on contiguous holdings were interviewed. This was achieved by mapping the boundaries of the farm of each participant and using a snowballing sampling method whereby interviewees were asked to provide the contact details of neighbouring farmers and local graziers. This approach generally worked well although some interviewees were uneasy about providing contact details without the consent of the landowner or grazier. In order to overcome this limitation, four face to face interviews were carried out with landowners and graziers who were strategically located in the study areas. It was felt that face to face interviews would help to build trust and rapport between the interviewer and interviewee. This worked successfully and helped to provide the majority of the contacts for each of the study areas.

3.2.2. The interview schedule

The interview schedule was developed in line with the aim and objectives of the project. It was important that the interview was short enough to be undertaken over the telephone without significantly inconveniencing the participants, but provided enough detail to address a number of important issues. It was felt that a 30 minute interview would be appropriate.

The interview schedule was divided into the following five sections:

- Farm structural characteristics
- Grazing management characteristics
- Views on cooperative grazing
- Agri-environment schemes and Single Farm Payment
- Mechanisms required for a new grazing scheme.

A copy of the interview schedule is provided in Appendix 4. The interview schedule was piloted on a farmer known to the research team to check that the questions were clear and would provide the required information. The length of the interview was also checked to ensure that it could be completed within thirty minutes. No problems were encountered during the pilot so no changes were made to the schedule.

3.3. Focus group

A focus group was undertaken to further explore the findings of the telephone interviews. A number of key issues requiring further discussion were identified. The following sub-sections provide details on the selection of the focus group participants and the development of the focus group discussion schedule.

3.3.1. Focus group participants

Focus group participants were made up of landowners and graziers who had taken part in the interviews and were considered to be of particular relevance to the study. Seven participants attended the focus group. There was a good diversity of participants including large landowners, smallholders, graziers and tenant farmers. In addition, a local NFU representative and an independent farm advisor (also a representative of Cleeve Commoners Association) were also present.

3.3.2. Focus group discussion schedule

Based on the findings of the telephone interviews, a focus group discussion schedule was devised for the focus group to encourage further discussion of the main issues that had been identified. The schedule was divided into the following sections:

- Current state of grassland in the area
- Conservation benefits of grazing
- Availability of grazing land
- Grazing agreements
- Single Farm Payment and Cross-Compliance
- ESA, arable reversion and the impact of CAP proposals
- Feedback on proposals

A copy of the focus group discussion schedule is provided in Appendix 5.

In addition to the focus group discussion, participants were also asked to annotate large maps of the areas to identify areas of under-utilised grassland, areas likely to be ploughed up in the next two years and areas of scrub encroachment; these are shown in Appendices 6 and 7.

3.4. Data analysis

With the participants' permission the telephone interviews and focus group were recorded and transcribed. The interviews provided both quantitative and qualitative data. The quantitative data were entered into a spread sheet to provide a summary of the case study areas whereas the qualitative data were coded by hand to identify key themes relating to the study aim and objectives. The focus group was transcribed verbatim and thoroughly coded by hand to identify key themes.

The findings of the telephone interviews and focus group are discussed in the following section.

4. Findings

The telephone interviews and focus group provided a large data set which was carefully analysed to identify key issues associated with the aims and objectives of the research. The main focus of this study was to establish whether a business case could be made for the implementation of a cooperative grazing approach in the Cotswolds NIAs. As such, the barriers and opportunities associated with grazing in the case study areas were key areas of discussion. The following sections report the findings. Firstly, an overview of the case study areas is provided in which a number of differences are noted. This is followed by a discussion of the barriers and opportunities associated with grazing. Some conclusions are then drawn in relation to whether a business case can be made for the implementation of a cooperative grazing approach. This suggests that cooperative grazing is not the most appropriate approach for increasing grazing in the area due to a lack of buy-in from landowners and graziers. Alternative proposals are therefore put forward together with a discussion of the mechanisms that would be required to ensure their success.

4.1. Overview of case study areas

As expected, some key differences were found between the study areas. Most significantly, landowners in the High Wold area own far larger pieces of land, whereas there are far more smallholdings in the Scarp, some of which are owned by hobby farmers or livery businesses. As such, much of the land on the High Wold is farmed in hand or let on a long term Farm Business Tenancy or Agricultural Holdings Act Tenancy. Short term grazing agreements are therefore less frequent. In comparison, while there are also some large farms in the Scarp area, there are a higher number of small parcels of land owned by individuals who do not have their own livestock. Short term grazing agreements are therefore more common.

Due to the typology of the area, arable farming is more common in the High Wold, particularly on ground that is characterised as High Wold (see Appendix 3) as opposed to the Wold Valleys which are steeper and therefore more likely to be grazed. The majority of the Scarp area is grassland, some of which is on particularly steep ground. In terms of livestock, sheep farming is more prevalent in the Scarp, while both cattle and sheep are often grazed in the High Wold. Other livestock are also grazed in both areas including horses (mainly associated with livery businesses) and deer. The cattle are generally bred for beef although there is at least one dairy farm in the High Wold area.

The majority of land in both areas is managed under an agri-environment scheme. There are a small number of Entry and Higher Level Stewardship agreements, while Environmentally Sensitive Area (ESA) agreements are most prevalent. The ESA scheme is coming to an end in 2014 so some of the agreements have recently ended while others will end over the next 18 months. Arable reversion formed an important aspect of the scheme. Now that it is ending, agreement holders with land in arable reversion have the option to plough up the grassland and revert to arable production when the scheme ends. Five of the landowners that were interviewed said that they are planning to plough up land and further areas were identified at the focus group. Although this is a risk facing both areas, it is a particular problem in the High Wold area.

4.2. The state of grassland and current management strategies

The High Wold and Scarp areas are made up of a mosaic of pasture, woodland and arable land. Based on the interviews, the majority of grassland in both areas is permanent although semi-permanent grassland is also present in both areas. Grass leys are more prevalent in the High Wold area as they are included in the arable rotation. A summary of the grassland types is provided in Table 3, however it is important to note that these figures are based on the interviewees' perceptions.

Table 3 Summary of grassland types in the case study areas

Case study area	Permanent grassland (%)	Semi-permanent grassland (%)	Grass leys (%)
Scarp	75.8%	21.6%	2.6%
High Wold	71.4%	19.8%	8.8%

Interview participants were asked about the management of their grassland. As shown in Table 4, the majority of the grassland is unimproved but managed and participants only classified a very small proportion of the land as unmanaged. While some of the grassland is mowed or topped on an annual or biannual basis, participants suggested that almost all of grassland in the area is grazed regularly.

Table 4: Grassland management in the case study areas

Case study area	Improved grassland (%)	Unimproved but managed (%)	Unmanaged (%)
Scarp	43.1%	56.9%	0%
High Wold	17.5%	81.9%	0.6%

While the findings from the telephone interviews suggest that very little grassland in the two case study areas is unmanaged, desk based research and area visits identified a number of areas in both the High Wold and Scarp study areas which are undergrazed or unmanaged. These tend to be small parcels of land, rather than large fields. Such land tends to be on steeper areas which would be difficult to access with machinery, so mowing or topping would not be possible. In these areas, scrub encroachment is a problem and the quality of the grassland is low. This is also an issue in some field corners and around small disused quarries which are characteristic of the area. While this problem occurs in both case study areas, it is more prominent in the Scarp, mainly due to the typography of the area, but perhaps also due to the nature of landownership, as discussed in the previous section.

While interviewees and focus group participants identified some isolated problem areas, few felt that there was a significant grazing problem in either of the case study areas. This is likely to be due to a number of reasons. Firstly, landowners may be unwilling to identify areas of poor grassland management on their own farms in case they are considered to be undertaking poor land husbandry or in breach of Cross-Compliance regulations. Secondly, while some focus group participants noted the presence of some areas of poor management, they were unwilling to identify exact areas of land on other people's farms. It is worth noting at this point that landowners are likely to define 'poor quality' grassland in relation to the nutritional value and suitability for their stock rather than focusing on biodiversity or landscape value. Thirdly, and most significantly, such areas appear to be on the margins of landowners' and graziers' consideration. If they have not been grazed in the recent past or have become particularly overgrown and therefore difficult to graze, they are not included in what most landowners or graziers consider to be their 'stock' of grassland. Out of the 2661 hectares of grassland that was covered by the interviews, only 10 hectares of unmanaged grassland was identified on one farm by interviewees.

4.2.1. Grazing agreements

The majority of grassland in the High Wold and Scarp areas is grazed. This is done either by the landowner or by graziers under a range of agreements. A wide range of agreements were encountered ranging from completely informal to highly detailed contractual arrangements. Where graziers occupy the land for longer periods of time and make financial investments, such as fencing, or stabling if grazing

horses, more formal agreements were considered to be important. For shorter term grazing, and particularly for grazing on areas which graziers consider to be of poor quality without charge, an informal agreement was considered more appropriate. Where informal agreements are made, trust is seen as essential. Both landowners and graziers emphasised the need to know the other party or to have been provided with positive references. This is demonstrated by the following quote from a grazier who grazes sheep in the Scarp case study area:

> *"Informality suits me to be honest, but the trouble is you can't really trust anymore really– people do go back on their word."*

In the majority of cases grazing is currently undertaken by neighbouring farmers who are known to the landowner. Longer term agreements were often seen as more sought after in order to ensure long term availability of land to graziers as well as a guaranteed income for the landowner. However, some landowners favoured shorter agreements to allow them to be flexible. The range of opinions encountered are summarised by the following quotes:

> *"Preferably we would go for a long term agreement, just so if I knew I was going to have some ground for at least 3 years, I know I could go and buy extra stock. If it was just 12 months, I couldn't really go and buy anymore, it would just fill a gap."* (Grazier – Scarp)

> *"I would prefer a handshake/gentleman's agreement – that should be good enough but that wouldn't stand up in a lawyer's office. That's how I've always worked, half the things aren't worth the paper they're written on. I would want something mid-term – short term is no good for anybody, and long term could lead to all sorts of problems."* (Landowner – Scarp)

