Grazing Theme Plan

Developing a strategic approach for England's Natura 2000 sites

'Improvement Programme for England's Natura 2000 Sites – Planning for the Future'

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Preface

IPENS and theme plans

The Improvement Programme for England's Natura 2000 sites (IPENS), supported by European LIFE+ funding, is enabling Natural England, the Environment Agency, and other key partners to plan what, how, where and when to target their efforts on Natura 2000 sites and the areas surrounding them. As part of the IPENS programme, Site Improvement Plans (SIPs) and themed action plans have been developed. SIPs provide an overview of the issues affecting features at the site level and the actions required to address them. Theme plans (Annex 1) are high-level plans which aim to improve the way in which we manage a range of key issues on the Natura 2000 site series as a whole. Theme plans can provide an over-arching direction, recommendations or outline approaches to achieve target conservation status of Natura 2000 sites in England, to complement work already underway on individual sites. The plans do not have a legal status and do not constitute a systematic evidence review, but are based on evidence and expert opinion. They are to inform action and initiatives of Natural England and its partners to help achieve the objectives of Natura 2000. It is anticipated that Natural England and others, working with stakeholder and partners, will all play a role in implementing theme plans. In the process of developing the theme plans Natural England has approached key partners and delivery bodies to seek input and agreement on the roles in delivering the improvements, although in some cases these discussions have not yet been concluded. Recommended actions and next steps identified in the theme plans are not necessarily committed or resourced but aimed at informing future resource decisions. Implementation of the theme plan recommendations will be via local prioritised delivery plans and coordinated through the IPENS After-Life Steering group, working with national and local delivery partner organisations.

Audience

The Grazing Theme Plan is aimed at those that play a key role in taking forward the actions identified in this plan, in particular (not exhaustive) Natural England, Defra, Livestock Industry partners and voluntary conservation bodies.

Executive summary

Grazing is a key element that underpins the management of many of England's Natura 2000 sites however 28% of Site Improvement Plans identify grazing as a pressure or threat. Moreover the latest round of Article 17 reporting cites inappropriate grazing as the second most frequently reported pressure or threat to Natura 2000 habitats and species.

In general:

- in the lowlands undergrazing is the main problem where the availability of stock is an increasing problem;
- whereas, for upland sites inappropriate or overgrazing remains a significant pressure.

Whilst this plan focuses on grazing from the perspective of its value as a 'tool' for habitat management, clearly it is an activity which is mainly undertaken by land managers and farmers for commercial reasons as part of a business linked to market demand. As such, it is affected by trends in the agricultural economy and by associated policies and regulations eg support payments under the Common Agricultural Policy (CAP), animal welfare and disease management requirements etc. Land managers and farmers therefore have a critical role at the site level in practically achieving sustainable grazing given the array of variable economic, environmental, welfare and practical factors that need to be taken into account in managing livestock on a case by case basis. Supporting them with adaptable practical site tailored advice underpinned by evidence and an understanding of the Natura site's conservation objectives is therefore important.

This document offers a 'high-level' strategic overview of the key factors influencing the grazing of the Natura series and is not aimed for use at the site level. It covers the main current mechanisms and policy drivers and highlights perceived strategic gaps. It then covers the key elements that are associated with successful grazing practice. These include:

- knowledgeable and skilled livestock managers - continuity of grazing practice and maintenance of livestock handling skills and experience is crucially important;
- the grazing system is integral to a sustainable farm business as far as possible so that the grazing requirements are delivered through a livestock system that meets the farmer's needs;
- identification of alternative models of grazing delivery, such as through partnerships and trusts, where livestock and mixed farming systems are no longer economically sustainable and have been lost;
- a clear understanding of the management objectives and a shared vision;
- grazing related decisions taken based on the best available evidence;
- support is available under agri-environment schemes.

It recommends a strategic approach to improving grazing outcomes on the Natura 2000 sites and concludes with a series of high level and specific priority actions including to:

- Review the in-combination impacts of livestock regulations, movement restrictions, and policies etc. on the practical decision making and behaviour of livestock graziers
- Ensure Countryside Stewardship scheme agreements and their implementation (eg verification requirements) allow for appropriate flexibility to adapt grazing management needed to achieve Natura 2000 site conservation goals and fit with farm management practices.
- Provide existing HLS agreement holders with appropriate and sometimes enhanced advisory support on Natura 2000 sites and review grazing management where required.
- Develop and rollout a skills framework to improve the grazing related decisions and advice offered by conservation advisers to graziers of Natura 2000 sites;

- Explore the opportunity for the Grazing Advice Partnership or a similar initiative to develop and disseminate enhanced advice and support tools for graziers, Natural England, Voluntary Conservation Bodies, and livestock farming organisations.
- Review and assess the need for focused agricultural grazing support measures related to Natura 2000 sites as a part of the Rural Development Programme for England to achieve and sustain appropriate grazing.
- Identify the farming system characteristics and practices that support the interest features of Natura 2000 sites and explore possible linkages to High Nature Value (HNV) farming initiatives and the Rural Development Programme indicator of High Nature Value Farmland.
- Where grazing needs to be re-introduced, promote and support community engagement to gain positive recognition of grazing as a conservation tool eg apply the principles in the *Common Purpose: A guide to agreeing management on Land*.

Contents

1. Introduction

Grazing is a key element that underpins the management of many of England's most important wildlife habitats encompassed by the Natura 2000 site series. Grassland, heathland, floodplain and coastal marshes are a few of the habitat types that require grazing to maintain the structure and composition upon which a variety of plants and animals depend for their survival (Natural England 2014). Marginal coastal habitats such as cliffs and slopes may also benefit from grazing where it is available. This plan seeks to consider the challenge of achieving appropriate levels of grazing (along with other related activities) consistent with meeting the nature conservation objectives for SACs and SPAs.

Grazing animals affect a range of ecosystem services (Annex 6) however they impact and shape their surroundings in three main ways: defoliation, trampling and nutrient cycling. The interaction of these factors has a major influence on vegetation structure and plant species richness which in turn affects the habitat niches available to associated animal species. Grazing is important in controlling more aggressive species which would otherwise dominate some habitats and by preventing scrub encroachment. The selection of certain plant species in preference to others by grazing animals is an important factor determining the structure and botanical composition of the vegetation of various habitats which in turn provide important niches for animal species particularly invertebrates.

Grazing also removes plant material more gradually than cutting or burning and gives mobile species a better chance to move to other areas within the habitat. The trampling that occurs creates gaps in the vegetation which allow seedlings to grow. This ensures a variety of species continues to flourish. In addition grazing and excretion patterns are typically heterogeneous in nature and this has been found to give rise to markedly uneven patterns of soil nutrient status and a greater diversity of botanical composition (Kirkham, 2006). Grazing also supports other farming activities such as hay-making which provides active management for valuable meadow habitats, allowing slower-growing grasses to flower and seed.

In the main, livestock farming with domesticated stock eg cattle and sheep plays the major role in shaping many Natura 2000 habitats and continuation of certain farming practices is crucial if they are to be sustained. Non-commercial grazing also plays a significant role in a range of situations across England eg rabbits on sand dunes, semi-feral goats on sea cliffs and ponies carrying out conservation grazing on wetlands and heathlands.

2. The Problem

The most recent Article 17 report lists inappropriate grazing as the second most frequently reported pressure to Natura 2000 habitats and species (Table 1).

Top 8	Pressures to EU habitats and species in England
1	J02: human induced changes in hydraulic conditions
2	A04: grazing
3	H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)
4	H04: Air pollution, air-borne pollutants
5	G01: Outdoor sports and leisure activities, recreational activities
6	B02: Forest and Plantation management & use
7	I01: invasive non-native species
8	E01: Urbanised areas, human habitation

Table 1 Pressures reported in England's contribution to the 2013 article 17 report for habitats and species of EU importance. Pressures are ranked by the frequency of all EU habitats and species.

In addition grazing is identified as a priority issue in need of improvement in 28% of Site Improvement Plans (SIPs) prepared for Natura 2000 sites by IPENS i.e. 78 SIPs. Table 2 and 3 give an overview of the range of specific issues highlighted in SIPS grouped by category (where either undergrazing, inappropriate grazing or overgrazing has been prioritised as an issue requiring improvement). Natura sites affected by grazing issues are widespread and occur in all regions of England (see Figure 1 below). Undergrazing is referenced as an issue in 45 SIPs and overgrazing in 24 (Annex 4). Grazing-related issues are recorded as a Pressure in 68 SIPs and a Threat in a further 26 SIPS (Annex 3).

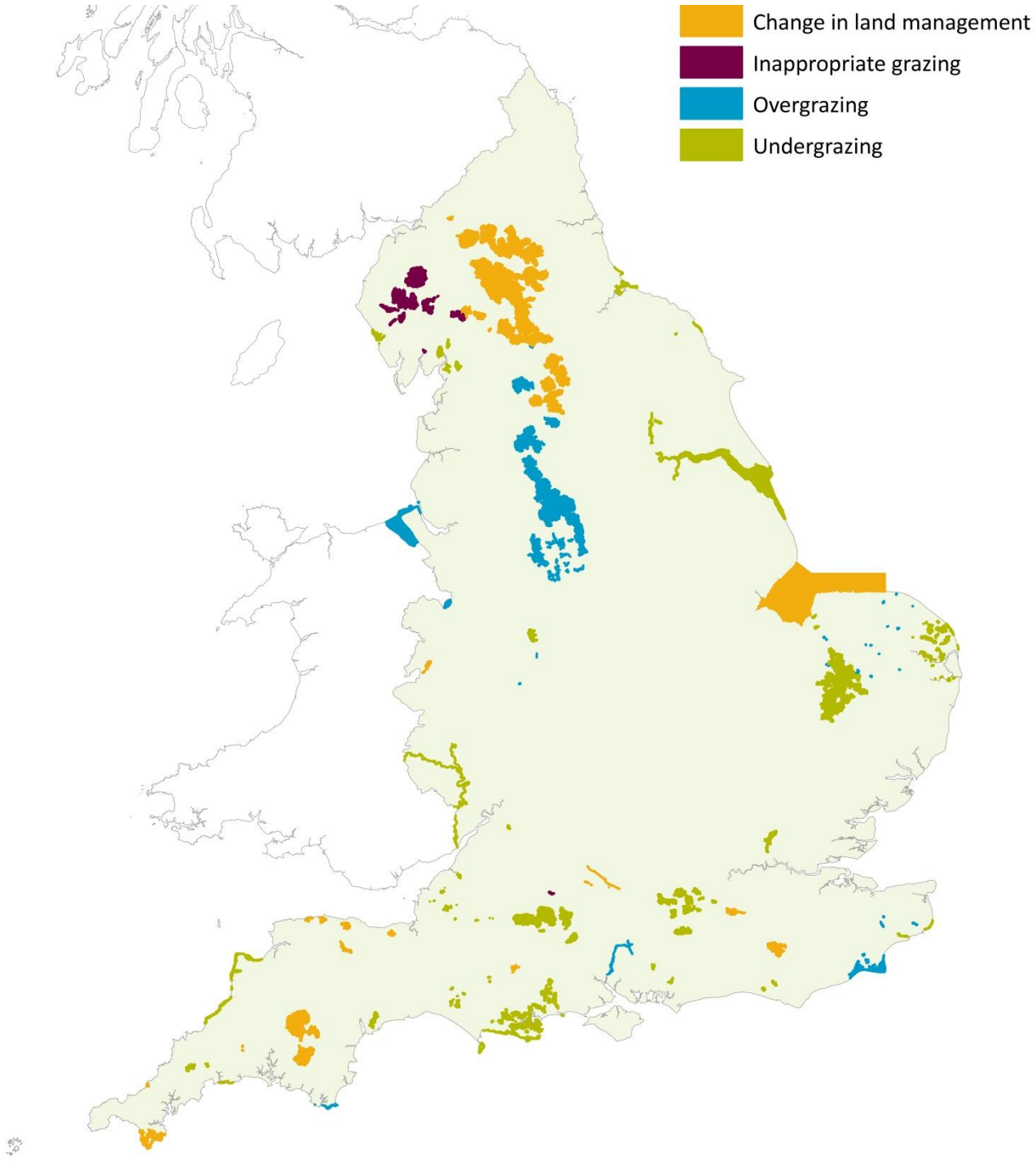

Figure 1. Map of Natura 2000 sites showing the category of grazing issue identified in Site Improvement Plans requiring improvement

Put simply, undergrazing is considered as the main problem in the lowlands where the availability of stock is an increasing problem whereas for a range of upland sites excess grazing remains a significant pressure. This is often closely linked with trends in the agricultural economy and support payments under the Common Agricultural Policy (CAP). These terms are however often over-simplifications and reflect grazing regimes (including overall grazing pressure, temporal and spatial distribution of grazing livestock, livestock type and grazing behaviour and farm

management operations such as stockfeeding) that hinder the development of favourable condition of a range of habitats and species that occur across the Natura 2000 series. Both of these threats reflect widespread disintegration of the cultural and social fabric of the kinds of farming that produced habitats with high wildlife value and which are very difficult to replicate within the legislative frameworks of designation and the rules and regulations of the various agri-environment schemes (Rodwell 2007 and others).

