THE COMPLEMENTARY ROLE OF SHEEP IN UPLAND AND HILL AREAS

A NATIONAL SHEEP ASSOCIATION PUBLICATION
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Sheep farming businesses in upland and hill areas provide a wide range of public goods and services. NSA considers these to fall into three pillars of sustainability – economic, environmental and social. This is supported by the International Convention of Biological Diversity.

All the benefits within these pillars, be they food production, local economies, landscape management, cultural heritage or environmental stewardship, are enjoyed by everyone from rural communities through to international consumers and tourists. NSA believes there has been some increase in recognition of these benefits in recent years, but feels there is still a long way to go and that steps must be taken to ensure the irreplaceable activity of sheep farming in these areas is preserved and enhanced.

It is positive that interest in sheep farming from the general public has increased, linked in no small part to a number of high profile television programmes such as This Farming Life and bestselling books such as The Shepherd’s Life. There has been acknowledgment in some quarters that sheep are an important part of the jigsaw in upland areas, and that agri-environment and conservation schemes have sometimes forced stacking rates too low, unintentionally damaging biodiversity. However, this is not yet resulting in a sufficient change at farm level. There have also been backwards steps in terms of the misinformed debate over rewilding and links between sheep and flooding.

The recent referendum decision to take us out of the European Union has dramatically changed the political landscape. Discussions over land classification and support payments for public goods in our four nations have not yet been resolved since the most recent reform of the EU’s Common Agricultural Policy (CAP), and we must learn from the past as we create a new UK agricultural policy. This policy must give special consideration to the hills and uplands and the unique combination of public goods farming these areas provide. There has never been a more important time to understand the tri-fold contribution of sheep farming in upland and hill areas: in England 41% of breeding ewes can be found in upland and hill areas; in Scotland, 90% of the sheep population in Northern Ireland are in upland and hill areas; and in Wales, 80% of the sheep population in Northern Ireland are in upland and hill areas.

NSA is concerned that upland and hill farms continually come under threat due to ever-changing market, social and policy pressures. These influence and risk fundamental change to the farming system itself, often ignoring the value that this most traditional and essential form of livestock farming provide. Over the years, upland and hill farmers have been at the mercy of policy makers, increasing livestock numbers when herdage payments were introduced to incentivize productivity gains, and then reducing stocking rates when environmental impact concerns came to the fore, despite overly prescriptive requirements often being detrimental and leading to undesirable agricultural, environmental and social impacts.

Disadvantaged Land has been recognised by policy makers at the highest level for decades, with special attention paid to areas that may not be as fertile as the lowlands but deliver public goods and services over and above food production.

Although this, disadvantaged types of agricultural land have been recognised by policy makers at the highest level for decades, with special attention paid to areas right across Europe that may not be as fertile as the lowlands but deliver public goods and services over and above food production. At the time of writing this report, new EU regulations were resulting in a change in designation for this type of land, from ‘Less Favoured Areas’ (LFA) to Areas of Natural Constraint (ANC). Until the UK leaves the EU, those changes may result in quite a difference for individual farmers, but leave the overall designation of 9.12 million hectares of LFA in the UK (53% of the utilised agricultural area) at a similar level.

NSA fully supports land being designated in this way, regardless of the terminology used, and believes it is important to have a system that recognises disadvantaged naturally constrained areas within the UK agricultural policy that replaces the EU system post-Brexit.

The latest available data (2014) shows 33.7 million sheep and lambs in the UK, including 16 million breeding ewes. A large percentage of these sheep can be found in upland and hill areas: in England 41.1% of breeding sheep are found on LFA farms; 63.1% of cattle and sheep holdings are in LFA in Wales; 80% of the sheep population in Northern Ireland are within LFA; and LFA is in Scotland are home to 91% of breeding ewes. Given the land mass and number of sheep, NSA believes it is clear that the hills and uplands are a vital part of a complex picture and require particular attention.

THE SHEEP SECTOR IN MARGINAL PART OF THE UNITED KINGDOM

The uplands and hills of Britain are an integral part of the sheep industry, producing breeding stock for lowland enterprises, store lambs, finished lambs and wool. Traditionally on integral part of the stratified sheep industry, and home to some of our hardest native breeds, farming in these areas is now recognised as a multifunctional activity, providing more than just agricultural outputs.