Although the majority of interviewees recognised the benefits of formal agreements, many do not have them. This is mainly due to the perceived cost and hassle associated with drawing up an agreement:

> *"A standard agreement should be drawn up annually between the landowner and grazier so everyone knows what everyone is doing but I have been pretty slack about doing it each year though."* (Landowner – Scarp)

While informal agreements were common, the majority of interviewees felt that suitable legal arrangements are either very or quite important. In the High Wold area all but one interviewee felt that they are very important. In the Scarp area one interviewee felt that legal arrangements are not very important, while the remaining were equally divided between feeling that they are quite important and very important. Within the sample, graziers were more likely to consider legal arrangements to be quite important, whereas landowners were more likely to consider them to be very important. Most interviewees also felt that it was important to have responsibilities clearly set out at the beginning of an agreement, such as stock proofing and checking on stock. Only two interviewees felt that this was not important. Both of these were landowners, however, in general landowners appear to have more significant concerns than graziers relating to responsibilities. In particular, some landowners raised concerns about grazing stock causing damage or escaping onto neighbouring land. As such, landowners made clear that responsibility for the stock should always lie with the graziers who should be based locally enough to check on the stock daily. However, this was discussed further at the focus group, where graziers noted that checking on stock daily would often not be possible. At the focus group, the independent farm advisor who was involved in the discussion noted the following:

> *"I've certainly dealt with a few landowners who have stopped renting their land out because they've had issues with graziers not checking their stock regularly enough and not getting there quickly enough if there was an issue with stock coming out and things like that."* (Independent farm advisor)

Interviewees were also asked about the importance of suitable financial arrangements for grazing. Only two interviewees felt that this is not important, while the remaining felt that it is either quite or very important. This was discussed in more detail with the telephone interviewees and at the focus group. It was clear that graziers consider the quality of grassland to be the most important factor and are therefore willing to pay more for such land. Even if land was free or very low in price, some graziers would

not be willing to graze it as it would not provide enough nutritional value to their stock. However, it is worth noting that the selection of breeds that are more suited to grazing on the Cotswolds could provide more financially viable grazing opportunities in these areas.

The High Wold area is made up of a small number of large estates. This land is generally let under long term agreements to tenant farmers who often graze their own livestock on the land. However, some parcels of grassland are let on formal agreements to graziers, particularly on the valley slopes. In the Scarp area there is a higher number of informal shorter term grazing agreements, either with neighbouring farms or graziers to graze the land.

It appears that in areas where large land owners let land to tenant farmers or long term graziers, grazing is not problematic. These landowners and graziers tend to be members of the local farming network within which word of mouth ensures successful identification of graziers as soon as land becomes available. However, in comparison, the Scarp area is made up of a higher number of small land holdings, often owned by hobby farmers who may be less likely to be members of the same networks as other landowners or graziers. Owners of smaller parcels of land are also less likely to own their own livestock and must therefore find a grazier to graze the land. This is demonstrated by the following quote from a smallholder in the Scarp who found renting his land difficult:

> *"I wasn't sure where to advertise. In the end I put it on Preloved.com [an online database for buying and selling similar to eBay]. The only people who were interested were people with horses who just wanted a few acres of land. We ended up renting it on a long-term agreement to a lady with a livery business. It was a long process."*(Landowner – Scarp)

Graziers' main concern was for stock proofing. Few graziers were prepared to make significant financial investments in fencing, but were prepared to undertake minor repairs while they occupy the land. This is discussed in more detail in section 4.4.1.

4.2.2. Risks to grassland in the case study areas

The interviews and focus group identified the ending of the ESA scheme as a key risk to grassland in both case study areas. Some of the agreements in the areas have recently ended and those remaining will come to end before the end of 2014. All landowners involved in the study whose grassland is currently under arable reversion are planning to plough it up to make way for arable production.

Another risk posed to grassland in the case study areas is the proposal for the maintenance of permanent pasture under the 'Greening' measures of the Common Agricultural Policy reform[2]. Study participants consider there to be a short window of opportunity to plough up land before the proposals come in. These proposals are encouraging landowners and farmers to plough up land which may have otherwise been left as grassland at least in the near future. This is often being done in agreement with Natural England where farmers are entering into HLS after the termination of their ESA agreements. This was noted by some study participants who felt that they were being given mixed messages in relation to the importance of grassland:

> *"You have to have joined up thinking between Natural England and the Cotswolds Conservation Board. Most of the grassland that's in arable reversion in the Cotswolds has gone in under landscape value. Now there is no landscape value – so all that joined up thinking…you've got one person saying one thing and another saying something else."* (Landowner – High Wold)

The move towards ploughing up land is summarised by one interviewee as follows:

> *"If it can be ploughed, it is going to be ploughed from now on isn't it? It's as simple as that."* (Landowner – High Wold)

The poor quality and limited conservation value of grassland currently in arable reversion was also noted by study participants. They suggested that the grass varieties that they were required to plant under the

[2] The proposals will prevent the ploughing up of permanent pasture. Levels of permanent pasture will be required to be maintained at the 2014 level, although there will be a 5% flexibility on these levels.

scheme do not provide good quality grazing. This may be a contributing factor to the move to plough up these areas as they are considered to provide limited grazing value. This view is demonstrated by the following focus group discussion:

> Interviewer: "*Is there enough grazing land around?*"
>
> Grazier – High Wold: "*There seems to be, yeah. It's always the lesser land that's around though isn't it? Mainly the best land has been ploughed already.*"
>
> Interviewer: "*So is that something that people are finding a problem in looking for extra grazing land…the quality of that grazing land, is that a problem?*"
>
> Grazier – High Wold: "*Certainly the quality would be a problem, because in a lot of occasions, the grasses were planted years gone by for different schemes and was of a lesser quality grass.*"
>
> Land Owner – High Wold: *"The grass planted in the ESA was unproductive, unpalatable – it's basically string."*

The main impetus for reversion to arable production is the high prices currently being gained for arable crops coupled with the limited profitability of livestock. The recent horse meat scandal was discussed at the focus group to establish whether the recent increase in beef prices caused by the scandal would encourage the expansion of cattle numbers in the area. In general, participants did not feel that this issue would have any long-term significant positive impact on livestock profitability in the area. This is therefore not considered to be a substantial issue in relation to reducing the current loss of grassland to arable production, which is likely to be an on-going trend in both areas. This will generally be controlled through the Common Agricultural Policy regulations but areas of semi-permanent pasture or grass leys are likely to be lost. Participants suggested that this loss could only be prevented by providing financial incentives to landowners to prevent them from ploughing grassland. This will be particularly important for those coming out of ESA agreements. In general, study participants whose ESA agreements are coming to an end, as well as those who are currently not in any agri-environment scheme, have limited knowledge of the options available to them. This provides an opportunity for knowledge transfer, and within the context of this project, an opportunity to emphasise the importance of grassland management.

4.3. Barriers and opportunities

As discussed in the previous section, there are a number of issues relating to grassland and its management in the case study areas which have the potential to be addressed through a new grazing scheme. In summary, these are:

- Increase the stock of grassland to meet the demand from graziers by increasing opportunities for grazing on underutilised or unmanaged areas of pasture;
- Address problems associated with scrub encroachment in some areas through more appropriate management; and
- Encourage landowners and farmers to retain grassland that is currently in arable reversion.

There are a number of options available in terms of addressing these issues. However, it is first necessary to discuss the barriers and opportunities currently present in relation to increasing grazing in the two case study areas. This is done in the following sections:

4.4. Barriers

The telephone interviews and focus group identified a number of current barriers to grazing as well as potential barriers to the implementation of a new approach; these are discussed in the following sub-sections.

4.4.1. Stock proofing

While participants did not consider there to be a significant problem in relation to the under or non-management of grassland in either area, they did identify some areas that were underutilised. These tended to be mowed or topped to prevent scrub encroachment but were not grazed due to a lack of stock proofing. Either fencing or walling was not present in these areas or they had fallen into disrepair. Both landowners and graziers identified poor stock proofing as the key barrier to grazing in some areas. Landowners who do not have their own stock are reluctant to invest in permanent stock proofing on their land due to the low return on investment, while graziers note the ineffectiveness of temporary fencing, particularly for sheep. Some landowners have obtained grants for stock proofing through agri-environment schemes (ESA and HLS) and emphasised the benefits of this. Landowners whose ESA agreements are coming to an end noted the increased likelihood of stock proofing falling into disrepair if further grants do not become available.

At the focus group the issue of stock proofing was discussed in detail. Graziers suggested that the presence of adequate fencing is their main priority when sourcing grazing land. Graziers were asked whether they would be willing to provide fencing (temporary or otherwise) if the grazing land was provided for free. Graziers were reluctant to make any such investments (approximately £4-5/m) or contributions towards stock proofing and were only willing to provide fencing if the landowners covered the full cost of doing so. This was mainly due to the often short term and informal nature of grazing agreements which mean that such investment would not be financially viable. Focus group participants were asked how long an agreement would need to be to warrant investing in stock proofing and one grazier suggested that it would need to be at least ten years. The importance of permanent fencing is emphasised by the following quotes from graziers who participated in the focus group:

> *"These rougher areas, yes you could possibly electric fence it – but if the grass is unpalatable and is not particularly appetizing to cattle or sheep – and if it is electric fenced, stock would be more inclined to break out – so this is why a site like that has to be permanently fenced or else it isn't even a consideration."* (Grazier – Scarp)

> *"The fencing has got to come down to the owner unless they're going to let it to you for 40 years. Then landowners have got to do it, or it doesn't get done, and we don't graze it."* (Grazier – High Wold)

While graziers require suitable stock proofing, landowners also noted the difficulties associated with providing it. This was mainly associated with the cost as demonstrated by the following quote:

> *"It's just the practical considerations, and the enormous cost of getting the fences right – we've not managed that. Hopefully within the next few days, our application will be going in for a Higher Level stewardship, where we should get a contribution towards the fencing of some fields, but only those fields that have been managed specifically for particular features, like wild flowers and so on…but that will help."* (Landowner – Scarp)

Although graziers are unwilling to provide stock proofing, they often take on responsibility for the maintenance of the fencing while they graze the land. This was an area of debate between participants with some landowners wanting to maintain responsibility so that they could ensure that stock would not escape and cause damage to neighbouring land for which they may be liable. Stock proofing is a barrier to grazing that has been encountered elsewhere. For example, a report on restocking the Weald AONB found that the infrastructure for livestock production can disappear quickly if land is un-grazed. Fences and walls fall quickly into disrepair, as does the quality of grassland and soil (Vorley 2012).