Natura 2000 features affected by grazing issues

From information reported in SIPs, grazing is a pressure or threat that affects a wide variety of Natura 2000 species and habitat groups (Annex 5). These include wildfowl and waders, raptors, Stone curlew, heathland birds, Southern damselfly, Marsh fritillary, and Early gentian. The most frequently affected habitat groupings, from highest to lowest, are natural and semi-natural grasslands, temperate heath and scrub, coastal and dune habitats, and raised bogs, mires and fens, forests, rocky habitats and caves, and freshwater habitats.

The management of upland habitats has been subject of recent reports (Cumulus Consultants Ltd, 2012 and Martin, 2013 and others). The 2012 report by Cumulus Consultants for the RSPB examines the issues behind changing livestock numbers in the UK Less Favoured Areas and their likely implications for biodiversity and presents research relevant to grazing on upland Natura 2000 sites. It identifies a number of trends that are changing grazing regimes including less cattle and mixed grazing; greater use of continental/improved breeds of cattle and sheep; summer grazing on the hill starting later; less out-wintering and feeding on the hill; less hefting and shepherding, less common grazing, less burning, more housing of cattle and indoor lambing, more intensive use of in-bye land, a shift from hay to silage and more finishing of stock. There are fewer holdings and farmers with stock, fewer active commoners and more part-time farmers in Less Favoured Areas (designated zones eligible for tailored EU financial support which feature natural handicaps or that are mountainous or hilly). The drivers behind these changes in livestock numbers and grazing regimes it highlights include the poor profitability of livestock farming, changing market demands, a switch from headage to decoupled payments, the introduction and widespread uptake of agri-environment schemes, outbreaks of livestock diseases including Bovine Spongiform Encephalopathy (BSE), Foot and Mouth Disease and Bovine Tuberculosis (Bovine TB), and socio-economic factors such as an aging farmer population and growth in off-farm income leading to a demand for simpler systems requiring less labour and management including less and/or a different type of stock.

The report concludes that in general upland habitats such as dry heath, wet heath and blanket bog are recovering as a result of reduced grazing by sheep in particular and that this was contributing to the improving condition of many designated sites. However it found undergrazing and loss of vegetation structure was occurring in some areas, with adverse impacts for some species such as golden plover and other waders. Less cattle and mixed grazing was found to be contributing to the spread of ranker grasses, rush, scrub and bracken and hampering restoration efforts. A decline in hefting and shepherding was associated with overgrazing and undergrazing on different parts of the same site.

A link between sheep stocking rates and degradation of moorland communities at a landscape scale is further explored by Martin, 2013. Results from monitoring studies demonstrate improvements in the condition of some habitats through stocking rate reductions. Plot-based experimental studies generally show comparatively greater improvements in habitat condition at lower stocking rates. However differences in the ranging and grazing behaviour of livestock types and breeds coupled with the variation of vegetation productivity in response to soil type, topography, climate and exposure means that there is no linear relationship between overall stocking rate and its impact on habitat condition.

Table 2 Digest of the main issues related to undergrazing featured in Site Improvement Plans (SIPs) prepared for Natura 2000 sites

Topic	The main issues identified in SIPs relating to undergrazing grouped by topic
Grazing infrastructure	Lack of winter housing; cattle grids; fencing; bridges; mobile cattle crush; lose housing; troughs; invisible fencing
Insufficient grazing animals stock and lack of suitable stock	Lack of grazing animals; lack of appropriate types of stock; help to 'match' graziers with grazing stock and site owners; support for landowners to acquire/lease traditional hardy breeds of stock
Changes in farming systems	Owners' lack of own stock leading to 'sporadic aftermath grazing'; inadequate incentives available to land owners to reverse the decline in cattle numbers in upland, coastal and lowland Natura 2000 sites; practical issues such as to few stock required on site to make it worthwhile managing the stock on that site.
Local grazing projects & partnerships	Grazing Management plans; help required to 'match' graziers with suitable grazing stock and site owners; help required to introduce grazing to small grazing parcels; securing funding; specialised grazing management for some species eg Southern damselfly.
Common Land	Secretary of State permission to fence Common land and public support including resources to carry out public engagement activities in line with 'A Common Purpose - A guide to Community Engagement for those contemplating management on Common Land ' (Natural England, 2012).
Difficult locations	Risk of disturbance by dogs/ public; risk of stock loss on steep sided cliffs; difficulty grazing wet sites; need to increase the use of ponies, semi-feral goats or hardy sheep.
Advice/guidance	Research to determine appropriate cattle grazing on limestone grasslands; complex grazing requirements to meet multiple sometimes conflicting conservation interests.

Table 3 Digest of the main issues related to overgrazing featured in Site Improvement Plans (SIPs) prepared for Natura 2000 sites

Topic	The main issues identified in SIPs relating to overgrazing and inappropriate grazing grouped by topic
Overstocking	Grazing levels exceeds that required by the habitat.
Animal type	Issues caused by rabbits, deer, Canadian geese, tethered horses as well as sheep and cattle.
Suitable Stock and Breeds	Sheep grazing occurs where more cattle grazing is desirable.
Changes in farming systems	Localised over-stocking in extensive upland situations; seasonality of grazing pressure eg early spring stocking concentrations in uplands; in-appropriate grazing in woodlands.
Boundaries	Stock-proof fencing to control access to woodlands and sensitive limestone habitats; stock barriers on Common land; protecting wetlands/rivers from excess stock pressure.
Agri-environment uptake	Increase coverage by agreements to achieve sustainable grazing; more HLS after-care advice; re-negotiate and amend existing agri-environment schemes where Natura site outcomes are not being delivered.
Advice/guidance	Information exchange with the farming community to ensure land managers have the information and advice to support them in grazing the Natura site appropriately; promotion of management agreements; co-ordination of rabbit control where excess numbers are a problem.

Negotiation/Enforcement/ regulation	Negotiate appropriate consents where grazing is unconsented; review tenancies and grazing licences; review inappropriate consents.
New funding	Non-RDPE funding for limestone pavement fencing.
Specialist/ Innovation	Pilot 'Virtual fencing projects (eg the use of electric cable laid underground around a grazing enclosure, combined with the wearing of collars by stock); support off-wintering of stock; introduce shepherding/ herding.

2.1 Overview of the main factors and issues

a) Farming and Management systems

Natura 2000 sites are often part of a livestock farming system, the grazing practice within which provides a 'starting point' for negotiating and agreeing a grazing regime. There may be a significant gap identified by monitoring and site condition assessments between the current grazing and that which is desirable to deliver the site objectives. This could include available livestock type. In other situations, particularly in the lowlands, there may be a lack of livestock through farm specialization, with predominantly unsuitable dairy stock or a lack of mixed farming. Site managers and advisers may have little choice of available livestock. Farm economics, social structure and changes in agricultural policy may result in changes to livestock systems that affect the ability to deliver conservation grazing.

Conservation grazing where the primary aim is to meet the nature conservation objectives has a role on many Natura 2000 sites and typically this involves less intensive land management techniques on areas that are less commercially productive and often involves the use of native breeds. It includes everything from extensive, low-intervention grazing that allows natural processes to occur at a large-scale eg Wild Ennerdale in Cumbria, to more conventional grazing on improved grassland managed to optimize sward structure for particular species. In some areas, for example the New Forest, historic grazing and land tenure patterns mean that it is complex to achieve optimal grazing across large habitat mosaics. New land owners particularly in the lowlands may have different aspirations from traditional farmers and may be uninterested or unwilling to graze. Added to this regulations including those relating to animal welfare and movement can also have an influential effect on peoples' decisions to graze or not.

b) Ecological character and needs

Understanding the effect of grazing on features and their optimal requirements is crucial. Whilst a body of research and knowledge exists, there are gaps and sites are highly variable, and will respond in different ways to similar management. There may well be a complex mix of habitats on large sites, with differing management requirements, making it difficult or impossible to achieve the desired level of grazing on all features, especially for features that are very limited in extent. There may also be conflicts with non-biological features such as archaeology. This requires a good understanding of where features are, through accurate mapping and clear guidance, for example from site-tailored Favourable Condition Tables (FCTs), to guide prioritisation and practical management.

c) Engagement

Effective agreements depend on developing a shared understanding of the outcomes for a site and the management, including grazing, required. This needs openness, good communication and trust between conservation advisers, farmers and land managers. This is particularly important on land with shared tenure, such as commons, where engagement and consensus building can be more time consuming for all parties. Agreement about the pace of change relating to stocking levels is essential to ensure that farmers are engaged and feel comfortable with what is being asked of them in terms of the conservation grazing needs. Sound evidence from research and monitoring is required to underpin grazing advice and improve confidence amongst land managers.

On some sites where there are considerable levels of public access and this can sometimes acts as a constraint on the level and type grazing practiced. Graziers' decisions may be influenced by concerns over stock worrying by dogs,

health and safety considerations such as the risk of animals escaping through gates left open and public perceptions.

In other situations, particularly lowland heathland commons and coastal dune sites, grazing may have been lost some time ago. Attempts to re-introduce grazing can be met with hostility from local residents and groups. Considerable upfront time and resources need to be invested in these instances by advisers and land managers in working with local communities and building a joint understanding of how sites can be managed to sustain their biodiversity value. Resources for monitoring and demonstrating the results from grazing introductions are important to show their effectiveness and to help build confidence.

d) Policy background

The Single Farm Payment (to become the Basic Payment Scheme) and agri-environment schemes funded as part of the Common Agriculture Policy (CAP) provide the main means of supporting eligible owners and land managers to graze designated sites. Just over half of SSSI land in England is currently entered into an agri-environment scheme. Long-term there is a high degree of dependency beyond 2021 on the continuation of financial support provided by agri-environment schemes to make grazing management (in keeping with Natura 2000 site objectives) financially viable. Without it grazing management on substantial areas of the Natura 2000 series risks becoming marginal or uneconomic and so would be likely to decline and change markedly and even cease in some cases. Many Natura features require a degree of grazing. The loss of this mechanism would have an adverse on the condition of the Natura series.

The CAP system and state aid rules place limitations on the support available. In particular it is considered that the current system (eg agri-environment schemes) does not adequately take into account the 'whole farm year-round system' (inclusive system that covers both the direct costs of grazing Natura features at the period required and the indirect and associated costs of sustaining a suitable grazing enterprise with capacity and capability through the year eg suitable off-site grazing land, grazing infrastructure, herd type etc.) cost of delivering suitable grazing and management, or reward biodiversity outcomes. As a result it can be difficult for farmers to accommodate grazing changes sought. There also is scope for a clearer link to the positive public benefits which are dependent on grazing (Annex 6). It remains to be seen whether the loss of cross-compliance overgrazing controls (GAEC 9) that limits grazing damage to semi-natural vegetation, and change to a soil protection measure will be problematic.

e) Adviser knowledge and support

Conservation advisers often have limited direct experience in grazing issues, and, achieving the right grazing requires knowledgeable individuals who understand the site and prevailing farming system and what is practical and achievable. This requires investment in training and time on sites and farm holdings to build experience and confidence. Support in decision making and clear escalation routes are required.

d) External influences

Both atmospheric nitrogen deposition and climate change (see Annex 1) with associated mean temperature rises are likely to influence vegetation growth – lengthening the growing season and favouring the growth of competitive species. This may mean that the response of vegetation in a given area to grazing will change over time. Increases in the potential for river and sea flooding or droughts may also disrupt grazing patterns. To mitigate for this will require a degree of flexibility in grazing management on a case-by-case basis.