These are important areas for biodiversity and ecological processes, as well as being vital in sustaining rural communities.

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THE ECONOMIC OUTPUTS OF SHEEP IN UPLAND AND HILL AREAS

There are a wide variety of products that can be sourced from sheep meat: prime lamb remains a firm favourite for Sunday roasts and special occasions in the UK and across Europe; mince, burgers, diced lamb and lamb steaks are starting to find favour with younger consumers; quality mutton is experiencing a resurgence of interest from gastronomes; a variety of lamb and mutton products are highly sought after by ethnic populations; offal and low value cuts are popular in non-EU export markets; wool is seeing increased interest as a sustainable fibre; and Ugg boots and other quality products rely on a supply of sheep skins.

The UK is a world player when it comes to producing sheep meat. It is the sixth biggest producer globally and exports 36% of output to more than 100 countries. The hills and uplands are an essential part of this production model, not just supplying lamb and mutton where possible, but also providing breeding stock and genetics to other sheep-farming businesses in less marginal areas.

Despite this extremely positive position, the UK sheep industry still struggles for financial viability, fighting for shelf space alongside cheaper meats, such as poultry and pork, and competing against global competitors in most market outlets. In addition, many of the efficiency drivers of the modern farming economy and its market structure put pressure on the traditional upland system. This means productivity gains are either not appropriate, due to land type, or are openly discouraged or disadvantaged, due to land designation and planning controls.

Recent figures show the UK produces 298,000 tonnes of sheep meat a year, of which 64% is consumed domestically and 36% exported.

An export destination of particular interest for purebred hill and upland breeds is southern Europe, where light lambs have been traditionally sought after. The economic downturn has seen this market decrease, and the structure of EU exports will change over the coming years, but there has been significant growth in the export of hill and upland lamb and mutton to non-EU destinations such as South Africa and the Ivory Coast. Access to China and the USA would be a huge boost to all parts of the sheep sector.

The lack of progress made by the EU in negotiating Free Trade Agreements (FTAs) has put UK exporters at a competitive disadvantage for non-EU markets wanting lower-value cuts, but the ability of the UK to negotiate independently, outside the EU, is not yet known. Currently, Australia and New Zealand are leading the way in this area. The UK is an importer of lamb as well as an exporter, and the New Zealand quota for imports into the EU will also be under review as the UK prepares to leave the EU. It could be advantageous for the UK to review this quota and have a trade deal that complements our domestic production for more than it does currently, and to take opportunities to ensure importing nations do not undermine UK production with lower regulatory requirements.

Red meat is extremely beneficial to health, by providing a variety of benefits such as improved immune function, a healthy heart, red blood cell formation and growth. Plant-based foods contain four times as much vitamin E and up to four times as many omega-3 fatty acids as concentrate-fed meat. The average fat content of red meat has significantly reduced over the past 20 years and finishing lambs on grass produces a lean product. Mutton is also an excellent source of CLA and contains every essential amino acid.

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Our domestic market is hugely important but work is needed to promote the consumption of British lamb and reverse the downward trend that has been seen in recent decades. The unique range of sheep breeds and production systems in the UK, to which upland and hill areas are integral, means lamb can be produced in this country all year round.

Traditional demand in Europe, particularly from France, coupled with the growing global population and projections for increasing wealth in Asia, means the export market is also essential. Increasing market access will grow demand for UK supply and must be a priority in Brexit negotiations between the UK and EU on access to the common market.

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GENETICS

The stratification of the sheep industry is unique to Britain and makes the most of the topography and local breed traits found in such areas. Traditional hill and upland breeds are physiologically suited to the harsh conditions and are efficient at rearing lambs and maintaining their own body condition from low inputs and relatively poor vegetation. Producing the same amount of red meat without access to these sheep would face stark competition for land and areas more suitable for the production of cereals.

There are more than 60 recognised pure breeds of sheep in the UK and more than 80 breed societies when you include crosses, halfbreds, Mules and composites. Most countries only have a handful. NSA estimates almost two thirds of those found in the UK relate to native hill and upland breeds. This high number of breeds provides a uniquely broad base of genetic diversity with some genes, particularly those of upland breeds, not found anywhere else in the world.