4.4.2. Availability of grazing land

Currently all graziers who participated in the study are keen to access additional grazing land. The limited availability of grassland is a key barrier for graziers in expanding their livestock numbers. Although this indicates an important opportunity for increasing current levels of grazing in both areas, it also emphasises the presence of barriers which may currently prevent the expansion of grazing. While it was

suggested that there was limited availability of large areas of quality grazing, it was noted that there are smaller areas of underutilised grassland. In such instances, these areas are generally considered to be lower quality grassland, which do not provide high nutritional value to livestock. Moving stock to and from small areas of grassland was also considered to be problematic and resource intensive, as was checking on the stock which could be a significant distance from other grazing land. For these areas, grazing by the adjoining farmer or grazier through a collaborative agreement was considered to be the only option. This is already being undertaken in some instances, generally under an informal agreement. This often involves the neighbouring livestock owner grazing the land free of charge at certain times of year. Again, it is important to note that graziers are only willing to graze such areas if they are fully stock proof as the grassland is considered to be of low quality which would not usually be sought by graziers. Graziers noted that in some instances they would seek payment for grazing particularly poor quality areas of grassland. However, landowners were generally unwilling to pay a grazier to graze the land, even within the context of meeting Cross-Compliance regulations and/or grazing requirements associated with agri-environment schemes. Additionally, it was noted that in some cases landowners do not want to have their land grazed due to its potential interference with other activities on the land as demonstrated by the following quote:

> *"But some landowners don't want stock on their land – they'd rather top it so it doesn't interfere with the hunt or the shoot or whatever… they know that they're not going to get inspected…if they thought they were going to get financially penalised, stock would arrive quite quickly probably."* (Grazier –Scarp)

4.4.3. Disease risk

Disease risk was noted as a barrier to grazing by some study participants. Bovine tuberculosis (bTB) was the main concern, particularly among farmers with their own livestock. Participants explained that in some cases disease risk would prevent them from letting out areas of their farm that were under-grazed as they did not want livestock that could be infected coming onto their farm with the potential of spreading disease to their own livestock as demonstrated by the following quote:

> *"Either by good luck or good judgement, we've managed to avoid ever having a case of TB in our cattle, and we've got 12 major badger setts on 400 acres, and several minor ones as well – so we've got twice as many badgers than we have cattle. I am concerned, while I recognise badgers are definitely part of the problem, I also think the fact that we've had a closed herd for over 30 years, has probably helped stop bringing disease onto the farm."* (Landowner – Scarp)

The following focus group discussion emphasises these concerns and notes the increased problems associated with the new regulations that came in at the beginning of 2013:

> Interviewer*: "Some of the farmers we spoke to over the phone mentioned other issues, such as disease, tuberculosis especially, has that caused anyone any problems in relation to grazing?"*
>
> High Wold Landowner*: "It has for my grazier who comes, who's got a lot of cattle. He has permanent worry that when they're over here, they're going to pick up TB and then they're stuck here. So when they have tests, the whole lot have to go back to him, and then at least he's got them back at home. Well that's a pain in the butt to say the least, but you know, there are a lot of badgers around here.*
>
> High Wold Grazier*: Yes, but with the new rules now, we won't be able to do that will we…once the 60 days are up we've got to test, wherever the cattle are, you see. So they've stopped that idea now – it's not going to make that very viable is it?*
>
> Interviewer: *So is that going to make things more difficult?*
>
> High Wold Grazier*: Oh, much more difficult…yes.*

While bovine tuberculosis was the main concern, Johnes disease was also noted.

4.4.4. Cross-Compliance

As discussed in section 2.5, grazing is a requirement of Cross-Compliance (GAEC 11 and 12). All but one of the participants who were eligible to claim Single Farm Payment do so. None of the interviewees reported any problems meeting the requirements for grassland management under the regulations. However, the presence of areas of unmanaged grassland with scrub encroachment suggests that some of the landowners are in breach of the regulations. Some of the graziers that were interviewed suggested that some landowners, particularly those who do not actively farm their land are unaware of the requirements. This was discussed in more detail at the focus group. There was a split in opinion with regards to this, with the majority of participants feeling that most landowners are fully aware of, and compliant with the requirements, as demonstrated by the following quote from a smallholder with land in the Scarp study area:

> *"I think if you've gone into an agreement lately with Natural England, they spell it out quite clearly – it's a lot more strictly looked at than the ESA. So I think you'd have to be pretty stupid not to realise what you've got to do."* (Landowner – Scarp)

While most participants felt that landowners are aware of their responsibilities, one participant explained the difficulties in meeting some of the requirements:

> *"Some of the rules are counter-productive. For instance, gorse on very steep banks, you can't get machinery at it you can't do it…you try and use a chainsaw, you fall down the bank. Fire is very effective, but you aren't allowed to burn it…The rules of what you can't do override what you have to do…it's impossible."*(Landowner – High Wold)

However, the independent farm advisor who attended the focus group explained that she often comes across landowners who are not aware of the requirements, but claim Single Farm Payment nonetheless:

> *"I think it is an area that people need more information about. I know one landowner that takes the SFP but all the land is rented out…when I looked at it the land would have failed a Cross-Compliance inspection on the amount of ragwort. They weren't aware that the problem would have been down to them to sort out because they just viewed the farm as 'well that's just their department'."* (Independent farm advisor)

While potential non-compliance with the regulations was noted by some interviewees, other issues associated with Single Farm Payment were also noted. This included the need for landowners to keep control of the land in order to claim the payment by demonstrating 'active management' of the land. In such instances landowners will be reluctant to let the land on a long-term permanent basis as they will lose the Single Farm Payment to the grazier. Some landowners have overcome this by entering into Profit of Pasturage agreements within which the land can be grazed but the landowner retains their Single Farm Payment entitlement.

4.4.5. Engagement

One of the key barriers to the implementation of any new grazing scheme is the engagement of landowners and graziers. As already noted, study participants do not consider there to be a significant problem associated with the under-management of grassland. However, it is clear that there are some pockets of more marginal land that do have the potential to be grazed. Additionally, many of the landowners, particularly in the Scarp area are non-farmers. Although there are no figures for the Cotswolds AONB, national figures report that 37% of all those buying agricultural land in the past decade have been non-farmers (Lobley 2012).This represents a significant challenge in relation to engagement as such landowners are likely to be outside of traditional farming networks and may not have a particular interest in grazing land or making investments in stock proofing etc.

4.5. Opportunities

In addition to the barriers discussed in the previous section, a number of opportunities for increasing grazing through the implementation of a new approach were also identified. These are discussed in the following sub-sections.

4.5.1. Benefits of grazing

The majority of study participants recognise the benefits of grazing in relation to managing grassland effectively and preventing the encroachment of scrub or invasive species. No major problems were encountered in relation to either formal or informal grazing agreements and all landowners who currently let their land for grazing recognise the benefits of doing so and will continue. Grazing was considered to be particularly important on steep land which cannot be accessed by machinery:

> *"If you've got steep valley like I have that you can't do anything with at all – then it needs to be grazed…because there's no way you're going to get anything down there."* (Landowner – Scarp)

The conservation benefits of grassland and grazing were also discussed with participants. While the farmers with arable reversion had not noticed any obvious benefits to biodiversity, others, particularly those with SSSIs on their land noted the presence of wild flowers and rare species such as orchids. Participants appear to value such areas and want to manage them appropriately as demonstrated by the following quote from a landowner located in the High Wold area:

> *"We have a lovely area of wildflowers, we get really rare orchids growing down there. I got a botanist to come out and have a look, I was really interested in what we had. We graze that area with cattle as I think sheep would destroy it."*(Landowner – High Wold).

Two of the participants who are predominantly sheep farmers had purchased small numbers of cattle as they were better suited to grazing on SSSIs.

4.5.2. Agri-environment schemes

The majority of participants who are coming out of ESA schemes are hoping to be accepted into HLS. This may provide opportunities for improved grassland management. However, as already noted some of the participants who have entered HLS have been permitted to plough large areas of grassland. This may provide an opportunity to work with Natural England to prioritise the maintenance of some areas of grassland to improve habitat connectivity in the area.

4.5.3. Finding grassland and graziers

Although there are some grassland auctions in the area, none of the participants use them to source grassland or graziers. Generally, both landowners and graziers were reluctant to source grassland or graziers through land agents due to the costs that may be incurred. Instead, word of mouth is relied on by both landowners and graziers. However, the majority of participants recognise the benefits of a more formal approach. When asked about this further, most participants felt that an online database would be most appropriate. Smaller landowners were most amenable to a more formal approach as they may be less likely to be embedded in the local farming network, so may therefore not have contact with potential graziers, as described by one participant:

> *"People who are not really farmers, who are just wealthy people who have bought some land and a house, where management of the land is of low priority, they might not even think to do anything with it – or if they did they wouldn't know who to contact."* (Grazier – High Wold).

Based on the barriers and opportunities outlined about a number of proposals for implementing a new grazing approach were developed. These are outlined in the following section.

5. Proposals for a new approach to grazing

The focus of this study is to establish whether a business case can be built to support the development of a new grazing approach in the Cotswolds NIAs. The potential for the introduction of a cooperative grazing approach whereby livestock are grazed across ownership boundaries was the initial proposal that was discussed with participants. However, as detailed in the following sub-section, while a business case can be made for such an approach, a proposal for the implementation of a formal cooperative grazing approach gained little support from landowners and graziers. It was therefore necessary to broaden discussions to include other potential approaches. It is essential that any new approach contributes to the wider objectives of the Cotswolds NIAs.