3. Current policy drivers

The following are the main mechanisms for managing grazing on Natura 2000 sites:

3.1 Regulation

There are several regulatory provisions that are mechanisms for the control of damaging grazing on Natura 2000 sites. Key legislation is listed below (the competent authority is given italics in brackets):

- **Wildlife legislation including Habitats Regulations, Wildlife and Countryside Act 1981 (as amended) and Countryside and Rights of Way Act 2000** – includes powers to serve notices on owner/occupiers of SSSIs that undertake a damaging operation without consent. Third parties intentionally or recklessly causing damage may also be prosecuted (*Natural England*).

- **Cross Compliance** – requires compliance with regulations alongside applying good practice and keeping land in Good Agricultural and Environmental Condition (GAEC). Necessary to maintain eligibility for the Single Farm Payment/ Basic Payment Scheme and CAP Pillar 1 Greening measures (*Rural Payments Agency*). A regulation to limit grazing damage to semi-natural vegetation from overgrazing and supplementary feeding was implemented through GAEC 9. From 2015 overgrazing will be assessed under GAEC 5, which seeks to limit soil erosion risk. This is a weakening of the regulation with respect to the protection of SSSI features (*currently Natural England, probably RPA under revised CAP*).

- **The Commons Act 2006** provides powers to stop unauthorised agricultural activity on registered common land where these activities are detrimental to either the commoners, land owners or the public interest. This power is as yet untested in court (*Natural England*).

3.2 Rural Development Programme in England (RDPE) grants/annual payments

The current Environmental Stewardship (ES) scheme includes a range of land management options that can help support conservation grazing regimes through annual payments. Options are available for upland and lowland habitat features. There are also supplementary payments to support cattle grazing and management activity to improve the effectiveness of grazing, such as shepherding and bracken control. Agreeing a grazing regime, including a stocking calendar on moorland options, is often a key element of an agreement. Countryside Stewardship will replace ES from 2016, and will have similar provisions to support appropriate grazing and other relevant measures for biodiversity and conservation.

3.3 Third Sector

Many sites, particularly in the lowlands, are owned and/or managed by wildlife conservation and heritage bodies, such as Wildlife Trusts and the National Trust. These organisations sometimes own and manage livestock, or enter into effective relationships with livestock owners to secure grazing management on sites. Multiple conservation sites are grazed as part of a network in some cases.

The Grazing Advice Partnership, formerly Grazing Animals Project, is a partnership of farmers, land managers and government and non-government conservation organisations hosted by the Rare Breeds Trust that aims to share information and facilitate conservation training. This includes providing resource material, eg the breed profile handbook, training and discussion fora. Funding is an issue and has reduced from the initial years of the Grazing Animals Project. Natural England is not a current partner.

3.4 Conservation and Enhancement Scheme

Although a relatively small scheme, the Conservation and Enhancement Scheme (CES) is a flexible means of filling 'gaps' in support over small areas of Natura and SSSI sites where it is not possible to use or negotiate a Stewardship agreement but where support to enable grazing management is required. It is administered by Natural England on an 'invitation only' basis because of the limited funding available which is provided through grant-in-aid. The statutory powers for these Agreements were given to Natural England in the Natural Environment and Rural Communities (NERC) Act 2006 (s.7).

4. Elements of a successful grazing schemes

As effective grazing already occurs on a wide range of Natura 2000 sites and SSSIs it is important to learn from successful grazing schemes and identify and disseminate best practice (Calaciura and Spinelli 2008; Hampton 2008). Elements considered to form part of successful grazing schemes are briefly described below:

4.1 Farming system

There needs to be relatively simple and straight forward access to grazing animals and clear arrangements to enable grazing. Where grazing is reliant on a farm business to deliver the objectives of the designation, it is important for it to be practically integrated with the business as far as possible so that the grazing requirements are delivered through an economically sustainable livestock system that meets the farmer's needs.

Where it is not central to the farm enterprise it should not be seen as an add-on. It may provide opportunities for an additional income stream, and to adopt a novel or innovative approach. Even where grazing is in place for site management reasons only, ideally there should be a useful end product that provides a financial return to offset some of the costs.

Grazing solutions including stock ownership varies from site to site, and may change over time. Control over stock by a conservation organisation or dedicated conservation grazier allows for the correct stock which can be conditioned or hefted to sites and moved around accordingly, but requires the right skills and time investment. Continuity of grazing practice and maintenance of livestock handling skills and experience is crucially important.

4.2 Objectives

All parties involved have a clear understanding of objectives and shared vision for achieving them. Advisers are confident in their understanding of the site requirements and what farmers can deliver and communicate this effectively. They are clear on where there is scope for negotiation, to achieve integration of farming and conservation objectives. Opportunities are sought to achieve other ecosystem service improvements and to contribute to improved habitat connectivity and climate change adaptation.

4.3 Evidence

Decisions should as far as possible be based on the best available evidence – this is usually accessed through up to date guidance and specialists. As sites are very variable and subject to different external factors, and because progress towards outcomes may take place over long time-frames, monitoring and surveillance is needed to provide feedback on progress to conservation bodies and other interested parties and stakeholders. This will include taking into account the views of the land manager or farmer as well as more formal site monitoring. Since change can be slow, a strategic approach to evidence gathering is necessary, to allow advisers to be able to demonstrate the benefits of grazing to sceptics. In cases where grazing is re-introduced baseline monitoring and a risk assessment for sensitive site features is good practice.

4.4 Investment and financial support

Sustainable grazing for conservation is often reliant on adequate financial support from agri-environment schemes, and ideally also the ability to make a return as part of a viable farming business. Short-term investment via agri-environment schemes and other mechanisms (LIFE, partnership projects etc.) should aim to embed long-term, sustainable systematic change. Where sites are fragmented and no longer part of a sustainable farming system, achieving continuity of grazing is likely to be reliant on a range of sources of support, requiring co-ordination via a partnership and often a manager or project officer. Where grazing is being re-introduced start-up costs may include infrastructure such as handling facilities, water supply and fencing, as well as the purchase of stock. Many grazing projects achieve a return from the grazing system through sale of meat, young stock, wool etc that can off-set some of the on-going costs.

4.5 Knowledgeable advisers and livestock managers

Advisers are seen as knowledgeable professionals, operating fairly and consistently. They have access to sound technical training as well as training in farm business and systems as well as transferable skills, and are able to spend time on the ground. They are able to confidently explore options with and influence farmers to deliver the desired outcomes and are supported in this role by managers. The effective transfer of knowledge and skills amongst livestock managers, from older generation of farmers, traditional breeds' societies and graziers experienced in managing low intensity is also crucial.

5. Gaps/weaknesses in current mechanisms and approaches

5.1 Evidence

The recent Upland Evidence Review (Natural England 2013) summarised evidence on different aspects of grazing on moorland biodiversity and ecosystem services, including the role of different livestock types, the impact of stocking rates and the effects of grazing removal and abandonment. This has informed the development of conservation recommendations. However there are still significant gaps in evidence, for example, around timescales for recovery to Favourable Condition and identification of undergrazing. There is a lack of understanding of the impacts of grazing on spatially diverse moorland and mosaics, and how differential grazing rates can be achieved. Similarly the interaction between burning and grazing on both upland and lowland heath requires further investigation.

Much study has been about maintaining broad habitat condition, for example dwarf shrub heath. Common Standards Monitoring (CSM) typically shows that indicator species are absent, or present at lower than required frequency. There is a lot of experience of re-introducing heather to grass moorland and cotton grasses on peat and on-going development of techniques to re-introduce *Sphagnum* moss species but there are gaps in knowledge over other key species including other dwarf shrubs and peatland and wetland plants. Trajectories and timescales of change are poorly understood – there is a need for clearer milestones of progress for different habitats, and realistic views of what change is achievable within given timescales. However in practice this is very challenging given the high number of variables often involved.

There is a need to build on work underway to incorporate species requirements into habitat management, through the creation of niches and how this is reflected in Favourable Condition Tables. The adoption of the 'mosaic approach' as part the new Countryside Scheme requires monitoring and evaluation.

5.2 Advice

Greater support is required, particularly where traditional farming has changed with the demise of local livestock farming for local grazing partnerships to advise and support land managers in delivering Natura site objectives. These are local partnerships of land owners, graziers and conservation organisations who collaborate in matching graziers with land in need of stock grazing (e.g. Lincolnshire Coastal Grazing Marshes Project, Cotswold Grazing Animals Project; Wyre Forest Landscape Partnership and Stock Keep).

There also needs to be recognition of the considerable time that advisers can spend on establishing grazing agreements on commons or introducing grazing and related infrastructure to abandoned sites, including managing complex and difficult relationships.

5.3 Incentives

Currently there is a lack of incentives to support livestock farming systems that deliver sustainable grazing to maintain and improve Natura 2000 sites, especially where major capital investment is required to support changes from sheep to mixed/cattle grazing systems. Achieving the desirable grazing levels on the area of a farm holding in

a Natura 2000 site may place limits on or require changes to the farm system or structure, the true costs of which may not be covered by parcel-based agri-environment payment. These "opportunity costs" need to be reflected more effectively in agri-environment scheme payments, which consider the whole-farm system. The opportunity for a "payment by results" approach, which is less prescription-based and potentially allows farmers and graziers greater input and flexibility in achieving the objectives for a site, could be explored in future incentive schemes. There also needs to be greater complementarity of funding streams, including use of different funding measures of the Rural Development Programme, to support such changes through training, demonstration, capital investments, marketing, branding and business planning support.

Further consideration needs to be given to potential approaches to support, and in some cases introduce, conservation grazing on small/isolated sites where investment in livestock infrastructure, at the holding level, to support grazing is uneconomic.

5.4 Regulation

The bureaucratic burden of moving from sheep to cattle requires much more paperwork, and is subject to more restrictions, for example Bovine TB testing. The need for Secretary of State approval for fencing on common land can add an extra time burden to setting up grazing schemes in some instances.

6. Future Strategy

Given that grazing management is necessary for the continued existence and conservation of a range of key habitats and species in Natura 2000 sites a strategic approach to grazing is important. The achievement of the desired grazing management is typically the consequence of a large number of decisions informed by local circumstances and conditions. The optimal grazing regime often varies considerably between habitats types and sub-types and on a site-by-site basis, depending on factors such as soil, vegetation, altitude, climate, and management history. This means it is important to determine site level aims and objectives for the both the Natura site concerned and associated farm businesses. Moreover management planning benefits from the input of both expert conservation knowledge and local farming knowledge.

Central to a strategic approach to improve grazing outcomes on the Natura 2000 sites are graziers. Given that livestock farming has changed dramatically over recent decades, in response to both political and market forces and is set to continue to change, it is important that farmers and land managers who are already carrying out good management are recognised and provided with adequate support in their role in conserving and managing these habitats. Ensuring graziers (and their grazing systems) are appropriately supported financially with incentives and with site tailored advice underpinned by evidence and an understanding of the conservation objectives is crucial. Below are recommended strategic measures that would contribute such an approach:

- **Improved support for agricultural grazing systems necessary for Natura 2000 sites (eg off-Natura site support; breeds; grazing infrastructure; training)**. Advocacy is required at the national level for broader agricultural support measures related to Natura sites that takes a whole farm approach and considers farm businesses in the round, rather than only focussing on the management of parcels where there is identified interest. There should be adequate recognition and support for extensive livestock farming system (that include off-wintering land, layback land, meadows etc.) geared to sustainable grazing for biodiversity and ecosystem service benefits. There may be opportunities to link this to High Nature Value (HNV) farming initiatives and the Rural Development Programme indicator of High Nature Value Farmland. The cover for extra capital and incidental costs of cattle systems also needs to be considered.