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The loss of vital traits from hill ewes, such as good mothering ability and hardiness, would change the whole British sheep industry. The removal of native breeds would also be a loss to the culture and heritage of these areas. However, change is already being seen. The drop in national ewe numbers since 2003 is largely due to a reduction in the three main hill breeds, Scottish Blackface, Swaledale and Welsh Mountain. Although traditional Muirs are still popular, a move towards more prolific breeds is threatening the traditional stratified system and the desirable land management assets of upland breeds, such as their preference for eating shrub vegetation and foraging over wide areas. It is also threatening the traditional system where upland breeds are ‘hefted’ to large open tracts of land, such as commons, where sheep graze their own heft without feeding, knowing the best pastures for food and shelter, and develop tolerance to mineral deficiencies, plant toxins and specific diseases in the area. Appropriate stocking rates are essential to dissuade selective grazing and therefore prevent scrub and bracken encroachment, disease-causing tick populations and the risk of wildfires. The majority of hill farms rely heavily on payments from agri-environment schemes but stocking prescriptions can be too often inflexible and reduced stocking rates and the total removal of stock over the winter months has compromised the hefting instinct and potentially reduced hardiness of stock due to winter housing and different stock selection criteria. It is also one of the reasons for substantial habitat degradation in the uplands.

A large number of the less numerous hill breeds have fallen. There were 35,000 Lonk ewes in 2003 compared to 20,000 in 2012. 12,000 Rough Fells dropped to 7,000, and 16,000 Dorset Horns down to 1,000. This is why NSA is promoting the need for a national gene bank, as well as protocols to mitigate a disease-related cull that could wipe out certain breeds predominantly found in very remote areas of the country.

Alongside the strong arguments in favour of protecting genetics and breeds, there is also the need to make breeding progress and improvements. Returns from genetic improvement in sheep are substantially below their potential in the UK, and there are particularly opportunities in the uplands to advance maternal traits. The use of estimated breeding values (EBVs) and genetic breeding values can also reduce the carbon footprint of sheep enterprises, by selecting for production traits. It is imperative the industry works together on disease control too. The regular sale of sheep from the uplands to the lowlands means gains could be made from known health statuses, the passing of information between supplying and receiving farmers, and proper quarantining.

WOOL AND SKINS

Despite the quantity of wool produced in the UK and its incredible properties, the value has been very low since the rise of synthetic fibres in the 1960s and 70s. Apart from farmers running specific wool breeds, wool is a by-product that only contributes marginally to the bottom line, at best. An average price for shearing is 50p-61p per sheep, plus the cost of handling and transporting the fleeces, compared to returns ranging from 50p to £3 per fleece. These prices are better than they were, as farmers have seen a threshold increase in the value in recent years, in no small part due to the launch of the Campaign for Wool in 2010, a global initiative initiated by patron HRH Prince of Wales.

Sheepskins are also largely considered to be a low value by product but there is still demand for them, mostly from overseas where regulations are less strict and production costs lower. In 2013 64,000 tonnes of skins, from roughly 14 million sheep were sold, with 79% exported to China. Domestic demand is limited to only three UK tanneries, although the possibility of a fourth opening in Wales is bucking a trend of decline across many decades. Pollution caused by tanneries added to the pressure to survive as cheaper, synthetic materials were developed, but the three surviving UK tanneries are all striving to maintain profitability and keep up with demand.

AROUND HALF THE ORGANIC MATTER OF THE FLEECE IS CARBON, MAKING WOOL AN EXCELLENT NATURAL CARBON STORE.

NSA member David Griffiths runs a sheep flock on the Derbyshire ‘Staffordshire border alongside a mini woolen mill. To increase awareness of sheep farming and Britain’s wool heritage, he and wife Karen created the educational ‘Wooly Roadshow’, travelling to UK shows and events. Karen says, “Years ago our farmers valued their wool and sheepskins as much as their meat, but we allowed people to tell us fleeces were of little value and then many people started to treat them as such. We need to re-educate everyone about the true value.”
There are real opportunities for farmers in upland and hill areas to exploit premium and niche markets, directly selling lamb and mutton or offering a strong brand identity for products. Because niche sheep products can be based on either a breed or a geographical location, they can help to create a unique profile of lamb and mutton and bring the producer closer to their market. It is therefore arguably important for the industry to create more mainstream interests for currently niche products to sustain populations of rare and upland breeds.

Farmers need a bank of market knowledge and a will to cooperate if they are to be encouraged into niche market entrepreneurship, allowing them to develop marketing, branding and sales plans, find potential customers and, once established, stay connected with changing market trends.