5.1. Building a business case for cooperative grazing

A cooperative grazing approach would involve cooperation between landowners and between landowners and graziers to allow livestock to be grazed across large areas of land, unrestricted by ownership boundaries. In order for such an approach to be feasible it is essential to establish whether a business case can be built in its support. The findings of the study suggest that grazing across ownership boundaries can have a number of benefits. Most notably, it reduces the requirement to transport stock, and checking on stock would be more convenient. Cooperative grazing would enable this approach to be scaled up to bring together a number of farms and graziers and allow stock to be moved easily across the land. Ideally, this approach would provide access to smaller areas of currently under-grazed grassland.

A cooperative grazing approach could potentially provide opportunities for graziers to expand their stock numbers and reduce their travel costs. The approach would be particularly beneficial in places with large areas of under-grazed grassland. At a time when livestock farming is becoming more productive, cooperative grazing would potentially provide opportunities for increasing numbers of grazing stock on the Cotswolds through making sheep and cattle farming more feasible for farmers with little or none of their own land.

In order to establish the level of support for the implementation of cooperative grazing approach, study participants were asked about their general opinions towards cooperative activities as well as their views on the introduction of a cooperative approach to grazing. In relation to attitudes towards cooperative activities such as buying and selling groups, machinery sharing and reciprocal activities with local farmers, study participants' opinions were mixed. Some of the participants undertake such activities and recognised the benefits of doing so, however, others prefer to work more independently and do not wish to be involved in any such activities or groups. More specifically, study participants were asked for their opinions on the implementation of a cooperative grazing approach. There was very limited support for such an approach with participants feeling that in general all available grassland in the two areas is already being grazed. Many of the interviewees felt that the implementation of a cooperative grazing approach would be overcomplicated and unnecessary. This is exemplified by the following quote from a landowner located in the High Wold case study area:

> *"From our perspective, it [cooperative grazing] wouldn't be an advantage to us because we just sell the grass to a neighbour so getting involved with anyone else would be complicated. I don't know if it could be implemented in the Cotswold area, I've never thought about it. If you have more than one tenant that could lead to more problems – over grazing, under grazing, stock getting out etc. so I don't know if I would be keen going down that road – but if the grazier we had at the moment wanted to have someone else's sheep on the farm – I don't know what the situation would be I suppose, technically he's still complying with the agreement."*(Landowner – High Wold).

However, one key benefit was recognised which was the importance for graziers to be able to check their stock regularly which would be more achievable if all of their livestock was on contiguous land. No other benefits were identified. Some graziers are already grazing on contiguous farms, including one individual

who rents a large parcel of land from three different land owners. This is seen as beneficial to the grazier as he is able to manage the whole area as one farm. However, this is not on a cooperative basis and any sort of formal approach was not considered practical as most land is already grazed under formal or informal agreements by different graziers who are generally happy with the current situation.

Additionally, it is worth noting that some informal cooperative grazing is already being undertaken in both areas. This involves livestock owners grazing land on neighbouring farms, often under an informal agreement. In such instances no money is exchanged as the grazier grazes stock for free in return for the benefits provided to the landowners in relation to appropriate grassland management as shown by the following quote:

> *"If the landowner wasn't my neighbour, I'd charge her for grazing my cattle there – it's not going to fatten cattle or anything. I know I'm doing her a favour…she's a neighbour, I'm happy to do it because it's been fenced and its right next door so it's not a hassle to check on the stock…this piece of land would only ever be of interest to a neighbouring farm. You would not travel for the land we're talking about…It's just so steep and horrible to manage anything. It really is horrible." (Grazier – Scarp)*

In order to distinguish between cooperative grazing whereby groups of farmers pool their land to allow graziers to graze livestock across a number of boundaries, and this more informal cooperative approach between two neighbouring landowners or between a landowner and a grazier, the latter approach was labelled *collaborative* grazing.

In order for a successful business case to be built in favour of the implementation of a formal cooperative grazing approach, buy-in from both landowners and graziers is essential. However, the findings indicate that buy-in to a formal cooperative grazing scheme is significantly lacking in both areas. As the implementation of a formal cooperative grazing approach was quickly dismissed by study participants, discussions moved to focus on the benefits associated with *collaborative* grazing which were noted by the majority of interviewees. Graziers generally agreed that they would be more likely to graze grassland that they consider to be of poorer quality if it adjoined or was within easy access of the land that they are currently grazing. However, both landowners and graziers noted that stock proofing would be essential, and graziers suggested that they would be unwilling to pay rent for such land. In order to encourage the development of a more formal collaborative approach in the Cotswolds NIAs, as well as to increase grazing more generally, a number of proposals have been developed. These are outlined in the following section.

5.2. Implementation of a pilot project

Based on the findings of the interviews and focus group carried out for this study, a number of opportunities have been identified for increasing grazing on currently under or unmanaged areas. The proposal incorporates three main elements:

- The implementation of a system of grants for stock proofing
- The development of a grassland database
- The appointment of a project officer

The proposals are based on the farmer behaviour model developed by Dwyer et al (2007) who identify three interlinked determinants of farmer behaviour: engagement, capacity to change and willingness to change. The model suggests that an individual's engagement with a scheme or initiative is essential for change to occur. At present, there is clearly a lack of engagement among landowners and graziers in relation to the under-management of grassland. As detailed earlier, small areas of undermanaged grassland have fallen into a spiral of decline and landowners to not consider them to be included in their current stock of grassland. Dwyer et al.'s (2007) farmer behaviour model therefore suggests that currently grazing behaviour is unlikely to change. In order to ensure the engagement of landowners and graziers with any new grazing approach, it will be essential that careful consideration is given to the

approaches taken by those delivering the project in terms of how the aims and objectives are communicated. The appointment of a project officer is proposed to increase engagement while the provision of grants for stock proofing and grassland management will address landowners' and graziers' capacity to change.

The three elements of the proposed pilot project are described in more detail below.

5.3. Grants for stock proofing

As discussed in section 4.4.1, stock proofing was identified by participants as the main barrier to grazing some of the currently under or unmanaged grassland in the two case study areas. Landowners are unable or unwilling to invest in permanent stock proofing or make repairs to existing fences or walls, especially if they do not have their own livestock. Coupled with this, graziers explained that they would not rent grassland which was not adequately stock proofed. The provision of grants to cover or contribute towards the cost of stock proofing would provide an important incentive for landowners to graze certain areas and to improve the quality of their grassland and prevent scrub encroachment. The proposals were received very positively by study participants as shown by the following quotes:

> *"I think a grant for fencing would be the best way to get more grazing, yes…and get the right animals grazing as well, definitely."* (Independent farm advisor)

While grants could be provided by the Cotswolds Conservation Board, opportunities for gaining funding for stock proofing through High Level Stewardship and other potential sources (such as RDPE or the Catchment Sensitive Farming Scheme) should also be promoted. To ensure that such grants result in long-term grazing, the grant should be attached to a formal grazing agreement with a grazier to graze the land for at least ten years, this could also be tied to the type of livestock grazed on the land to ensure the most appropriate management. This was considered to be important, particularly by graziers:

> *"Well you'd have to say 'okay…if you're getting grant money, you've got to sign up to someone grazing for x amount of years' …Otherwise they'll be some landowners who will say 'oh yeah, we'll put stock there if you fence it' and they'll stock it for one year, and get rid of the stock – you've got to tie them in legally."* (Grazier – Scarp)

In order to promote the use of the database discussed in the following section, the application for grants could be incorporated into the database site. The mechanisms necessary for the implementation of the grassland database are discussed below.

5.4. Grassland database

Desk based research and area visits identified a number of small areas of grassland that are currently undermanaged in the case study areas, leading to scrub encroachment. Additionally, the telephone interviews and focus group identified a high demand for grassland among graziers in the areas and a lack of a formal route for matching graziers with grassland. This presents an opportunity to provide a database for use by both graziers and landowners. This was discussed with study participants and received positive feedback. The majority of participants felt that an online database would be most appropriate. This could be used to advertise areas of grassland and to source grassland for grazing. In addition to supporting word of mouth advertising, this would provide opportunities for smaller (non-farming) landowners who may not know other local landowners or graziers to advertise their land.

Similar databases have been established at a national level. These mainly include databases focussed on horse grazing and stabling. However, 'Stock Keep' provides a free national database of grassland and graziers as part of the Grazing Animals Project. Funding for the database is provided by selling online advertising space on the database[3]. While the national database could be used by local landowners and graziers, a local database targeted at the Cotswolds AONB and promoted within the area was generally favoured by study participants. Key to the success of the database is the engagement of local

[3] Further details can be found at: http://www.stockkeep.co.uk/advertise.html

landowners in order to promote the various benefits of grazing. This will be one of the main roles of the project officer as detailed in the following section.

Participants were asked whether they were willing to pay for using an online grazing database. This received mixed views. Some participants, particularly graziers said that they would be willing to pay a small 'finder's fee' if they found grazing land through the database. However, they noted that this would depend on the quality of the land and its location. They would not be willing to pay a fee for low quality grassland. Landowners were more reluctant to pay any fee, especially those who find graziers fairly easily. Based on the findings from this study it is suggested that in order to encourage landowners and graziers to use the database it should be free of charge, at least initially.

Another barrier that the database could address is the limited use of formal legal grazing agreements. Although the vast majority of participants felt that suitable legal arrangements for grazing were quite or very important, far less actually had formal agreements in place. Instead, agreements are made on the basis of a handshake often due to the cost and hassle associated with obtaining a formal agreement. The grazing database could therefore provide a template grazing agreement which could be amended and used by landowners and graziers as appropriate.

5.5. Project officer

One of the main findings of this study is the lack of engagement among both landowners and graziers with areas of undermanaged grassland which many consider to be of poor quality and with limited grazing potential. In order to ensure the success of the pilot project, developing engagement is essential. The main route through which this could be achieved is through the appointment of a project officer to take charge of the project. This would allow for a thorough assessment of grassland management in the pilot area and the identification of grassland at risk of mismanagement or scrub encroachment. The landowners could then be approached directly to discuss the potential for grazing and if necessary, stock proofing. The benefits of grazing particular livestock on areas of high biodiversity value would also be communicated along with the financial benefits associated with native breeds for example.