- **Ensure the role of grazing in meeting Natura 2000 site conservation objectives is understood and appropriate monitoring is undertaken**.

- Understand the role of grazing in delivering the Natura 2000 site objectives, in terms of habitat condition and species requirements, for each site;
- Identify conflicts and priorities, and opportunities to restore or create habitats and mosaics which may be absent or under-represented but compatible with site objectives.
- Assess current (site level) grazing provision and gaps, identify livestock sources and flexibility/scope within current systems, consider alternatives and what the minimum acceptable management might be.
- Review the use of grazing tools such as fencing, shepherding, water supply, feeding etc.
- Ensure monitoring programmes are fit for purpose, to provide feedback on the effects of grazing and progress towards condition targets.

- **Support and encourage graziers and improve the quality of advice provided on conservation grazing management.** This will involve the development of advice packages, training and case study material for land managers and farmers.

  - Provide training for Natural England and other conservation grazing advisers in understanding and setting objectives, and in farming and livestock systems. There should also be opportunities for joint training of advisers and farmers to help build respect and trust. Consider the need for a grazing network and regional lead interest Advisers.
  - Provide agreement holders with appropriate advisory support over the duration of existing HLS agreement holders on Natura 2000 sites and where appropriate review the grazing management.

- **Ensure Countryside Stewardship is appropriately targeted and resourced to support grazing on Natura 2000 sites. It is important to maintain the ability to deliver flexible and adaptive grazing in the implementation of the new Countryside Stewardship scheme.**

- **Identify, prioritise and address research needs that aim to improve the effectiveness of grazing and our understanding of grazing-related habitat change.**

- **Identify opportunities for LEADER or LIFE type funding in co-ordination with agri-environment payments, with the former possibly providing payment for livestock purchase and farm infrastructure**. Consider other ways to incentivise farmers eg no charge for grazing licences, reduce rent if targets for sward heights, nesting birds.

- **Consider developing a prioritised list of Natura 2000 sites that require focused attention.** Explore the possibility of a national strategy to identify and secure external funding, and deliver locally to address priorities

7. Priority Actions

The table below includes proposals for 10 high level priority actions and associated sub-actions to improve grazing outcomes on Natura 2000 sites. Many of these are based on developing or improving current approaches or mechanisms. Recommended actions and next steps identified are not definitive nor are they necessarily agreed commitments or resourced, but they aim to inform future programmes. Oversight of the theme plan actions will be coordinated through the IPENS After-LIFE steering group.

Table 4 Priority actions

Action no.	Recommended Action and sub-actions	Timescale	Lead Body
1.	**Assess current (site level) grazing provision and deficiencies; identify livestock sources and flexibility/scope within current systems; consider alternatives and what the minimum acceptable management might be. Review the use/support required for grazing tools such as fencing, shepherding, water supply feeding etc.**		

Action no.	Recommended Action and sub-actions	Timescale	Lead Body
1A	Minimise the effective barriers to grazing Natura 2000 sites - review the practical in-combination impacts of livestock regulations, movement restrictions, and policies etc. on decision making and behaviour of livestock graziers		
2. Ensure protected site monitoring programmes are able to provide 'fit for purpose' feedback on the effects of grazing and progress towards condition targets.			
2A	Ensure that Commons Standards Monitoring (CSM) adequately reflect and integrate the habitat requirements (where grazing dependent) of SPA/ SAC species	2019	Natural England
2B	Explore utilising the existing Long-term Monitoring Network of designated sites to acquire a better understanding of the contribution/ role of grazing management in reaching site condition	2016	Natural England
2C	Examine how effectively the existing Environmental Stewardship Monitoring and Evaluation programme (ESME) assesses grazing related impacts/outcomes on NATURA 2000 sites. Feed the findings into the design and operation of the agri-environment programme.	2016	Natural England/Defra
3. Promote an 'adaptive management' approach (grazing levels and systems need to be flexible to respond to monitoring findings and changing conditions); influence the remaining stages of the development and implementation of Countryside Stewardship scheme it results in flexible and adaptive grazing in practice.			
3A	Ensure Countryside Stewardship scheme agreements and their implementation (eg verification requirements) allow for appropriate flexibility to adapt grazing management as required to achieve Natura 2000 site conservation goals.	2015 -2021	Natural England/Defra/Rural Payments Agency
3B	Provide existing HLS agreement holders with appropriate and sometimes enhanced advisory support to existing HLS agreements on Natura 2000 sites and review grazing management where required.	2015-2020	Natural England
4. Develop advice packages, training and case study material for land managers and farmers			
4A	Explore the opportunity for the Grazing Advice Partnership project (GAP) or a similar initiative to develop and disseminate enhanced advice and support tools for graziers, Natural England, Voluntary Conservation Bodies, and livestock farming organisations.	2016	Natural England/Voluntary Conservation Bodies/Farming & Livestock Industry bodies/Rare Breeds Trust
4B	Learn the lessons from existing examples of successful sustainable grazing good practice and effectively disseminate these.	2015-2018	Natural England/Voluntary Conservation Bodies/Grazing Animal Project

Action no.	Recommended Action and sub-actions	Timescale	Lead Body
5. Provide training and support for Land Management Advisers in understanding and setting objectives, and in farming and livestock systems. There should also be opportunities for joint training of advisers and farmers to help build respect and trust.			
5A	Develop and rollout a skills framework to improve the grazing related decisions and advice offered by conservation advisers (Natural England and other partners) to graziers of Natura 2000 sites. This may include national training courses on grazing; moorland conservation grazing recommendations developed following the Uplands Evidence Review; better access to experts for complex grazing cases; Area team 'grazing champions'; use of existing habitat networks; use of Grazing Animal Project advice packages.	2015 -2020	Natural England/ Farming & Livestock Industry Bodies, eg The Foundation for Common Land
5B	Consider the merits of an internal Natural England network to cover grazing and lead regional grazing advisers	2015 - 2016	Natural England
5C	Seek to improve the consistency of approach in negotiating and agreeing grazing management in support of Natura 2000 habitats including by a review of Quality Assurance procedures.	2015 - 2016	Natural England
6. Identify, prioritise and address research needs that aim to improve the effectiveness of grazing and our understanding of grazing-related habitat change			
6A	Investigate the benefits and dis-benefits of different stock species, types and breeds on Natura 2000 habitat and species features.	2015-2020	Natural England/Defra
6B	Investigate the ecological implications of cutting management versus grazing on the condition of Natura species and habitats	2015-2018	Natural England/Defra
7. Seek opportunities for delivery of other ecosystem services arising from, or compatible with, grazing-based 'good' habitat condition including water resource management and carbon storage.			
7A	Examine the opportunities for improved branding and marketing of livestock produce from Natura 2000 sites. Initially, review past experiences of marketing and branding and the lessons learnt.	2015-2020	Natural England/ Farming & Livestock Industry Bodies/Voluntary Conservation Bodies/Grazing Animals Project/Defra
8. Identify opportunities to pilot the use of LEADER or EU LIFE type funding in co-ordination with agri-environment payments, with the former possibly providing payment for livestock purchase and farm infrastructure. Consider and trial alternative ways to incentivise farmers eg no charge for grazing licences; reduced rents where site condition targets are met eg targets for sward heights or number of nesting birds.			
8A	Explore the development of a prioritised list of Natura 2000 sites that require investment in grazing order to meet favourable condition. Explore the possibility of a national strategy to coordinate and secure external funding, and support local delivery to address identified priorities.	2015-2017	Natural England/Defra/ Voluntary Conservation Organisations/local Partnerships

Action no.	Recommended Action and sub-actions	Timescale	Lead Body
9.	**Review and assess the need for focused agricultural grazing support measures related to Natura 2000 sites as a part of the Rural Development Programme for England to achieve and sustain appropriate grazing especially where major capital investment is required to support changes from sheep to mixed/cattle grazing systems. Review whether the true opportunity costs related to grazing systems need to be reflected more effectively in agri-environment scheme payments, and consider alternative approaches such as "payment by results". Seek greater complementarity of funding streams, including use of different funding measures of the Rural Development Programme, to support such changes through training, demonstration, capital investments, marketing, branding and business planning support.**		
9A	Promote and communicate the important role grazing has in delivering nature conservation objectives for Natura 2000 sites.	2015-2016	
9B	Review and assess the need for focused agricultural grazing support measures related to Natura 2000 sites as a part of the Rural Development Programme for England to achieve and sustain appropriate grazing systems. Consider alternative business-focused approaches, such as "payment by results". Seek to develop holistic packages of support to deliver farm business change to more cattle-based or mixed systems, covering aspects such as training, demonstration, capital investments, marketing, branding and business planning support. Consider further potential approaches to support conservation grazing on small/isolated sites where investment in livestock infrastructure, at the holding level, to support grazing is uneconomic.	2015- 2018	Defra/Farming & Livestock Industry Organisations/land-scape and conservation bodies
9C	Review the linkages between Defra livestock policy and management requirements of the Natura 2000 series.	2015-2016	Defra/Natural England
10.	**Identify opportunities, using a risk based approach, for improved public engagement on sites where grazing changes are proposed, especially situations where there may be concern or opposition to grazing. Consider the scope to develop community-oriented projects and seek external funding (eg HLF) for those sites of greatest priority or potential.**		
10A	Where grazing needs to be re-introduced, promote and support community engagement to gain positive recognition of grazing as a conservation tool eg apply the principles in the 'Common Purpose: A guide to agreeing management on Common Land'.	2015-2020	Natural England

Annex 1. IPENS Theme Plans

The table below provides hyperlinks to the suite of IPENS theme plans, which are available on the Natural England publication catalogue.

Theme plan	Hyperlink
Atmospheric nitrogen	http://publications.naturalengland.org.uk/publication/6140185886588928?category=5605910663659520
Climate change	http://publications.naturalengland.org.uk/publication/4954594591375360?category=5605910663659520
Diffuse water pollution	http://publications.naturalengland.org.uk/publication/5848526737113088?category=5605910663659520
Grazing	http://publications.naturalengland.org.uk/publication/4839898496368640?category=5605910663659520
Habitat Fragmentatio	http://publications.naturalengland.org.uk/publication/5004101806981120?category=5605910663659520
Hydrological functioning	http://publications.naturalengland.org.uk/publication/6400975361277952?category=5605910663659520
Inappropriate coastal	http://publications.naturalengland.org.uk/publication/6371629661683712?category=5605910663659520
Invasive species	http://publications.naturalengland.org.uk/publication/6130001713823744?category=5605910663659520
Lake restoration	http://publications.naturalengland.org.uk/publication/5583022327857152?category=5605910663659520
Public access and	http://publications.naturalengland.org.uk/publication/6621454219083776?category=5605910663659520
River Restoration	http://publications.naturalengland.org.uk/publication/5478339747774464?category=5605910663659520

Annex 2. Key Evidence Sources

Cumulus Consultants Ltd, (2012) Changing livestock numbers in the UK Less Favoured Areas – an analysis of likely Biodiversity Implications: Final Report for the Royal Society for the Protection of Birds

Kirkham, F.W. (2006). The potential effects of nutrient enrichment in semi-natural lowland grasslands through mixed habitat grazing or supplementary feeding. Scottish Natural Heritage Commissioned Report No. 192 (ROAME No. F04AA101/2)

Martin, D., Fraser, M.D., Pakeman, R.J. & Moffat, A.M. (2013). *Natural England Review of Upland Evidence 2012 - Impact of moorland grazing and stocking rates.* Natural England Evidence Review, Number 006.

Rodwell, J.S., Morgan, V., Jefferson, R.G. & Moss, D. (2007). The European context of British Lowland Grasslands. *JNCC Report*, No. 394.)