The large number of native breeds in the UK, as well as heritage breeds, coupled with an array of iconic areas and landscapes, means there are excellent opportunities for farmers to develop this whole other skillset. Retailers have this expertise but do not have a track record of interest in creating mainstream interests for niche products to sustain populations of rare and upland breeds.

As a result of the Scottish Government offering a very low support payment to poorer rough grazing to so-called ‘region 3’ Argyll-based NSA member Sybil Maspesian is one of many Scottish upland producers trying to maintain sheep numbers via the Scottish Upland Sheep Support Scheme. She says: “It was hoped the scheme would bring support payments to active farmers in region 3 more in line with land in region 2, which is better quality rough grazing and attracts a higher area payment. However, there were 14,000 more eligible hoggs claimed for than expected, meaning the anticipated rate of £100 per hog dropped considerably. A number of issues emerged following the processing of claims and it now appears a review of the much-needed scheme will be possible.”

As input to an agri-health scheme be further discussed in the new political situation, as small scale trial work of this has been very promising. Such an agri-health scheme would reward farmers for measures such as voluntary monitoring and health initiatives, while reducing carbon emissions through the funding of new, efficient buildings and equipment. The areas defined by the EU as integral to a successful agricultural sector are under-represented for the UK, as elsewhere in Europe and should be considered for the UK’s agricultural policy post-Brexit. NSA would also like to see its suggestion of an agri-health scheme be further discussed in the new political situation, as small scale trial work of this has been very promising. Such an agri-health scheme would reward farmers for measures such as voluntary monitoring and health initiatives, while reducing carbon emissions through the funding of new, efficient buildings and equipment. 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FARMERS HAVE WIDELY WELCOMED MEASURES TO ENHANCE BIODIVERSITY AND THE ENVIRONMENT – BUT THESE HAVE GONE TOO FAR IN SOME SCENARIOS AND REDUCED STOCKING RATES OF SHEEP IN SOME AREAS ARE LEADING TO HABITAT DEGRADATION.

WOODLAND

NSA is supportive of the integration of trees into some types of farmland, seeing this as preferable to block planting and removal of land from agriculture. Integration will not work on every farm but, in the right piece, has a role to play.

As well as having environmental benefits, trees can provide production, health and welfare gains for sheep. One example is minimising issues at lambing time by planting shelter belts, which are particularly beneficial for hill and upland flocks that don’t have ewes into a shelter to give birth to their lambs. Another option is planting boggy areas that harbour the mud snail involved in the liver fluke lifecycle. Both these facilitate tree planting with minimal loss of productive farmland, but farmers are understandably nervous about going down this route as it reduces the area of farmland they can claim under the current Basic Payment Scheme. This is one way that the UK could benefit from having to adopt its own agricultural policy outside the EU, as more holistic systems could be put in place that removes barriers for tree planting in order to enhance biodiversity and assist with water management.

Another attraction of trees is that they can be an additional income stream for farmers, allowing them to expand into the timber industry and aiding resilience against economic shock, without degrading their efforts and earnings from livestock production too much. Learning from our European neighbours, where farming and forestry are often seen as mutually inclusive, could increase timber supplies and help the UK meet its climatic change mitigation targets.

Another way of increasing the number of traditionally established trees, growing behaviour of sheep is beneficial to the diverse habitats found in the area of ancient semi-natural woodland. Appropriate stocking rates of sheep help create and maintain habitats for the invertebrates and vertebrates that depend on the ground flora and shrub layers of these areas, as well as providing pathways for mammals and birds, creating seedling establishment sites and reducing the spread of bracken.

WATER MANAGEMENT & FLOOD ALLEVINATION

The global requirement for water is increasing at the same time as our changing climate is causing more droughts and water shortages and making it difficult to produce food in some countries. Predictions suggest the UK may have an increasing future role in feeding the world, at the same time as safeguarding our own safe drinking water catchment areas, which are mainly in the hills and uplands.