5.5.1. Mapping

In order for areas of un-grazed or undermanaged grassland to be brought back into the grazing system, the mapping of potential areas is essential. This would involve visits to the pilot project area as well as discussions with key stakeholders to identify and categorise relevant grassland and note any issues relating to stock proofing or the provision of water. This will contribute to the landscape scale management of the area to address issues such as habitat connectivity and the provision of ecosystem services.

5.5.2. Project engagement

The project officer's main responsibility would be to engage landowners with the project. This would include promoting the benefits of grazing with a particular focus on the financial benefits available to landowners for appropriate grassland management. This would include the potential income that could be available from letting the land to graziers (although this will depend on the grazing quality and accessibility of the land) and the longer-term increase in the value of the land brought about by better management. The project officer would also make landowners aware of the potential for gaining grants for stock proofing of the land. Another issue which could be a focus in promoting the grazing project is the requirements for grassland management under Cross-Compliance regulations as set out in section 2.5. Based on the study findings, there appears to be a lack of awareness amongst some landowners of the requirements or the implications for failing to comply. Communicating the risk of breaching the regulations, and the financial penalties that could be encountered may encourage landowners to engage with the project.

Engagement of landowners will lead to a change in long-term grazing behaviour. It will bring unmanaged areas back under appropriate management which, once grazed will increase in quality and become more valuable with higher grazing potential. In order for poorer areas of grassland to be brought back into the

grazing system it is recommended that an initial grazing rent is set at zero. Although landowners who participated in the study were reluctant to let their land for free, it will be difficult to encourage graziers to graze poorer land at a price. In order to gain support for this approach it will be necessary to emphasise the longer-term increase in value that the landowner will benefit from through improved land management and access to fencing grants. Other benefits should also be promoted such as the costs saved by landowners for mowing and/or topping the land and the assurance that improved land management will meet Cross-Compliance and agri-environment requirements.

Some landowners may be unaware of agri-environment schemes and, if eligible could therefore be guided through the Entry Level Stewardship process by the project officer. The focus here is to promote the financial benefits of landscape management for landowners. Engagement could be achieved through directly approaching individual landowners or distributing promotional material such as leaflets detailing the advantages of grazing and detailing the grants and database that are detailed above. The overall focus of this approach would be to encourage landowners to view graziers as contractors who provide a land management service allowing the landowners to meet necessary requirements rather than providing a rental income.

The focus of this report is the need to manage grassland to allow it to become more semi-natural in character. This would be best achieved, particularly in areas which are currently undermanaged, by grazing native breeds of cattle and sheep. Only a small number of the interviewees have native breeds which are particularly suited to grazing on the Cotswolds, but those who do, recognise the benefits. For example, one particular farmer has bought a small herd of native cattle to graze the grassland on a SSSI, rather than grazing his sheep there. The conservation benefits of such breeds should be promoted by the project officer alongside the potential financial benefits such as the reduced need for housing over winter, and the niche marketing opportunities.

The project officer would also work with landowners who are considering ploughing up areas of permanent pasture in order to outline the various benefits of maintaining the grassland. The increasing profitability of livestock farming would be emphasised, coupled with the potential for accessing grants for stock-proofing.

Collaborative grazing agreements between neighbouring landowners or between a landowner and the graziers grazing neighbouring land were noted by interviewees as particularly beneficial. This is therefore an approach that will be encouraged by the project officer. Once an area of undermanaged grassland is identified, the project officer will communicate with the neighbouring grazier to establish the potential for letting the land. Although this approach should be encouraged, it is suggested that the pilot project is not restricted to collaborative agreements as in some cases it may be more appropriate to identify a grazier with particular stock of a breed which is most suited to the type of grazing available. This is where the database is likely to be most helpful.

5.5.3. Working with graziers

The project officer could also work with graziers to encourage their use of the grassland database. The project officer could also identify smaller parcels of grassland which could be grouped together which could then be more appealing to graziers. These areas may be owned by different landowners, and although they may not be contiguous they would be close enough to allow graziers to travel between the sites easily without being overly resource intensive (e.g. time and fuel costs).

5.6. Pilot project area

While the whole of the Cotswolds AONB would benefit from the proposals outlined above, the Cotswolds Scarp NIA has been identified as a potential area for the implementation of a pilot project. This area is characterised by relatively small landholdings, many of which are owned by non-farmers who may not necessarily be embedded in traditional farming networks. Additionally, knowledge of Cross-Compliance regulations may also be more limited among this group. Landowners who do not have their own livestock may also be less likely to have recently invested in stock proofing on their land. The Cotswolds Scarp NIA

also has many small areas of grassland that are undermanaged which are at risk of scrub encroachment and abandonment.

6. Conclusion

Much of the permanent pasture on the Cotswolds provides nationally important species rich grassland. However, as the profitability of livestock has reduced, so has grazing. This has led to the under-managment of some areas and in some cases, abandonment of grassland. These areas have become overgrown with scrub and invasive grassland species. This prevents the development of important wild flower species. Other areas of grassland that have been managed as arable reversion are now at risk of being ploughed for arable production as payments under the Environmentally Sensitive Areas Scheme come to an end. These issues are particularly prominent in the newly established Cotswolds NIAs: the Cotswolds Scarp NIA and the Cotswolds Valleys NIA.

This study has identified a number of barriers to and opportunities for grazing in the Cotswolds NIAs. These are associated with the nature of landownership in the two areas with the Scarp characterised by a large number of smallholdings, many of which are owned by hobby or non-farmers. This raises issues relating to the engagement of such landowners with the financial benefits of grazing areas of often isolated and unmanaged grassland. Stock proofing has also been identified as a key barrier to grazing with landowners unwilling or unable to make financial investments and graziers unlikely to take on land that is not fully stock proof. However, opportunities for increasing grazing have been identified including the high demand for additional grassland among graziers. Additionally, the conservation benefits of grassland and grazing were noted by participants, particularly those with SSSIs on their land who described the presence of wild flowers and rare species such as orchids. Participants appear to value such areas and want to manage them appropriately.

While it is clear that a business case could be built for the implementation of a formal cooperative grazing approach, this study has found that there would be very little buy-in to such an approach from either landowners or graziers. Interviewees did not consider there to be a problem with grassland management in the NIAs and areas of undermanaged grassland are generally small and not stock proof. As such, they do not feature in what landowners consider to be their current 'stock' of grassland, and instead have entered a spiral of decline whereby the land is not grazed and will become increasingly un-grazable due to scrub encroachment and the reduced quality of the grass. In order to address this, and to bring these areas of grassland back under management engagement is key. Landowner and farmer engagement therefore forms the focus of the proposals put forward in this report. The proposals aim to address the barriers to grazing that have been identified whilst contributing to the wider aims of the Cotswolds NIAs and the Cotswolds Ecological Network Forum. In section 1.4 the following aims were noted:

- Develop and deliver the Cotswold's NIAs by coordinating existing activity and filling gaps in activity through developing new projects
- Encourage and realise opportunities to increase habitat connectivity both with the NIAs and across the wider landscape
- Identify and develop new ways of sustaining activity and communicate key messages.

The proposals will address these aims in a number of ways. Firstly, the proposals will help to assess the current quality of grassland in the pilot area and identify opportunities to graze undermanaged areas or areas at risk of being ploughed for arable production. Secondly, the new approach will provide the necessary mechanisms to bring these areas under appropriate management to increase habitat connectivity. This will have a particular focus on collaborate grazing whereby land is grazed by a neighbouring landowner or grazier. The grazing of grassland with appropriate livestock will also be emphasised alongside the financial benefits associated with farming native breeds which are better suited to grazing on the Cotswolds. Thirdly, project engagement will provide opportunities to communicate the importance of grazing and grassland management to landowners and emphasise the long-term financial benefits that can be gained by both landowners and graziers. While the proposals will enhance habitat connectivity, other outcomes will also be provided including the provision of ecosystem services and opportunities for wildlife climate change adaptation.