Calaciura B & Spinelli O. (2008). Management of Natura 2000 habitats. 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (*important orchid sites). European Commission)

Hampton M. (2008). Management of Natura 2000 habitats. 4010 Northern Atlantic wet heaths with *Erica tetralix*. European Commission

Natural England (2014) Re-introducing natural grazing: Natural England evidence EIN002

Annex 3. SIPs with grazing related issues

Table A - SIPs featuring grazing related issues recorded as a 'Pressure'*

SIP Name	Grazing related issue (by issue category)
River Eden	Agricultural management practices
Culm Grasslands	Agricultural management practices
Ashdown Forest	Change in land management
Phoenix United Mine and Crow's Nest	Change in land management
The Wash and North Norfolk Coast	Change in land management
Culm Grasslands	Change in land management
Godrevy Head to St Agnes	Change in land management
North Pennine Dales Meadows	Inappropriate CSS/ESA prescription
Borrowdale Woodland Complex	Inappropriate grazing
Lake District High Fells	Inappropriate grazing
North Pennines Group	Inappropriate grazing
Pewsey Downs	Inappropriate grazing
Ullswater Oakwoods	Inappropriate grazing
Cerne & Sydling Downs	Inappropriate scrub control
Ingleborough Complex	Invasive species
Cannock Extension Canal	Overgrazing
Craven Limestone Complex	Overgrazing
Fenn's, Whixall, Bettisfield, Wem & Cadney Mosses	Overgrazing
Fens Pools	Overgrazing
Lydden & Temple Ewell Downs	Overgrazing
Norfolk Valley Fens	Overgrazing

North Pennine Dales Meadows	Overgrazing
Peak District Dales	Overgrazing
River Itchen	Overgrazing
South Pennine Moors	Overgrazing
Wye and Crundale Downs	Overgrazing
Cerne & Sydling Downs	Overgrazing
Dartmoor	Overgrazing
Dee Estuary/Aber Dyfrdwy & Mersey Narrows	Overgrazing
Dungeness	Overgrazing
Ingleborough Complex	Overgrazing
Ox Close	Overgrazing
Breckland	Undergrazing
Breney Common and Goss & Tregoss Moors	Undergrazing
Broadland	Undergrazing
Cannock Chase	Undergrazing
Dartmoor	Undergrazing
Dorset Heaths	Undergrazing
Dover to Kingsdown Cliffs	Undergrazing
Drigg Coast	Undergrazing
East Devon Heaths	Undergrazing
Epping Forest	Undergrazing
Folkestone to Etchinghill Escarpment	Undergrazing
Humber Estuary	Undergrazing
Lewes Downs	Undergrazing
Mells Valley	Undergrazing

Morecambe Bay Pavements	Undergrazing
Norfolk Valley Fens	Undergrazing
North Pennine Dales Meadows	Undergrazing
Peak District Dales	Undergrazing
Portland-Studland & St Albans-Durlston	Undergrazing
River Itchen	Undergrazing
Rooksmoor	Undergrazing
Roydon Common and Dersingham Bog	Undergrazing
Salisbury Plain	Undergrazing
Thames Basin	Undergrazing
Avon Gorge Woodlands	Undergrazing
Cerne & Sydling Downs	Undergrazing
Craven Limestone Complex	Undergrazing
Ingleborough Complex	Undergrazing
North Somerset & Mendip Bats	Undergrazing
Polruan to Polperro	Undergrazing
River Wye	Undergrazing
Rodborough Common	Undergrazing
Teesmouth & Cleveland Coast	Undergrazing
Tintagel Marsland Clovelly Coast	Undergrazing

Table B - SIPs featuring grazing related issues recorded as a 'Threat'* only

SIP Name	Grazing related feature (by issue category)
Morecambe Bay	Biological Resource Use
Asby Complex	Change in land management
Dartmoor	Change in land management
Exmoor & Quantock Oakwoods	Change in land management
Fontmell & Melbury Downs	Change in land management
Mole Gap to Reigate Escarpment	Change in land management
Morecambe Bay	Change in land management
North Pennines Group	Change in land management
River Lambourn and Kennet-Lambourn Floodplain	Change in land management
The Lizard	Change in land management
The Stiperstones and The Hollies	Change in land management
Walton Moss	Change in land management
Yewbarrow Woods	Inappropriate grazing
Shortheath Common	Inappropriate scrub control
South Devon Shore Dock	Overgrazing
Beast Cliff-Whitby (Robin Hood's Bay)	Undergrazing
Bracket's Coppice	Undergrazing
Butser Hill	Undergrazing
Castle Hill	Undergrazing
Fen Bog	Undergrazing
Great Yarmouth Winterton Horsey	Undergrazing
Kingley Vale	Undergrazing

Lower Derwent Valley	Undergrazing
South Devon Shore Dock	Undergrazing
South Pennine Moors	Undergrazing
West Dorset Alder Woods	Undergrazing

* An issue affecting or impacting the condition of a Natura 2000 site is a Pressure. An issue is judged a Threat when it is not currently affecting the condition of a site but there is risk/ threat it could.

Annex 4. Issue description, mechanisms and actions identified in SIPs featuring undergrazing, overgrazing and inappropriate grazing

Table A – Issue description, mechanisms and actions identified in SIPs featuring undergrazing (based on data available 1 December 2014)

SIP Name	Undergrazing Issue Description	Mechanism	Action Description
Avon Gorge Woodlands	Grazing has been introduced into two parts of the site but the vast majority of it is ungrazed at present. The majority of the North Somerset side is ancient woodland and not in need of grazing. But the open quarries on the North Somerset side and further areas of the grassland on the Bristol side need to be looked at in terms of sustainable management options - grazing animals being one of them (although this will need very careful planning, consideration, funding and ongoing management). The lack of grazing on these open areas is resulting in loss of habitat, pressure from scrub / invasive species and the need for expensive mechanical management.	Habitat creation/ restoration strategy	Development of an Avon Gorge-wide 'Grazing management plan'. Development of this plan could be coordinated by a new Project Officer role who could potentially become part of an expanded Avon Gorge and Downs Wildlife Project looking at the management of issues affecting the whole Gorge.
			Delivery of the Avon Gorge-wide 'Grazing management plan'. Designed, funded and delivered by all key landowners and stakeholders. With increased and additional organisational funding and external 'other' funding to ensure the delivery can be achieved and sustained long term.
Beast Cliff-Whitby (Robin Hood's Bay)	Much of the cliff area is too steep to graze, however, it is important that the more accessible areas are continued to be grazed.	Advice; Investigation	Negotiate any necessary changes to grazing levels, subject to the outcomes of monitoring.
			Monitoring the cliff land to ensure grazing levels are appropriate.
Bracket's Coppice	The southern parcel of the SAC does not have suitable land management secured. Levels of grazing are currently insufficient.	Mechanism not identified/ develop mechanism	To enable sufficient grazing on the site, infrastructure should be installed to provide winter housing for livestock. (This is not available through Countryside Stewardship / HLS)
Breckland	Undergrazing, both by domestic livestock and wild rabbits affects the majority of grassland & heathland sites throughout the SPA/SAC, which puts at risk the quality of SAC habitats and their characteristic species, including SPA bird species.	Advice/ Rural Development Programme for England (RDPE)	Implement appropriate grazing regimes of domestic livestock.
			Increase/maintain the intensity of grazing by both domestic livestock and wild rabbits to create open, tightly grazed swards.

Breney Common and Goss & Tregoss Moors	A severe lack of grazing over a prolonged period has resulted in extensive areas being dominated by rank sward types with a poor structure. In addition this is partially responsible for the extensive spread of willow, gorse and birch scrub and bracken.	Mechanism not identified/ develop mechanism; National Nature Reserve Management Plan; Rural Development Programme for England (RDPE)	Installation of two cattle grids at Helman Tor.
			Introduce grazing to undergrazed areas.
			Fencing of common land boundaries on Goss & Tregoss Moors.
			Additional fencing at Breney Common and the relocation of fencing at Red Moor along the southern boundary.
Broadland	Undergrazing is an issue on a number of sites within the Broads that have been historically grazed or require grazing. Often the issues are associated with the difficult ground, the difficulty of implementing grazing infrastructure, and/ or the lack of suitable stock. This can also impact on dyke margins, as is the case at Muckfleet Marshes.	Rural Development Programme for England (RDPE)	Work with landowners and/or graziers to implement appropriate grazing on undergrazed sites.
Butser Hill	Condition assessment of some areas suggested that there were distinct areas where the sward height was tussocky and above target. Also, higher than target levels of leaf litter were reported. This suggests that grazing is uneven, or limited, across the site. The importance of rabbits as a grazing animal is noted, but the population has declined markedly due to disease outbreaks. Uneven grazing carries the risk of the sward becoming too tall and grass-dominated, shading out the forbs that are characteristic of the chalk grassland sward. Some areas are presently managed by mowing. Increased stocking with sheep or cattle in selected areas, including improved provision of grazing infrastructure such as drinking troughs, would help to overcome the problem by targeting specific areas. There is also evidence from the most recent condition assessment to suggest that scrub is encroaching into the sward. As with the 'Inappropriate scrub control' issue, grazing could help to reduce scrub incursion. Grazing is a suitable tool for delivery of improvements in condition in areas of former conifer plantation that have been cleared and targeted for chalk grassland restoration. There is an interest in low-intensity grazing with mixed livestock for invertebrate interest at the site (primarily Duke of Burgundy Butterfly).	Investigation; Rural Development Programme for England (RDPE)	Reduce the impacts of undergrazing by undertaking a feasibility study for management of invasive scrub and grasses. Determine the most appropriate means of control, including intensification of grazing in specific areas, stock selection and density, timing of grazing activity, introduction of grazing in areas where this does not presently occur, mechanical means of management including mowing or cutting. The site has historically had high grazing pressure from rabbits. Grazing management must account for the decline in their numbers. Grazing regime should also ideally take into consideration the importance of the site for Duke of Burgundy (and SSSI notified invertebrate assemblage).
			HLS amendment may potentially be required; most likely additional capital works to enable suitable infrastructure to be installed, to support grazing with cattle (dependent on the outcome of action 2A).
Cannock Chase	Cannock Chase Special Area of Conservation needs conservation grazing by appropriate animals to build on the restoration of the dry and wet heathland habitats and address a number of management issues. Grazing animals such as cattle will diversify the physical structure of the heathland habitats by creating habitat mosaics across the site	Major Landowners Group land ownership activities; Non-Natural England funded site management plan; RDPE	Draw up and implement a conservation grazing plan for Forest Enterprise SAC land.
			Draw up and implement a conservation grazing plan for Ministry of Defence SAC land.

	that in turn will benefit the special fauna at Cannock Chase. The presence of the plant fungal disease *Phytophthora pseudosyringae* on bilberry has stalled the reintroduction of grazing to the main body of the Chase due to time and resources being diverted to controlling this little-known disease but also due to concerns that grazing would spread the disease around the site. After five years of disease monitoring and treatment, we have a better understanding of the disease and how it moves around County land. It is now time to use and build on this research, and to build on the grazing research already carried out, to devise a grazing plan for Cannock Chase that will pose no greater risk		Develop a conservation grazing plan for Staffordshire County Council SAC land with built-in biosecurity to minimise spread of Phytophthora pseudosyringae. Carry out public consultation on the plan in line with Commons Act legislation.
			Implement the conservation grazing plan on Staffordshire County Council SAC land with built-in biosecurity to minimise spread of *Phytophthora pseudosyringae*.
Cerne & Sydling Downs	A certain amount of positive micromanagement takes place on the NNR, and has proved beneficial, however undergrazing is evident on other areas resulting in damage to the SAC features by rank swards.	Advice; enforcement; engagement	Enforcement action and or negotiation with the landowner to adjust grazing regimes.
			Seek a management agreement where necessary, and in combination with enforcement procedure.
			Walkover survey of the whole site to identify overgrazed areas and establish a baseline.
			Where SAC land is not under agreement, promote and set up agri-environment agreements.
Craven Limestone Complex	Undergrazing is noted to be a problem on several sites. Further research is required on appropriate grazing levels with cattle. No grazing management is in place near land at Hawkswick, Littondale. This means that the calcareous grassland is rank and losing species interest.	Investigation; Regulation; Rural Development Programme for England (RDPE)	Research on appropriate cattle grazing levels on limestone grassland.
			If Action [ROW 30] fails, consider a management scheme/notice under Section 28J/K of the Wildlife and Countryside Act (as amended) to require suitable grazing management where impacts on features are observed.
			Bring an area of limestone grassland at Hawkswick Cote into grazing management.
Dartmoor	Breeding sites for Southern damselfly, particularly at Moortown Bottom, are overgrown and require grazing management and targeted vegetation management to control vegetation.	Advice	Improve grazing management, so that Southern damselfly breeding sites are grazed to produce ideal conditions for the species.
Lower Derwent Valley	The grassland has a history of aftermath grazing. Increasingly, land managers do not have their own stock, resulting in sporadic aftermath grazing. This can impact both on the botanical interest of hay meadows and habitat structure important for bird interests.	Advice	Assisting landowners in sourcing grazing for Ings meadows by acting as an intermediary between landowners and graziers (annual commitment)