At the other end of the scale, most European countries are experiencing periodic and extreme flooding. The devastating floods have in winter 2015 saw sheep held responsible by some conservationists and commentators, yet it cannot go unnoticed that recent increases in severe flooding have happened despite a dramatic decrease in UK sheep numbers, especially in hill and upland areas (as described on page 8). Of course the hooves of sheep can cause some types of soil, in particular clay and mineral soils, to cap and water to run off – but in other places, such as peat land, hooves can aid the breakup of the soil cap and increase water absorption. Likewise, some parts of the uplands, with steep sides and rocky outcrops, have low water storage capacity, while other habitats, such as bogs, woodlands and moors, act as natural ‘giant sponge’ flood defences. Well maintained woodland and scrub, moors and heather are the most beneficial sources of vegetation for intercepting and impeding water flow, due to their deep network of roots and surface areas of leaves.

Upland forestry has been promoted by some as a panacea for flooding in upland areas, but activity is needed at a larger catchment scale to consider, for example, the appropriateness of building developments further downstream and maintenance and adequacy of sewers and drainage. There is also a difference between traditional and commercial forestry, as the latter can cause severe soil erosion and water pollution at planting and harvesting times.

As all sites affected by flooding are different, so too are the solutions. In some areas strategic planting of trees, shelter belts and hedges will help. In others it will be maintenance of field drains and the use of aeration equipment at appropriate times of the year to aid water infiltration and reduce run off. In areas where there is little chance to slow down the water, the priority must be ongoing stream and river maintenance to get water away quickly. The removal of rocks and sediment will aid this and maintain spawning beds for fish. Non-intervention policies, such as these for streams and rivers in sites of special scientific interest (SSSIs), go against centuries of human maintenance and are unsustainable.

FARMERS ARE UNDERSTANDBLY NERVOUS ABOUT PLANTING TREES UNDER THE CURRENT BASIC PAYMENT SCHEME. THIS IS ONE WAY THE UK COULD BENEFIT FROM HAVING TO ADOPT ITS OWN AGRICULTURAL POLICY OUTSIDE THE EU.

WOODLAND ASPIRATIONS

NSA believes upland and hill areas would benefit from deeper understanding of the role sheep and the uplands play in prevention and mitigation of flooding and the supply of vital clean water to many urban communities.

The Complementary Role of Sheep in Upland and Hill Areas

Peter Brewis is one of the farmers involved in the Flow Partnership project, established in 2010 to successfully prevent flooding that used to regularly affect Belford in Northumberland. Water is held back on specially created ponds, stored at peak times and released once river levels return to normal. Mr Brewis says: ‘I was approached to get involved after several flash floods affected the area. It was important the work had very little impact on the output of the farm, and we managed to find a number of areas that suited both us and the project, successfully holding water without affecting fields or fields in arable rotation. Suitable sites include permanent pasture which recovers quickly after flooding, arable field corners and woodland. Belford suffered a considerable storm last not long after the first work was completed and did not flood.’

Roger Jukes is one of several farmers involved in the Pontbren project in Welshpool, Powys, which is a partnership approach to integrating trees and hedges for livestock gains and flood alleviation. He says: ‘Our driving force was creating natural habitats for wildlife and also natural barriers to give livestock protection from the harsh climate we endure in our region. The project showed agriculture can work side by side with activity to enhance biodiversity, wildlife habitats, water quality and flood protection.’
To help combat climate change, there must be a balance between carbon stored and atmospheric carbon dioxide on a global level. One way of sequestering carbon is where plants take carbon out of the atmosphere through photosynthesis and store it in the soil, through live or dead plant material. Organic soil matter is 69% organic soil carbon.

Upland peatland and peat soils are the largest stores of carbon in the UK, accounting for 42% of the total. Unlike other carbon sinks, peat bogs can store more and more carbon as the depth of the bog increases, while also attracting a wealth of invertebrates, supporting many wading birds, and benefiting fish breeding sites further downstream by natural water management. Current moorland habitats may eventually succeed into peat-forming ecosystems and would store more carbon than woodland ever could in these areas.

Efforts by farmers and grouse moor managers to protect moorland habitats, through sustainable grazing to avoid erosion, bracken and wildfires, help protect the carbon locked in the peat soils below. This might include gripe blocking, where drains previously created in the draining of uplands are blocked for the health of peat bogs and to hold back water in the uplands to reduce flooding risk downstream. But there is a fine balance, as over-wet uplands lose their capacity to hold water in times of heavy rainfall. Similarly, care must be taken when planting trees in these areas, as they can cause the peat to dry and release gases into the atmosphere. The difference between peatland soil and peat bogs must be recognised, as despite the habitat advantages of peat bog, it is not as suitable for sheep grazing, especially where there is increased growth of sheep toxic Bog asphodel.