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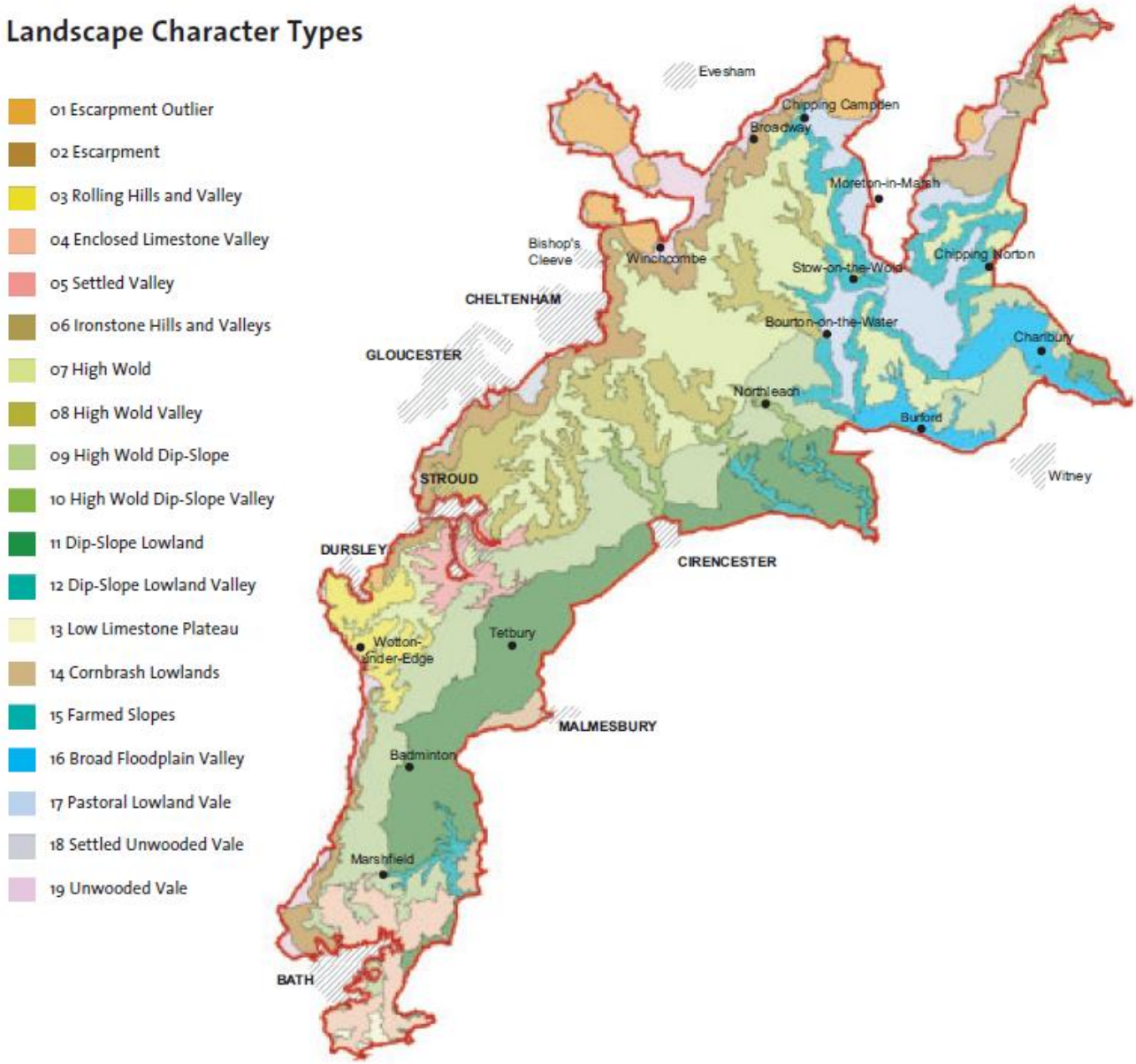
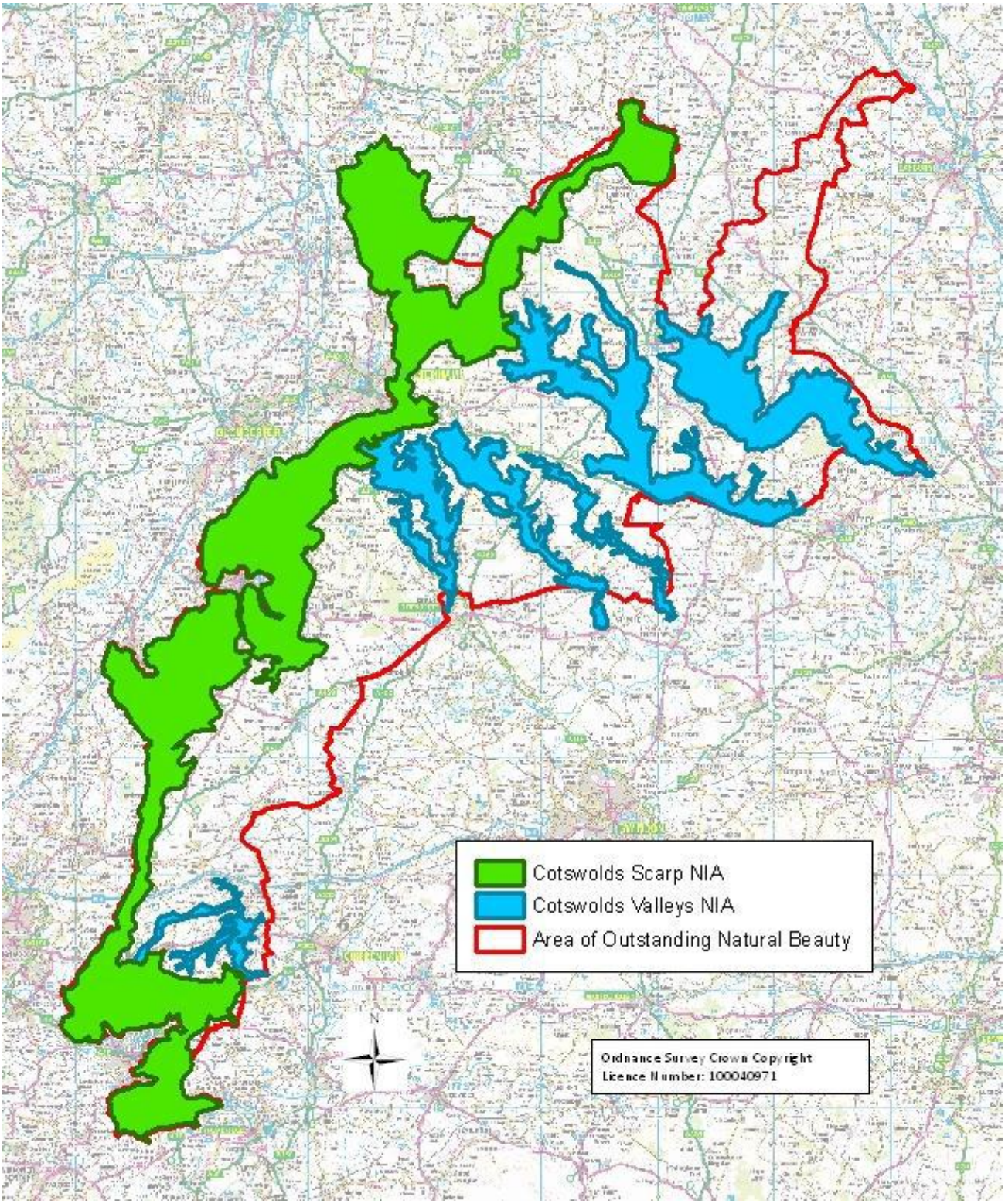
8. Appendices