Dorset Heaths	Generally grazing has now been successfully introduced on most of the larger heathland sites but there remain some ungrazed areas (about 1350ha, usually where the greatest practical difficulties are present) which would benefit from the introduction of an extensive grazing regime. Actions have been split to reflect the different delivery mechanisms required for different land managers.	Major Landowners Group land ownership activities; Rural Development Programme for England (RDPE); National Nature Reserve Management Plan;	Bring approximately 450 ha currently ungrazed into appropriate grazing management (applies to areas managed by RSPB).
			Bring approximately 90 ha currently ungrazed into appropriate grazing management (applies to areas managed by Forestry Commission at Hyde Bog and Ramsdown, with Dorset Wildlife Trust and Amphibian and Reptile Conservation Trust).
			Bring approximately 50 ha currently ungrazed into appropriate grazing management (applies areas managed by Natural England within National Nature Reserves).
			Bring approximately 300 ha currently ungrazed into appropriate grazing management (applies to areas managed by voluntary conservation organisations at Town and Sopley Commons, and areas on South Haven peninsula, Studland).
Dover to Kingsdown Cliffs	Small areas of the site in private ownership are insufficiently grazed. Grazing needs to be undertaken to retain chalk grassland habitat.	Existing local project	Ensure relatively small areas are grazed. Given the small size of the land ownership involved managing this through the existing local partnership is most appropriate way to address this issue.
Drigg Coast	Serious neglect of dune grazing over many years and a massive decline in rabbit population have contributed to over-stabilisation and rank grasses dominating dune grasslands and slacks.	Advice; enforcement; Major Landowners Group land ownership activities; Non-Natural England funded site management plan; Regulation	New tenancy/grazing agreement likely to be the most effective means of managing cattle grazing on Drigg Dunes.
			Ongoing compliance monitoring of existing Higher Level Environmental Stewardship Scheme agreements.
			Grazing needs to be introduced on the dunes within Eskmeals Range.
			If HLS fails to deliver sufficient grazing then regulation may be required to achieve favourable grazing management on Drigg Dunes.
			Grazing needs to be introduced on the dunes within Eskmeals Range.
East Devon Heaths	Grazing is an essential component of the management to diversify the physical structure of the heathland habitats. Some areas are not being adequately grazed,	Rural Development Programme for England (RDPE)	Ensure appropriate fencing and stocking levels are in place via an agri-environment scheme with the RSPB.

	resulting in structural homogeneity and lack of age diversity.		Ensure appropriate fencing and stocking levels are in place via an agri-environment scheme with the Clinton Devon Estates.
			Ensure appropriate fencing and stocking levels are in place via an agri-environment scheme with the Devon Wildlife Trust.
Epping Forest	The quality and diversity of the SAC features requires targeted management best achieved through grazing to: minimise scrub invasion; minimise robust grass domination, and maximise the species diversity of heathland plant communities.	Partnership Agreement	Ensure that sufficient resources are available for appropriate grazing levels to achieve and maintain favourable conservation status for SAC features. This requires funding and stock management.
Fen Bog	The main area is dependent upon stock from extensively grazed adjacent moorlands and as the site is common land it cannot easily be fenced to control stock just on the area of SAC. Land adjacent to the railway is fenced off and cannot be grazed leading to high thatch levels which could be inhibiting liverworts and grasses (particularly *Molinia caerulea*). Flush vegetation could be limited by rush growth.	CES; Rural Development Programme for England (RDPE)	Set in place a cutting programme in areas where grazing is restricted.
			To control purple moor grass *Molinea caerulea*, investigate feasibility, and if appropriate undertake trial burning on a small scale when the ground is frozen.
			Investigate the feasibility of fencing the eastern side of the site, and pursue if funding and common land consent are obtainable.
Great Yarmouth Winterton Horsey	Undergazing is an issue at the northern end of Winterton, both in terms of the quality of the fixed dune grassland/ heath and optimising conditions for natterjack toads.	Rural Development Programme for England (RDPE)	Increase grazing at the northern end of the site to enhance coastal dune heathland.
Humber Estuary	Lack of recent grazing by livestock has resulted in suitable habitat no longer being maintained for roosting/loafing SPA birds including oystercatcher and wigeon.	Existing Local Project	An extension to the outer Humber grazing project organised by the Yorkshire Wildlife Trust. This will be carried out between 2014 and 2017, but we will look to extend this.
			Introduce grazing to affected areas, and/or cutting management. This should be helped by the delivery of the new Agri-environment scheme which we are hoping will be more flexible
Ingleborough Complex	Larger or more complex management units often support multiple notified features each with its own optimal management requirements. As a consequence either the scarcest habitat(s) must be prioritised to the detriment of others or some agreed level of compromise arrived at where conditions remain short of perfect. Examples would be that to get tree cover and emergent	Advice, Rural Development Programme for England (RDPE)	Negotiate with landowners/ managers for more appropriate levels of grazing for notified interest feature(s).
			Seek to place land under appropriate management within Countryside Stewardship or that scheme's future successor.

	vegetation on limestone pavement short of fencing or cattle only grazing (most farms are sheep only or primarily sheep), grassland habitats will be undergrazed. Where cattle can be used flushes may get poached as the animals seek drinking water.		Agree site and possibly unit specific targets on the priority of individual features and monitoring standards to apply, especially where each may have conflicting requirements.
Morecambe Bay Pavements	The main grazeable habitat - calcareous grassland - requires appropriate grazing. On sites with dense swards (that build up after no grazing periods), cattle grazing (rather than sheep, or no grazing at all) is required	Rural Development Programme for England (RDPE)	Introduction of cattle grazing onto grasslands that either had no grazing, or are sheep grazed. Introduction of cattle grazing onto grasslands that had sheep grazing only.
Norfolk Valley Fens	There is a loss of appropriate structural composition through undergrazing. One site is complex to fence (Fo) needs Secretary of State approval) and it is difficult to secure appropriate stocking rates due to ground conditions, terrain and a mix of habitats (Fo & Ea).	Advice	Foulden Common: secure permission for fencing on common land
North Pennine Dales Meadows	Lack of aftermath grazing, loss of cattle on farm holdings reducing disturbance, and leading to a change in the sward. In some cases this is because the land is not managed as a farm business. There is also a localised issue of erratic sheep grazing management by a licensee.	Rural Development Programme for England (RDPE)	Incentivise the use of cattle as an aftermath grazing tool or implement, where necessary through the use of management scheme/notice.
Peak District Dales	Although associated with the issue of inappropriate scrub control, undergrazing is not confined to it. Many dales that are not undergrazed still have a scrub control issue, and some dales which do not have a scrub issue are undergrazed. This issue is strongly linked to inappropriate stock.	Regulation; Rural Development Programme for England (RDPE) ; Mechanism not identified/ develop mechanism;	Expand project to purchase and lease traditional breed stock to agreement holders (also relevant to overgrazing issue). Where grazing is required, negotiation and, if necessary use of SSSI regulation is required using S28K/J of the Wildlife & Countryside Act (management schemes). Negotiate agri-environment agreements on land not currently in HLS agreement to secure appropriate grazing levels.
Polruan to Polperro	The hard cliff habitat interest features are being maintained by the influence of the weather and generally deemed to be in favourable condition where they occur. However there is a risk that bracken, bramble, ivy and scrub will eventually start to invade communities at their edges without intervention from grazing or cutting.	Rural Development Programme for England (RDPE)	Increase the extent of cattle grazing

Portland-Studland & St Albans-Durlston	Cessation of, or reduced grazing on all but the most exposed slopes leads to a loss of species diversity in the calcareous grassland and a loss of suitable habitat for early gentian and early spider orchid as a consequence of rank grasses and scrub becoming dominant. Sustainable grazing has often ceased due to disturbance from increased recreational pressure, especially dogs and off road cycling (including at night),practical difficulty in fencing cliff tops and losing stock (cattle and sheep) over the cliffs recent and potential risk of landslips resulting in fences being lost and/or moved inland farming systems or remote land ownership that doesn't accommodate appropriate stock. The historic practice of semi-wild and domestic stock grazing of entire coastline, including the beaches and cliffs has ceased.	Existing Local project; Rural Development Programme for England (RDPE)	Increase the population of semi-feral goats on Portland's weares to graze scrub and coarse grasses.
River Itchen	Undergrazing impacts on wet meadow systems, causing degradation of southern damselfly habitat in particular. Bridges are required to access and manage sites and prevent SAC condition to deteriorate. This requires special project funding, which is currently prohibited in HLS agreements.	Rural Development Programme for England (RDPE)	Countryside Stewardship: ensure new agreements adequately resolve issues HLS amendments: support access bridge for cattle grazing and vehicular access for tree/scrub removal see Action 4A: Ensure existing HLS agreements continue to benefit water quality (particularly through control and monitoring of stocking densities where grazed) and southern damselfly habitat. Set up new agreements on relevant landholdings under the 2014 transition arrangements. Target future Countryside Stewardship funding to address areas where a change in land management is required to achieve favourable SAC condition, including renewing expiring HLS agreements.
Rooksmoor	Undergrazing leads to a ranker sward which often inhibits plant diversity	Enforcement	Negotiate with owner - confirm if funding for livestock fencing is required and/or support the land owner in finding a grazier
Roydon Common and Dersingham Bog	Part of Roydon Common is currently not being grazed due to requirement for SoS approval to fence the site. The remaining units also have extensive areas of mire that is being undergrazed because they are too overgrown (mainly by purple moor-grass tussocks) which make these areas difficult for animals to access.	Advice; Rural Development Programme for England (RDPE)	Secure permission for fencing on common land at Roydon Common. Summer mowing and litter removal required at Roydon Common, to enable stock to graze mire. Adjust numbers and types of grazing stock at Roydon Common. Purchase a mobile cattle crush at Roydon Common.