Grassland also provides an effective, profitable and culturally relevant way of storing soil carbon, and optimal grazing livestock greatly contribute to this by transforming bare patches into flourishing grassland/biodiversity, providing ascertainment and urine for fertiliser, breaking up the soil cap of peat soils and trapping dead vegetation into the soil. Many agri-environment schemes require sheep to be removed from the peat soils of the hills at certain times of the year, onto the clay and mineral soils of the slopes and lowlands, which are easily compacted by hooves, increasing the wetness of run-off in arguably the wettest season.

While it must be acknowledged heather is emitters of dangerous greenhouse gases, it is the cruxness of current carbon footprinting methods that suggests meat production on hill and upland farms has a higher environmental impact than its lowland counterparts. Current methods do not take account of the full carbon cycle and more holistic measuring tools are needed that look at more than just the fact that carbon is released from burning, provides a mix of native heather for nesting cover and newer shoots for food. In comparison, unmanaged heather becomes a dense mass of woody stems and a wildlife risk that supports fewer sheep and very little wildlife.

Heather is negatively impacted by bracken, which is a dominant monoculture that smothers more sensitive and ecologically valuable species. It blocks out light and rainfall, preventing many plant species from thriving, not just heather. It also reduces sheep grazing, wildlife habitats and young tree growth, it hampers access for farmers and comercial to livestock, is damaging to humans and harbours dangerous ticks. Tick-borne diseases in birds, wildlife, livestock and people are attributed to increasing areas of bracken, while water soluble salts, the peat loses the water and reduces the water's carbon sequestering potential.

Efforts by farmers and grouse moor managers to protect moorland habitats, through sustainable grazing to avoid erosion, bracken and wildfires, help protect the carbon locked in the peat soils below.

Heather moorland is a globally threatened habitat, mainly due to over-grazing, afforestation and bracken encroachment, and 75% of what remains is found in Britain. Its international importance is linked to its role in providing habitat for a rich variety of flora and fauna, including rare birds.

A good working relationship and balance between all stakeholders on heather moorland is essential, as areas are often shared by farmers and grouse shoots. Grouse moor managers in England alone have regenrated and recovered 217,000 acres in 20 years, spending around £52.5 million a year on management. Much of this is privately invested and benefits the economies of local rural communities by supporting 1,520 fulltime equivalent jobs including associated services such as game dealers, accommodation and equipment suppliers.

Managed moorland, which involves controlled burning, provides a mix of native heather for nesting cover and newer shoots for food. In comparison, unmanaged heather becomes a dense mass of woody stems and a wildlife risk that supports fewer sheep and very little wildlife.

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NSA believes upland and hill areas would benefit from:
- Recognition of the extreme importance of the uplands as carbon sinks, in particular peat soils, and the role that farmers play in protecting them.
- Recognition of the environmental and social benefits of grazing and farming to reducing risks of wildfires.

NSA member Hamish Wilgus, who farms in Westerkirk, Dumfriesshire, has provided this image:“The sheep were removed from this patch around 28 years ago and it is clear the heather regeneration has been poor, if any at all. The land to the left of the fence is grazed at a rate of one ewe per two acres and the heather here is knee-deep. I believe this shows the effect of under-grazing from the partial or total removal of sheep is not always what is desired. Grazing at a suitable stocking rate for each unique area, to maintain and even flourish the heather and other vegetation, is the most beneficial option for all aspects of biodiversity and environment.”

HEATHER & BRACKEN

**HEATHER & BRACKEN ASPIRATIONS**

**DID YOU KNOW?**

**DID YOU KNOW?**

**BRACKEN REDUCES SHEEP GRAZING, MORE VALUABLE WILDLIFE HABITATS AND YOUNG TREE GROWTH, IT HAMPERS ACCESS FOR FARBERS AND WALKERS, IS TOXIC TO ANIMALS, CARCINOGENIC TO HUMANS AND HARBOURS DANGEROUS TICKS.**

**CARBON & PEAT ASPIRATIONS**

**THE COMPLEMENTARY ROLE OF SHEEP IN UPLAND AND HILL AREAS**

**ENVIRONMENT**

**HEATHER & BRACKEN**

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**Biodiversity**

The uplands hold a complex mosaic of habitats, much of which has been created or highly influenced by livestock grazing. Sheep control the growth of more aggressive plant species, give mobile wildlife species the chance to move through the habitat, benefit invertebrates and microbes with dung and plant litter, and create gaps in the vegetation to allow new seedlings to grow. This habitat diversity is brought about by appropriate grazing supporting species that prefer long or short vegetation or rely on the interaction between the two.