Appendix 1. Landscape Character Types in the Cotswolds AONB

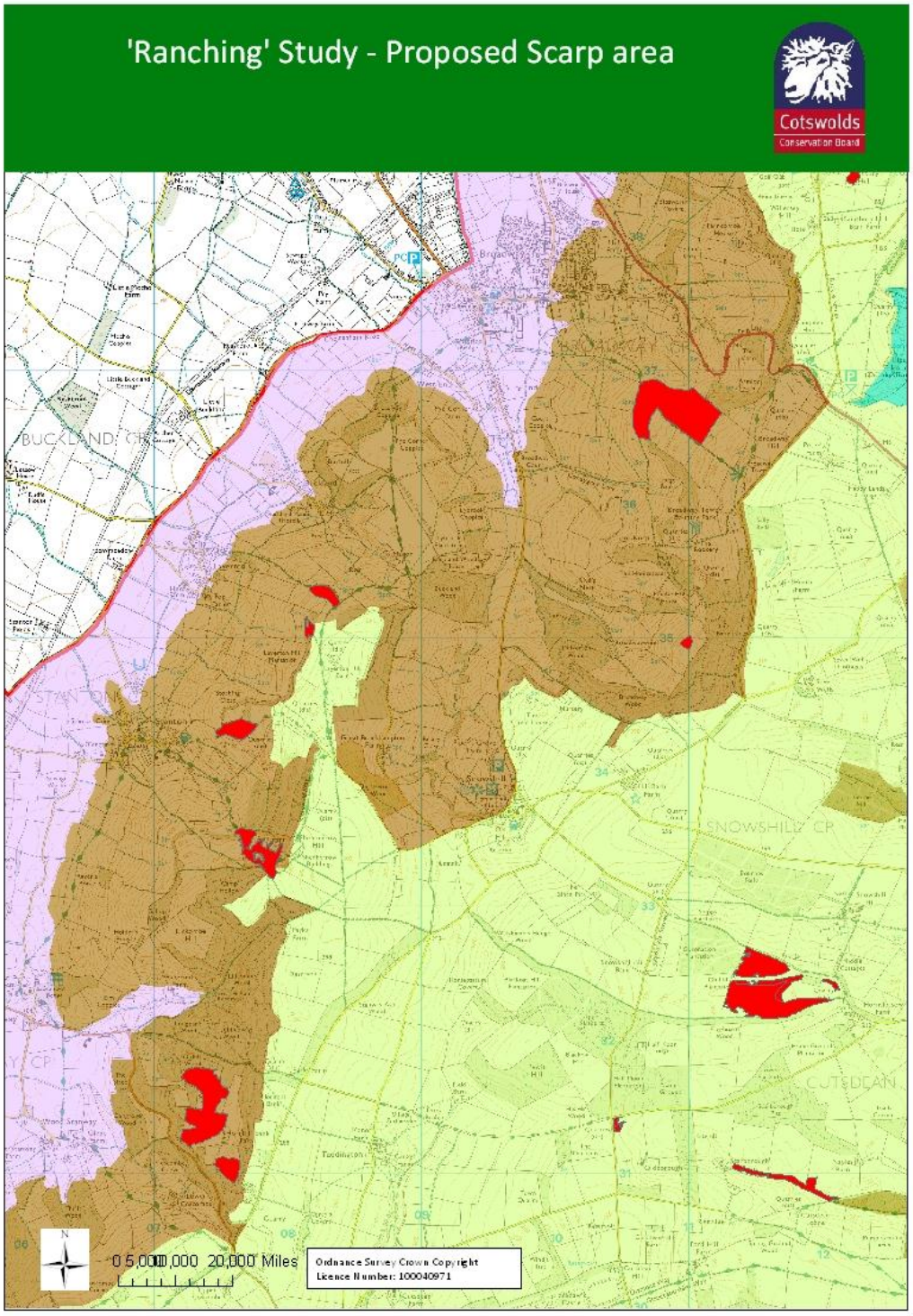


Appendix 2: Location of the Cotswolds NIAs

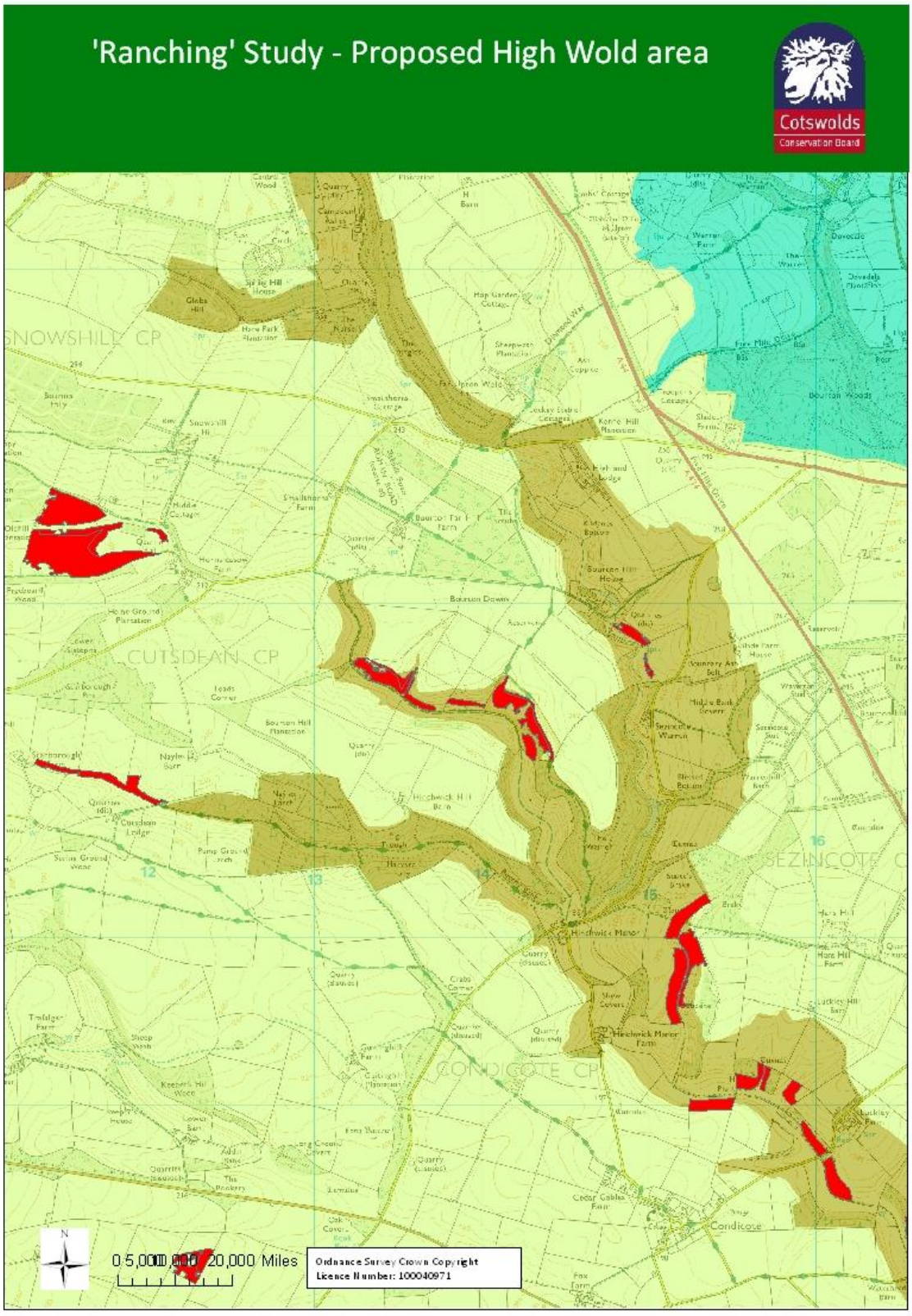


Appendix 3: Maps of case study areas

Case study area 1: Escarpment (the case study area is shown in brown and areas of grassland of conservation value are shown in red).



Case study area 2: High Wold (The High Wold character area is shown in light yellow and the High Wold Valleys is shown in dark brown. Areas of grassland of conservation value are shown in red)



Appendix 4 Telephone interview schedule for landowners and graziers

Cooperative Grazing

Farmer/Landowner Interview Schedule

Aim: to establish the feasibility of a new grazing approach whereby livestock are grazed across ownership boundaries.

Introduction

I am calling from the Royal Agricultural College. We are currently undertaking some research for the Cotswolds Conservation Board looking at the feasibility of introducing a new business-focussed approach to cooperative grazing as a mechanism to retain grazing in your area. We would like to ask you some questions to help us establish whether a business case is feasible and what aspects a new approach should cover in order to retain or increase grazing on less improved areas of grassland.

Farm Structural Characteristics

First, I would like to start by asking you a few questions about your farm

1. **Please could you tell me about your farm?**

   - Enterprises
   - How long has the farmer been there

2. **How big is the farm and what is the tenure?**

	Owned	Rented	Total
Acres/hectares			

3. Do you have any livestock?

Yes (go to question 4)

No (go to question 6)

4. What livestock do you have?

	Beef	Dairy	Sheep	Horses	Other
Number					
Details on system (circle)	Suckler herd finishing herd Rearing stores	Indoor all year Indoor in winter	Grazed outside all year Housed in winter/lambing	Livery Privately owned Purpose?	
Breed					
Other details					

5. Do you have any plans to change your livestock numbers?

Explore any potential barriers such as access to grazing land

Explore reasons if planning to reduce numbers

Also explore plans to change breed or type of livestock

Grazing management characteristics

I am now going to ask you some questions about the grassland on your farm and how it is managed. This will help us to build up a picture of the quality of grassland in the area and any requirements for additional grazing.

6. What grassland do you currently have on your farm?

		Tenure (ha/ac)			
			Area Rented		
	Total Area (ha/ac)	Area Owned	Short-term let	Farm Business Tenancy	Agricultural Holding Act
Permanent pasture					
Semi-permanent pasture					
Grass Ley					

Short term = Annual Grazing Licence (less than 1 yr)/ Gladstone and Bowler Agreement (More than 1 yr but less 2)

7. If you have any grass leys, are they included in your rotation?

8. **Thinking about the permanent and semi-permanent grassland, how much would be classified as follows?:**

	Ha/acres	Number of fields
Improved grassland		
Unimproved but managed		
Unmanaged		

9. **Discuss the location of the grassland areas with the interviewee and mark them on the map**

10. **What management strategies do you currently have in place?**

Management strategy	% of grassland managed using this strategy	Timing/frequency
Cutting		
Grazing – with what livestock?		
Unmanaged		

11. **Have these management strategies changed at all in the last 10 years? If so, how?**

12. If any of the grassland is currently not managed, what are the reasons for this?

13. Thinking about any areas of unmanaged grassland, what value to the farm do you consider them to be?

14. Do you have any problems with scrub encroachment? If so what do you do about it?

15. If any of the grassland is currently ungrazed, would you like to have it grazed?

16. If the grassland is grazed, is it grazed by your own livestock?

If yes, have you ever let out any of the grassland?

17. If no, who grazes the land?

We would like to contact the grazier(s) that use your land to ask them the same questions relating to their own business. Would you be able to give me their contact details?

Name and contact details of grazier(s):

Name	**Address**	**Telephone number**

18. What sort of agreement do you have?

E.g. informal, grass let, long term tenancy
How is the cost decided?
What level of responsibility do you have? E.g. maintenance of fencing etc.
Have you encountered any problems?

19. If you have livestock, do you ever graze them on land that is not your own?

If so, repeat question above relating to agreements.

20. What is the current condition of the fields in terms of suitability for grazing?

	Present and in good condition	Present but requires repair	Not present
Stock proofing (e.g. Walling/fencing)			
Water			

21. Are there weed species like ragwort and yew on the grassland?

22. What is the condition of grassland on neighbouring farms? Gather what details you can about owners/graziers etc. Note that we are focusing on semi/permanent grassland not short-term leys

E.g. managed/unmanaged etc.

23. What management strategies are undertaken on these farms and have they changed over the last 10 years?

Views on Co-operative grazing

The grazing approach that we are looking into would involve farmers and landowners cooperating with each other to allow those with livestock to graze areas that are currently under grazed. I would therefore like to ask you some questions about your experience of cooperating with other farmers and landowners and any concerns you may have.

24. Are you involved with any cooperative activities with local farmers/landowners?

E.g. machinery sharing, buying/selling cooperative, 'helping out' neighbours , TB testing, breed societies etc.

Explore advantages or disadvantages of being involved in cooperative activities

25. If you are not currently involved in any cooperative activities, would you like to be?

Agri-environment Schemes

Grassland can often be included in an agri-environment agreement and Single Farm Payment. I would therefore like to ask a few questions about this on your farm.

26. Are you currently in an agri-environment scheme? (If no, why not? Go to Q29)

E.g. Entry Level Stewardship, Higher Level Stewardship, Environmentally Sensitive Areas Scheme, Countryside Stewardship Scheme

27. If yes, is grassland management part of the agreement?

28. If you are in ESA or CCS, what are your plans for when the agreement ends in 2014?

If they are not going to apply for another scheme explore potential arable reversion

29. Do you claim Single Farm Payment on all of the grassland? If Yes, go to Q32

30. If no, is grazing an issue in relation to meeting cross-compliance regulations?

31. Would you claim Single Farm Payment if your grassland was managed?

Mechanisms required for a new grazing scheme

We would like to establish what reassurances and assistance it would need for those farmers and landowners who have un or under managed grassland to cooperate with others. This should cover financial issues and any other concerns and ideas you may have.

32. How important are the following issues when considering whether to make a grazing agreement with another farmer or landowner?

	Unimportant	Not very important	Quite important	Very important
Suitable legal arrangements				
Suitable financial arrangements				
Practical arrangements/responsibilities				

Explore each of these in more detail below:

33. Please can you give me more detail about what legal arrangements you think would be required for a successful grazing scheme?

Type of agreement (e.g. formal/informal)
Length of agreement
Responsibilities

34. Please can you give me more detail about what financial arrangements you think would be most appropriate for a successful grazing scheme?