South Devon Shore Dock	Adequate levels of grazing are essential for the sea cliff plant communities to prevent excess rankness and to help avoid scrub encroachment. A significant proportion of the site is not currently receiving sufficient levels of grazing and if this is not addressed the species richness of the plant communities may decline. Whilst most areas are within an agri-environment scheme additional advice, guidance and support would be beneficial in helping land managers to achieve the desired grazing levels.	Advice	Provide additional advice and support to land managers as part of the agri-environment aftercare programme for this site to ensure appropriate grazing levels are achieved
South Pennine Moors	Areas of the site are suffering from undergrazing, affecting both the habitats of the breeding birds and the notified feature habitats; this is principally a by-product of stock removal for habitat restoration.	Rural Development Programme for England (RDPE)	Increased facilitation of specific stock grazing on difficult sites including conservation fencing, shepherding and introducing appropriate breeds. This will also include the re-introduction of stock onto sites where they were previously excluded/removed.
Teesmouth & Cleveland Coast	Some of the undesignated land that is used by non-breeding waterbirds is being encroached by scrub and coarse vegetation. Consequently these areas are becoming unsuitable for foraging or roosting. In addition, water levels on Cowpen Marsh have been increased to benefit breeding and foraging waterbirds, but these wetter conditions have made it difficult for livestock to access some sections of the site and additional infrastructure is required.	Rural Development Programme for England (RDPE)	Install new bridges on Cowpen Marsh to facilitate grazing Facilitate management of brownfield grassland to prevent invasion of scrub and restore open sward structure.
Thames Basin	Parts of the complex are undermanaged. Limitations are such that traditional stock cannot be used (because they are live firing ranges), or resistance to the fencing of common land. The excessive cost of disposal of arisings from cutting management is a significant factor making it impractical for large scale use. Controlled burning is not considered a practical alternative in this complex. Lack of grazing over a long period has resulted in poor habitat quality and restoration will take a long time. Grazing may actually be having negative impacts in some cases and improved management is required in these instances. There is scope to improve efficiency in use of resources through improved coordination, sharing of equipment and improved partnership working.	Investigation; Non-Natural England funded site management plan; Partnership agreement	Investigation of possible economic uses of material arising from habitat management such as biomass to bioenergy Production of agreed management plans for key sites which identify priority actions to improve condition of Natura 2000 features Implementation of appropriate alternative management where grazing is not practical Development of a heathland management partnership which seeks to share resources, expertise and equipment in order to increase efficiencies in management delivery Improve long-term management of power line way-leaves with power suppliers to avoid damaging impacts and improve habitat condition and connectivity

Tintagel Marsland Clovelly Coast	Grazing by livestock and the control of scrub and/or bracken areas is sustained by the support provided by agri-environment management schemes. This allows an open and varied vegetation structure to be maintained on the coastal slopes which benefits the vegetated seas cliff and dry heath habitats. Such management replicates long-established 'traditional' farming practices but is uneconomical in modern-day agricultural terms, and thus reliant upon support from state aid schemes. Without such management the habitat of many areas would degrade and become dominated by course vegetation and scrub. Land managers are not sufficiently attracted by the payment rates for managing marginal land or clearing scrub on steep slopes, and on occasions insufficient budget has been available to allow additional capital works to be added to exisitng agreements where capital works have expired. Undergrazing is an issue at West Titchberry where without appropriate grazing management the sea cliff habitat will decline becoming dominated by course vegetation and scrub.	Rural Development Programme for England (RDPE)	Fund and implement conservation management capital works required as part of existing HLS agreements. In specified areas, reintroduce grazing animals to control rank/woody vegetation to restore an open habitat structure.
West Dorset Alder Woods	Undergrazing is a key threat in regard to maintaining more open diverse fen and damp fen meadow vegetation. Targeted and careful grazing schemes should be implemented where possible (as demonstrated at various sites within the SAC). Outbreaks of bovine TB in cattle and stock movement restrictions are sometimes a factor increasing the difficulty of attracting graziers to small sites. In addition there may be a need for appropriate farm infrastructure to facilitate and support conservation grazing and enable flexibility of management given variable seasonal climate conditions.	Advice	Provide grazing advice to non agri-environment scheme agreement holders, and increased aftercare to HLS agreement holders. Consider development of a 'small site supplement' in TB affected areas as part of Countryside Stewardship to ensure sufficient cattle graziers can be attracted to graze small and difficult land in the SAC To meet complex grazing needs support the provision of cattle and sheep infrastructure, handling systems, and lose houses for conservation grazing animals to enable resilience to more changeable seasonal climate conditions.

Table B – Issue description, mechanisms and actions identified in SIPs featuring undergrazing (based on data available 1 December 2014)

SIP Name	Overgrazing Issues Description	Mechanisms	Grazing related feature (by issues category)
Cannock Extension Canal	Large groups of Canada geese are grazing on the water plants in the canal. There is a risk that this could affect the vegetation community including Floating water-plantain as well as contributing additional nutrients via excreta.	Advice	Raise awareness of the importance of the site with the local community if the feeding of geese (e.g. with bread) is an issue.
		Investigation	The effects of grazing on aquatic macrophytes by large groups of Canada geese needs to be assessed and resolved.
Cerne & Sydling Downs	A certain amount of positive micromanagement takes place on the NNR, and has proven beneficial, however overgrazing is evident on other areas, resulting in damage to the SAC features. Overgrazing is removing the marsh fritillary's food plants, and meadow plants are not able to set seed.	Advice	Enforcement action and/ or negotiation with the landowner to adjust grazing regimes.
		Enforcement	Seek a management agreement where necessary, and in combination with enforcement procedure.
		Investigation	Walkover survey of the whole site to identify overgrazed areas and establish a baseline.
		Rural Development Programme for England (RDPE)	Where SAC land is not under agreement, promote and set up agri-environment agreements.
Craven Limestone Complex	Overgrazing by sheep/deer/rabbits is having a negative impact upon tree and shrub species on limestone pavement. In addition, there is localised overgrazing of woodland and stream sides.	Advice	Encourage the control of rabbits to deliver habitat objectives.
		Enforcement	Modify or revoke existing consents should they be found to be damaging through Review of Consents.
		Investigation	Investigate the relative impacts of rabbit grazing on key habitats.
		Investigation	Investigate feasibility of fencing or reducing stock grazing adjacent to streams and the potential impacts on the wider habitats as well as on bullhead.
		Mechanism not identified / develop mechanism	Seek funding sources outside of Countryside Stewardship for limestone pavement fencing.
		Regulation	Seek advice about planning permission / Scheduled Monument Consent for fencing on limestone pavement on land under a limestone pavement order.

		Regulation	If Action IROW 161 fails, consider a management scheme/ notice under Section 28JK of the Wildlife and Countryside Act (as amended) to require control of rabbits where impacts on features are observed.
		Rural Development Programme for England (RDPE)	Fence or reduce stock adjacent to stream.
		Rural Development Programme for England (RDPE)	Fence areas of limestone pavement.
		Rural Development Programme for England (RDPE)	Fence off areas of woodland and replant.
		Rural Development Programme for England (RDPE)	Where rabbits are impacting features under Environmental Stewardship Scheme management, negotiate appropriate agreements to ensure that farmers reduce stock numbers accordingly.
Dartmoor	There are some areas of the SAC that have inappropriate stocking regimes, notably those that are not in Environmental Stewardship agreements. A small number of existing Higher Level Stewardship agreements have stocking calendars that are not appropriate for the delivery of SAC objectives and need to be reviewed/changed.	Enforcement	In the few cases where there is no voluntary agreement reduce stocking rates to appropriate levels through available mechanisms.
		Regulation	In the few cases where there is no voluntary agreement reduce stocking rates to appropriate levels through available mechanisms.
		Rural Development Programme for England (RDPE)	For new Countryside Stewardship agreements, develop jointly agreed grazing regimes which are reviewed and evaluated regularly. Review and update existing HLS agreements to ensure that grazing regimes are appropriate.
Dee Estuary/Aber Dyfrdwy & Mersey Narrows	The issue on the site is inappropriate grazing (stock type and/or timing of grazing). Parts of the site are managed for both SAC and SPA features and where these have different sward height preferences it causes a conflict in terms of the level of grazing deemed appropriate for the area. Increased grazing pressure caused by Canada Geese, in combination with grazing sheep, could result in overgrazing in parts of the site.	Investigation	Investigate existing grazing pressures to help inform advice on suitable grazing management practices.

Dungeness	Rabbit overgrazing across Dungeness Point and Rye Harbour affects the perennial vegetation.	Partnership agreement	Strategic approach to rabbit control is needed across a number of land ownerships. Partnership working is key to maintain rabbit grazing pressures within reasonable limits. The partnership agreement would set out the scope of area to be controls, joint working arrangements and secure commitment from all partners to deliver.
Fenn's, Whixall, Bettisfield, Wem & Cadney Mosses	Most of the pastureland in the SAC is grazed very heavily and for as much of the year as possible. This leads to the peat profile being damaged by poaching and the addition of nutrients (manure and fertilizers) as well as by cultivation practices such as re-seeding.	Rural Development Programme for England (RDPE)	Seek management agreements (Section 15/ Countryside Stewardship) to improve stocking levels and the seasonality of grazing to prevent further deterioration of degraded raised bog areas.
		Section 15 Management Agreement	Seek management agreements (Section 15/ Countryside Stewardship) to improve stocking levels and the seasonality of grazing to prevent further deterioration of degraded raised bog areas.
Fens Pools	High illicit stocking with tethered horses especially during the summer months means that the grass sward is severely overgrazed. There are indications that this is having a detrimental impact on the frog and toad population due to reduced availability of invertebrate food prey on the overgrazed grasslands. There is concern that this will be impacting the great crested newt (GCN) population in a similar way. The grass sward in Jan 2014 was less than 2cm and causing sediment run off around the breeding pool areas. The lengthy process involved in removing from site illegally present horses means the avoidance of damage is difficult. Even when horses can be removed often more appear within a short time period.	Major Landowner Group land ownership activities	Liaise with Dudley MBC, Police and RSPCA to have the horses removed more promptly when they are grazing too near the known GCN breeding pools during the GCN breeding months, and during the closed grazing season over winter to reduce soil runoff and poaching.
Ingleborough Complex	There is a general lack of tree, shrub and emergent grike vegetation across much of the site and especially the southern half. This is as a result of both current and very long-term historic stocking levels, and unrestricted grazing on relevant parts of the site.	Advice	Review affected limestone pavements to confirm areas worst affected by overgrazing.
		Investigation	Review the influence of RDPE funding on grazing to ensure that the correct grazing regimes are in place across the site.
		Mechanism not identified / develop mechanism	Seek funding sources outside of ERDP for limestone pavement fencing and restoration works.
		Regulation	Source funding or more particularly the staff resource to implement outcomes of reviews of existing grazing consents.

		Regulation	Seek planning permissions for fencing on commons, LPO etc to allow the development of trees, scrubs and non-woody emergent vegetation, particularly on the southern part of Ingleborough, Scales Moor and Kingsdale.
		Rural Development Programme for England (RDPE)	Reduce grazing pressure to sustainable levels where vegetation suppression is occurring.
		Regulation	Review extant grazing consents to secure long term grazing management.
Norfolk Valley Fens	Gooderstone Fen (Fo) has been overgrazed in the recent past by cattle, both in terms of overall numbers and in grazing period, extending into the winter.	Rural Development Programme for England (RDPE)	Gooderstone Fen: ensure that the new grazing regime is appropriate to maintain target vegetation communities
North Pennine Dales Meadows	Changes in spring grazing are being observed, including higher stock levels on the in-bye land. These changes may be related to controls of grazing on moorland and a tendency for increases in lambing percentage.	Rural Development Programme for England (RDPE)	Review grazing prescriptions and indicators of success about sward height and condition in existing agreements - provide clearer guidance about grazing rates and target sward condition.
		Rural Development Programme for England (RDPE)	Review early spring stocking concentrations.
Ox Close	Previous surveys suggest that rabbit numbers on and in the vicinity of the SAC are too high to allow the SAC features to be restored/maintained. Other comments however suggest that a little burrowing into/scuffing of the spoil heaps by rabbits may be desirable and be having a positive effect... "it is likely that disturbance of the spoil by these animals is probably the only driver maintaining the habitat and keeping up lead levels against the forces of leaching and soil build-up." Rabbit control will need to play a fundamental role in future	Advice	Identify the landowners concerned and agree with them how the issue of overgrazing by rabbits can be resolved. The long-term resolution of rabbit complaints is best achieved by co-operation; otherwise problems are almost certain to recur. Any agreed action to control rabbits should also consider any adjoining land where rabbit numbers may also be an issue.

	management on the site, however their inadvertent contribution to the maintenance of the Calaminarian habitat i.e. scuffing of the material/keeping the sward open, should not be dismissed entirely. Livestock grazing levels on some of the SAC appear to be on the high side (compared to the indicative carrying capacity for the types of habitat present), given the high rabbit numbers and lack of active management. Some of the reported overgrazing attributed to rabbits could also be due in part to higher than expected livestock numbers, particularly in the spring and summer months.	Investigation	Undertake an assessment of the impact of rabbits both from a negative impact aspect (e.g. excessively short swards, sward destruction, nutrient enrichment) and positive impacts on Calaminarian grassland - in particular the suite of metallophytes and on the floristic composition of the calcareous grassland. This should take into account the impacts of rabbit grazing pressure in relation to livestock grazing density etc. The recommendations from such a piece of work could then inform discussions with the landowners in relation to control measures etc. (see Action 1A)
		Advice	Renegotiate current livestock grazing levels on areas of the site where stocking is understood to be affecting site feature conditions.
Peak District Dales	Overgrazing directly impacts SAC vegetation and also has indirect impacts via nutrient enrichment. Where it occurs it tends to be a serious issue and impacted habitats are difficult to restore due to the legacy of high nutrient input from increased stocking and supplementary feeding over a long period of time. An associated issue is weed control within these areas. Nutrient input and inappropriate grazing can also be due to stock feeding on land adjacent to, but grazed with, the dales (linked to inappropriate stock , see action 6C). Overgrazing is not exclusively caused by stock grazing with rabbit grazing also an issue on some sites. Stock grazing may also affect woodlands though this is covered under 'Forestry and woodland management', and here relates only to scrub-grassland edge habitat.	Enforcement	Where overgrazing is taking place, negotiation and, if necessary use of SSSI enforcement is required using S28P of the Wildlife & Countryside Act (grazing without consent). Overgrazing regulations are ineffective as land is not 'agriculturally overgrazed'.
		Investigation	see Action 1G: Itchen Valley Grazing project: allocate funds to support project advice on land management of existing HLS agreements, and non-HLS grazed land, in lieu of new HLS/ Countryside Stewardship payments. Agri-environment schemes do not fully cover the delivery of the project, joining up fragmented habitats throughout the floodplain.
		Advice	Renegotiate current livestock grazing levels on areas of the site where stocking is understood to be affecting sites feature conditions.