Many bird species benefit from sharing their habitat with grazing sheep, including using naturally-shed wool as sturdy nesting material and feeding on dung-eating insects. Songbirds in particular prefer the patchwork landscape that sheep create by their natural grazing behaviour and are more commonly found in sheep-grazed areas. The situation reverses when under-grazing results in the encroachment of coarse grasses that give a mono-cultural vegetation structure. Off-wintering of sheep entirely decreases habitat diversity, and moving them to in-bye land intensifies use in these areas.

Invertebrates also flourish around sheep, benefiting from the dung and utilising the plant diversity within effective grazing regimes as a food source. Beetles and their grubs are in turn an excellent food source for birds and some mammals. Dung beetles are good for soil health and populations of certain species, such as the northern dung beetle (Anoplophora), have declined in line with less grazing livestock on historic pastures. As explained on page 12, sheep can be used to reduce habitats for ticks and, therefore, reduce the risk to humans of lyme disease and other animals of louping ill virus.

At the extreme end of the push for reduced stocking rates is land abandonment. Destocking or reduced management in the UK has commonly led to semi-natural areas where the land is still viable for future use but is no longer a real danger of total abandonment. Factors contributing to this include the distance from roads, retirement and lack of succession, and poor communication networks. Difficult decisions need to be made in places where land abandonment is a risk, in order to conserve those areas and ensure biodiversity where there has been a long history of agriculture and human intervention. It is also important to consider the role of the human in biodiversity, as the potential for rural depopulation increases with a decline in the sheep farming of the Hills and Uplands. As much as we do not want to see the extinction of natural birds or fragile upland flora, we also do not want to see the extinction of the shepherd, surely one of the oldest occupations. With such a large sheep population in this country, and sheep farming being threatened throughout Europe, protecting the UK shepherd is an activity of international significance.

**Difficult Decisions Need to Be Made in Areas Where Land Abandonment Is a Risk, in Order to Ensure Biodiversity Where There Has Been a Long History of Agriculture and Human Intervention.**

**Biodiversity Aspirations**

NSA believes upland and hill areas would benefit from:*

- Appreciation of the value of sheep grazing in ecology and biodiversity
- Site-specific grazing prescriptions and exploration of outcomes approaches, as there is no such thing as an optimal grazing level for all habitats and different seasons/weather require flexibility.

**Did you know?**

- In one summer, 12 species of grasshoppers and four species of snails were recorded in the work of one sheep and 13 plant species in the wool or clumps: “Retaining a Ride” in this way allows plants and animals to range over greater distances than otherwise.

**Semi-Natural Landscape Aspirations**

NSA believes upland and hill areas would benefit from:*

- Easing of licences for control of problematic protected species, such as badgers, ravens and sea eagles, to a level that keeps farming and wildlife in balance.
- Recognition that the UK has very little truly wild landscape, instead the landscape, wildlife and ecology seen today is a result of thousands of years of farming.

**Did you know?**

NSA believes in semi-natural landscapes are:*

- A continuing landscape mosaic, where habitat diversity is maintained and natural processes continue to function.
- A landscape that is not based in science and would actually be a designer habitat not a natural one.
- A landscape that is not just about one species or habitat but about maintaining diversity and structure.
- A semi-natural landscape is not a Designer habitat, not a Natural one.

**Semi-Natural Landscapes**

The UK rural landscape is mostly as a result of man-made intervention. Wildlife and ecology have evolved to live around this human activity and rewilding on any scale would disrupt this. Britain is a small island with a high population that cannot accommodate the vast areas of wilderness sought after by some environmentalist groups.

Habitats would never return to their original wild state, only develop from a current point, and so rewilding is a highly emotional concept that is not based in science and would actually be a designer habitat not a natural one. Much of the rural landscape that we see today is thought to have been established by the time of the Magna Carta in 1215. Britain’s woodland areas had declined while wolves and other predators still populated our landscapes, before the introduction of large-scale sheep farms. Sheep were not the cause of the reduction of woodland and the reintroduction of predator species, such as lynx, would not help regenerate it.