Payment – from who to who? (e.g. should the landowner or the grazier pay?)
- cost per acre
- should it be a free service for both parties?

35. Please can you give me more detail about what practical arrangements you think would be most appropriate for a successful grazing scheme and what responsibilities each party should have?

Responsibility for maintaining fencing/water etc.

36. Do you have any other issues or concerns that you would like to raise?

E.g. Responsibilities, liabilities, damage to land, insurance etc.

37. What do you think would be the main advantages of a cooperative grazing approach?

38. If you wanted to find out about potential grazing opportunities what would be your preferred source of information?

Online database followed by online correspondence
Direct contact from the grazer, landowner in person or by telephone?
Through a central organisation (e.g. Cotswold Conservation Board, FWAG, NFU, Bidwells)

And finally…

39. We are hoping to speak to a range of farmers in the area about the grazing scheme. Would you be able to give me the names and contact details of your neighbouring farmers?

Name	Address	Telephone number

Thank you very for your time. We will be conducting a focus group later this month, would you be willing for us to contact you nearer the time to ask if you would be willing to take part?

If so, what is the best phone number to contact you on? _____

Appendix 5: Focus group discussion schedule

Grazing Project – Focus Group

Overview

The Cotswolds Conservation Board is looking into the introduction of a scheme to encourage grazing on the Cotswolds, especially on areas that are currently underutilised. This project is therefore looking at the feasibility of setting up a scheme which helps landowners and graziers to maximise the available grassland resource while ensuring successful conservation.

We are planning to discuss a number of issues including your opinions of the current state of grassland in your area and the management strategies that are currently underway and your views of the conservation benefits of grazing. We will then be discussing current barriers to grazing such as the availability of quality grazing land or the cost of land available. After this we will be discussing our proposals for a scheme to match landowners with potential graziers.

The Cotswolds AONB contains over 50% of the UK's Jurassic unimproved limestone grassland. The grassland is home to a large number of declining plants and supports nationally rare butterflies. Grazing of the grassland is essential in order to prevent scrub encroachment. There are many important conservation areas including 40 Sites of Special Scientific Interest. There has been a significant loss of Cotswold grassland, due to a reduction in livestock numbers and increased profitability of arable crops. Some areas of grassland have become overgrown with scrub and coarse grasses.

Maps

Ask participants to identify and mark the following areas:

- Underutilised grassland
- Areas of high conservation value
- Areas of grassland that may be ploughed within the next 2 years
-

Current state of grassland in the area

- Look at the maps of the area and establish where there may be areas of underutilised grassland or issues of scrub encroachment.
- Discuss the reasons why these areas may be underutilised – e.g. typology, access, stock proofing, conservation benefits
- Discuss the potential for improving the management of underutilised areas – e.g. stock-proofing, concerns relating to disease or stock escaping etc.

Conservation benefits of grazing

- Discuss the conservation benefits of managing grassland or leaving it in a less managed state – have the participants noticed any particular conservation benefits relating to different grassland management strategies.

Availability of grazing land

- How easy is it to find grazing land/graziers
- What are the barriers (e.g. graziers unwilling to pay for poor quality grassland, landowners reluctant to invest in stock proofing)

Grazing agreements

- If you were to let out any of your grazing land or rent some grassland what sort of agreement would you have?
- Formal/informal, importance of trust, recommendations etc
- How are formal agreements usually devised? (e.g. use of land agent)
- Responsibilities
- Who should have responsibility for stock proofing/maintenance

ESA, arable reversion and the impact of CAP proposals

- Some of the farmers that we spoke to have recently come out of ESA agreements or will be coming out by August next year. We are interested in how likely it is that they will plough up areas of arable reversion.
- Explore motivations (e.g. increasing wheat prices)
- Some of the farmers we spoke to mentioned the CAP permanent pasture proposals – what are your views

As part of the 'greening measures' the CAP will require the maintenance of permanent pasture based on the declared area in 2014. There will be a proposed 5% tolerance on the 2014 figure

Single Farm Payment and Cross-Compliance

- Assess participants' knowledge of cross-compliance regulations
- Most of the farmers and landowners that we spoke to claim Single Farm Payment on all of their grassland, however, if some of their grassland is less managed they may be in breach of cross-compliance regulations

GAEC12 - Any area of agricultural land which is not being used for cropping or grazing, together with its environmental features, must remain capable of being returned to production, even though you do not have to grow or manage a crop on it to receive your SPS payment. The benefits to the environment from maintaining a cover of green vegetation (a green cover), include minimising soil erosion which can act as a potential source of pollution. However, too much weed and scrub build-up can jeopardise neighbouring land and put future cropping options at risk.Weeds and scrub can be allowed to develop, but you should control them by carefully planned cutting and/or grazing. You must not cut more than 50% of your land which is not in agricultural production in any 12 month period. This helps to maintain a wide range of habitat on land not in production, which is of benefit to wildlife. You do not need to cut your land every year if it is not in agricultural production. But to avoid scrub encroaching on land which is not in production for long periods you must make sure that all of this land is cut at least once every 5 years.

- Do you think that farmers and landowners are aware that they may be in breach of the regulations?
- Explore barriers (e.g. lack of inspections)

Feedback on Proposal

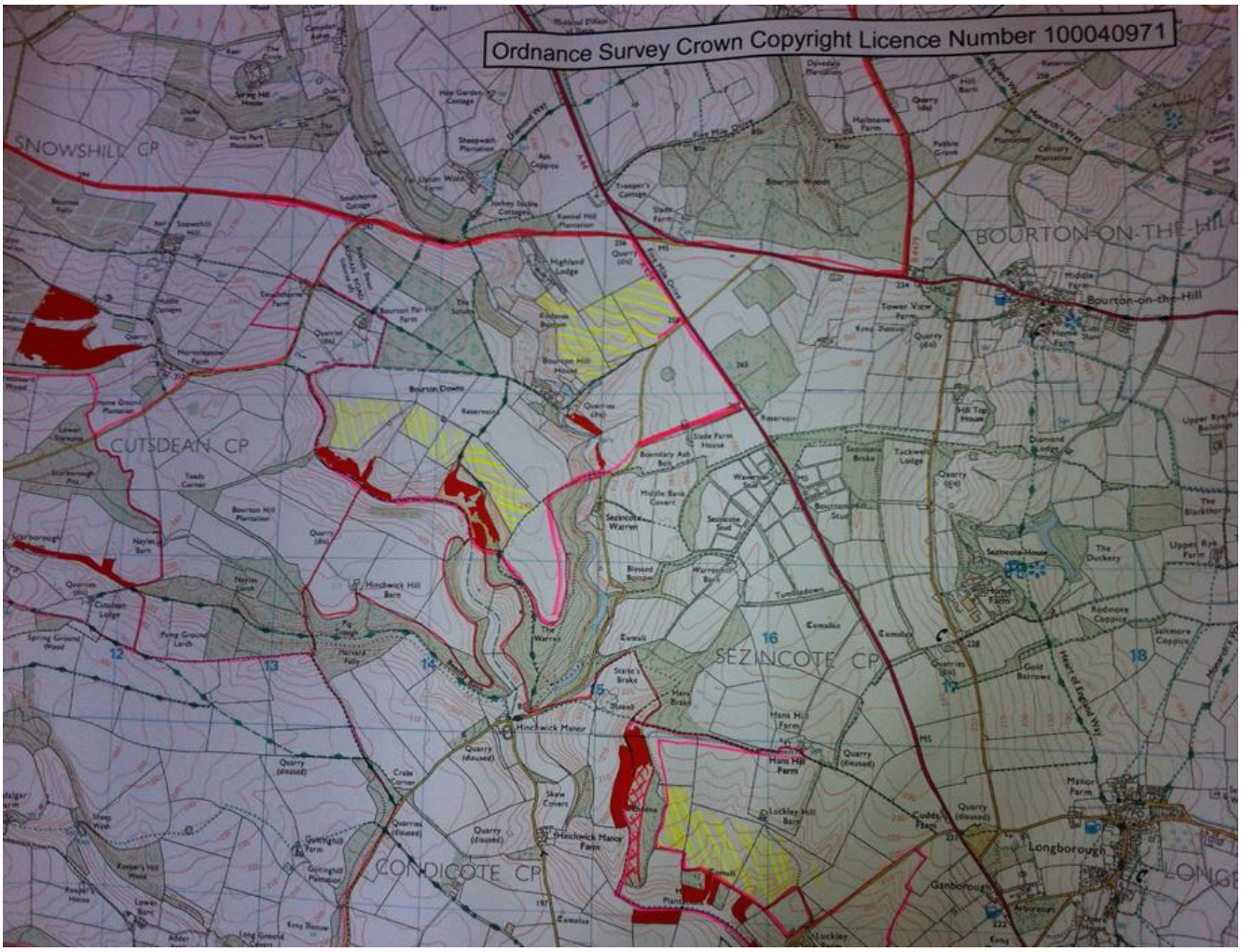
- We propose the development of a database with which graziers and landowners could register and could search for a suitable grazier or for available grassland?
- What would be the best way of hosting this?
    - Online?
    - Through a land agent?
    - An independent organisation (e.g. Cotswolds Conservation Board)

- Once matches are made would you want assistance with drawing up formal agreements?
- Would formal agreements be favoured if there was no or limited cost involved?
- Would you be willing to pay for the service? – How much?
- Are there any obvious barriers to a service like this?
- Who would it most likely appeal to? (graziers, small/large landowners etc)

- Grants –
- Are grants required for stock-proofing or providing water in fields?

- Do you have any other ideas?

Appendix 6: Map of the High Wold study area showing the boundaries of the farms that participated in the study (pink line), areas of grassland likely to be ploughed in the next 2 years (yellow) and areas of scrub encroachment (pink cross-hatching) as identified by focus group participants.



Appendix 7: Map of the Scarp study area showing the boundaries of the farms that participated in the study (pink line), areas of grassland likely to be ploughed in the next 2 years (yellow) and areas of scrub encroachment (pink cross-hatching) as identified by focus group participants