River Itchen	Impacts of overgrazing on river banks and wet meadow systems, removing riparian and meadow habitat and causing runoff into watercourses.	Rural Development Programme for England (RDPE)	see Action 1F: Ensure existing HLS agreements continue to benefit water quality (particularly through control and monitoring of stocking densities where grazed) and southern damselfly habitat. Set up new agreements on relevant landholdings under the 2014 transition arrangements. Target future Countryside Stewardship funding to address areas where a change in land management is required to achieve favourable SAC condition, including renewing expiring HLS agreements.
South Devon Shore Dock	Appropriate levels of grazing are essential to maintain the site's sea cliff vegetation community and in some locations the issue is too much grazing pressure causing a short sward with a poor vegetation structure. Whilst most areas are within an agri-environment scheme additional advice, guidance and support would be beneficial in helping land managers to achieve the desired grazing levels.	Advice	Provide additional advice and support to land managers as part of the agri-environment aftercare programme for this site to ensure appropriate grazing levels are achieved
South Pennine Moors	Overgrazing has adversely affected blanket bog, wet heath, dry heath and oak woodland habitats. In some instances this continues in others it is necessary to safeguard recovery when grazing is returned to the site. Areas of the site are suffering from overgrazing, affecting the habitats of the breeding birds and causing water run-off and erosion. Increased stocking levels are affecting the mosaic of dwarf-shrubs and are replacing them with grassland. Overgrazing has a likely long term impact leading to unfavourable condition for bog and heath communities.	Enforcement	Where consented grazing is continuing to cause damage and appropriate agri-environment agreements cannot be negotiated. Source funding to implement the outcomes of the review of existing grazing consents with a view to negotiating long term sustainable grazing regimes.
		Investigation	Pilot, and if successful roll out Virtual Fencing projects (also used for undergrazing).
		Investigation	Provision of long-term sustainable grazing regimes using off-wintering, fencing or shepherding. This requires the economic issues to be addressed (see SIP actions 4B and 14A for addressing Molinia and Bracken dominance).

Table C – Issue description, mechanisms and actions identified in SIPs featuring inappropriate grazing (based on data available 1 December 2014)

SIP Name	Inappropriate grazing issue description	Mechanisms	Grazing related issue (by issues category)

Borrowdale Woodland Complex	Some areas still have too much sheep grazing, preventing natural regeneration.	Advice	Education for the farming community about sheep grazing in woodlands
		Enforcement	Enforcement action where agreements are not adhered to
		Mechanism not identified/ developed	Additional monitoring and control of grazing levels in the woods
		Rural Development Programme for England (RDPE)	Additional monitoring and control of grazing levels in the woods
Lake District High Fells	Over the last few centuries, sheep grazing has had by far the biggest man-made impact on the condition of almost all of the features in the SAC. Although flock sizes have reduced considerably over the last decade or so, sheep still have impacts in certain localities and on the more sensitive features. Some palatable vegetation receives a high localised pressure with sheep congregating to graze some habitats. Seasonality of grazing is also important because grazing outside of the growing season has greater impacts on habitat condition than grazing when vegetation is actively growing. Some habitats in some locations would benefit from the replacement of some or all sheep by cattle as cattle have different habitat impacts.	Enforcement	Negotiation and/or enforcement where grazing is unconsented.
		Habitat creation/ restoration strategy	Review the condition of SAC interest features and grazing regimes on (and affecting) all management units.
		Habitat creation/ restoration strategy	Prescribe changes to grazing management regimes that will remedy the above.
		Mechanism not identified/ developed	Investigate other mechanisms to address this issue, possibly to include amendment to agricultural tenancies where required.
		Rural Development Programme for England (RDPE)	Amend grazing regimes on all areas outside of the SAC where these are impacting on SAC condition through encroachment (areas to be identified in 1A above).
		Rural Development Programme for England (RDPE)	Amend grazing regimes on all site units where interest features are not in good condition due to grazing management.
North Pennines Group	Inappropriate grazing affects species composition of many habitats and can cause loss of extent of notified habitats and species. Rabbits as well as livestock cause localised overgrazing and additionally affect habitats on fragile substrates through burrowing. In many areas agri-environment schemes are helping to address this issue, but these are only temporary, lasting up to 10 years.	Rural Development Programme for England (RDPE)	Review effectiveness of RDPE funding in achieving sustainable management.
		Management Plan (Non-NE)	Ensure mechanisms and funding in place for effective control of rabbits where these are causing damage to Natura 2000 habitats, particularly limestone pavement.
		Regulation	Where consented grazing is continuing to cause damage to Natura 2000 habitats and appropriate agri-environment agreements cannot be negotiated, source funding to implement outcomes of review of existing grazing consents.

		Rural Development Programme for England (RDPE)	Monitor outcomes of existing agreements in achieving favourable structure and function of Natura 2000 features, and review and amend where necessary.
		Rural Development Programme for England (RDPE)	Where grazing is causing vegetation suppression, negotiate agreements to reduce grazing pressure to sustainable levels. This may include no-grazing areas on highly sensitive habitats eg hydrophilous tall-herb communities, montane heath and regenerating blanket bog. Where type of stock and seasonality of grazing are important e.g. northern hay meadows, seek to achieve desired grazing regime through management agreements.
Yewbarrow Woods	Sustainable grazing levels are required on the heathland and juniper to ensure there is no adverse impact on these features. Stock proof boundaries are required to allow natural regeneration of the woodland and ground flora.	Rural Development Programme for England (RDPE)	Improve the boundary between the woodland and grazed allotments to ensure it is stock proof where required
Ullswater Oakwoods	Existing grazing levels within the woodlands are too high to allow sufficient regeneration to occur. This applies both to livestock (sheep) and to deer.	Investigation	Review of agricultural land management in woodlands.
		Tenancy review/buy out	Review of land management as part of land capability assessment.
		Rural Development Programme for England (RDPE)	Amend land management practices through upgrade of HLS or Countryside Stewardship.

Annex 5 Natura 2000 features in England affected by grazing as reported in SIPS

SPA Bird Features (Common names and EU Code)

Common shelduck A048, Wigeon, A050, Eurasian teal, A054(NB) Pintail,A082(B) Hen harrier, A098(B) Merlin, A103(B) Peregrine, A130(NB) Eurasian oystercatcher, A133(B) Stone curlew, A140(B) Golden plover, A141(NB) Grey plover, A143(NB) Red knot, A149(NB) Dunlin, A151(B) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB), Common redshank, A222(B) Short-eared Owl, A224(B) European nightjar, A246(B) Woodlark, A302(B) Dartford warbler, A466(B) Dunlin, Breeding bird assemblage. [B = breeding, NB=Non-breeding]

SAC Habitat Interest Features (EU Code and Common names)

H1140 Intertidal mudflats and sandflats, H1220 Coastal shingle vegetation outside the reach of waves, H1230 Vegetated sea cliffs, H1230 Vegetated sea cliffs, H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, H1420 Mediterranean saltmarsh scrub, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2150 Coastal dune heathland, H2160 Dunes with sea-buckthorn, H2170 Dunes with creeping willow, H2190 Humid dune slacks, H3130 Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels, H3140 Calcium-rich nutrient-poor lakes, lochs and pools, H3150 Naturally nutrient-rich lakes or lochs which are often dominated by pondweed, H3170 Mediterranean temporary ponds, H3260 Rivers with floating vegetation often dominated by water-crowfoot, H4010 Wet heathland with cross-leaved heath, H4030 European dry heaths, H4040 Dry coastal heaths with Cornish heath, H4060 Alpine and subalpine heaths, H5130 Juniper on heaths or calcareous grasslands,H6130 Grasslands on soils rich in heavy metals, H6150 Montane acid grasslands, H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites), H6230 Species-rich grassland with mat-grass in upland areas, H6410 Purple moor-grass meadows, H6430 Tall herb communities, H6510 Lowland hay meadows, H6520 Mountain hay meadows, H7110 Active raised bogs, H7120 Degraded raised bog, H7130 Blanket bogs, H7140 Very wet mires often identified by an unstable `quaking` surface, H7150 Depressions on peat substrates, H7210 Calcium-rich fen dominated by great fen sedge (saw sedge), H7220 Hard-water springs depositing lime, H7230 Calcium-rich springwater-fed fens, H7240 High-altitude plant communities associated with areas of water seepage, H8110 Acidic scree, H8120 Base-rich scree, H8210 Plants in crevices in base-rich rocks, H8220 Plants in crevices on acid rocks, H8240 Limestone pavements, H9180 Mixed woodland on base-rich soils associated with rocky slopes, H91A0 Western acidic oak woodland, H91E0 Alder woodland on floodplains, H91J0 Yew-dominated woodland, S1013

SAC Species Interest Features (EU Code and Common names)

S1013 Geyer`s whorl snail, S1015 Round-mouthed whorl snail, S1016 Desmoulin`s whorl snail, S1044 Southern damselfly, S1044 Southern damselfly, S1065 Marsh fritillary butterfly, S1092 White-clawed (or Atlantic stream) crayfish, S1095 Sea lamprey, S1096 Brook lamprey, S1099 River lamprey, S1106 Atlantic salmon, S1163 Bullhead, S1166 Great crested newt, S1304 Greater horseshoe bat, S1355 Otter' S1393 Slender green feather-moss, S1528 Marsh saxifrage, S1654 Early gentian, S1831 Floating water-plantain, Waterbird assemblage.

Annex 6 Ecosystem services and grazing

In general grazing animals positively contribute to food provision and biodiversity, and pastoral agriculture is a major means of maintaining many landscapes as we know them. However there is a general link between cattle and greenhouse gas, from the fertilisers needed to grow forage through to the gut fermentation producing methane. Grazing by cattle also compacts soil and can lead to greater run-off and hence flooding and erosion. Moreover animals increase the levels of nutrient run-off, especially nitrates which can pollute water courses.

The more extensive grazing regimes compatible with meeting Natura 2000 site objectives which are the focus of this plan are likely to have a beneficial moderating influence on the ecosystem services adversely affected by grazing. For example reducing grazing pressure on unenclosed land is associated with the delivery of positive impacts such as reduced run-off and erosion, improved water quality, reduced flooding and carbon storage.

This work has been financially supported by LIFE, a financial instrument of the European Community

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ISBN 978-1-78354-190-4

Catalogue Code: IPENSTP016

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