In a country as densely populated as the UK it is important for the physical and mental wellbeing of urban dwellers to have access to the countryside, and the role of farming in providing this access is outlined on page 16. Access is complemented by the 15 National Parks in England, Wales and Scotland. Provision of ‘parks’ with ‘national public rights’ often means those areas suffer from environmental damage, disturbance to wildlife and damage to farm properties and livestock. These areas are not wildernesses, as they are in other parts of the world, and this must be considered within the rewilding debate. Special reference should be made to the current proposals to release the Eurasian lynx in the UK. NSA has completed a review of these proposals, which are to obtain a licence to release six adult lynx on one of three possible sites for a five-year trial period. NSA did not find any tourism benefits, as the lynx is such a shy animal, and concluded that sheep farming and its related ecology would be at substantial risk if the proposed scheme went ahead. A further reduction in sheep numbers from predation by lynx would do nothing to help the biodiversity in upland areas provided by sheep. NSA is concerned the lynx would be introduced as a protected species, adding to problems sheep farmers already have with the lack of options to control problematic populations of ravens and sea eagles.

Although not directly related to rewilding, the term High Nature Value (HNV) farming is another approach being promoted by conservation bodies. This concept appears more advanced in other parts of Europe, due to its potential to offer market opportunities for products produced in harmony with special semi-natural habitats. It could arguably be used in the UK, particularly to differentiate some of our rare and heritage breeds from global commodity products, but NSA feels many hill and upland farms are already functioning as high nature value farms and that any HNV scheme should be inclusive and not just to cater for extreme conservation approaches. The Scottish Government recognises this and describes more than 40% of land (2.3-2.4m ha farmland and 1.4m ha woodland) as being High Nature Value.
TOURISM, RECREATION & DIVERSIFICATION

Tourism and recreation is reliant on the countryside being a managed environment, as visitors come to see the landscape, views and clear long vistas. Tourism would be negatively affected if the landscape was unmanaged and blocked with trees and scrub, and recreation opportunities would be limited without easy access.

There are 225,000km of footpaths in England and Wales, while the 15,000km of pathways in Scotland were supervised in 2009 by most land becoming open access to walkers allowing by the Open Access Code. In Northern Ireland there are very few rights of way but the kindness and trust of landowners more WILN is able to provide quality walks” totalling 1.566km of footpaths. The ten National Parks in England, three in Wales and two in Scotland total 2,265.880ha.

Contact with green space and the natural environment is important for health, with green exercise” linked to improvements in self-esteem and total mood disturbance. This is important in abattoirs and auction marts. A research project in 2012 found that 34,000 people were employed on English sheep farms alone, supporting a further 111,405 jobs in allied industries and contributing a value of £291.4m to employment. Farmers and farming families recycle money in the local community by using local shops and businesses, by using local amenities such as transport, church halls and schools, and being part of local councils and committees. Farming families are often the backbone of rural communities, and it is the upkeep of the services that rural communities can provide that pays off during the tourist season. Many upland sheep farms are reliant on direct

FACTFILE

At least 66% of the open access land in England is found in the uplands, attracting 40 million visitors and making £1.78 billion for local economies every year. Rural Wales attracts 18.9m day visits and 2.5m overnight staysers in a year, spending £674m and £367m respectively. The Scottish countryside sees 2.8m overnight staysers and 26m day visitors in a year. Tourism in Northern Ireland is recovering and providers saw positive increases in visitors. In 2015 70% of hotels and 47% of attraction operations employees spend their money back into the local economy through local shops and accommodation. The project also encompasses a community fund, topped up yearly, which organisations can apply to for funding towards different local projects.

THE COMPLEMENTARY ROLE OF SHEEP IN UPLAND AND HILL AREAS

Second homes and holiday cottages are a contributor to driving young local people out of a local area and reducing acceptable retirement options for older farmers.
CULTURE & HERITAGE

Culture and heritage can be typified by the physical features found in rural areas, and the traditional customs and practices that survive to this day. Both are equally important in understanding the unique source of identity and learning in an area.

Stone walls and barns spring to mind when thinking of physical features, and these are maintained because they still have a role in containing stock, as well as being a link to past agricultural systems and important to local history. Environmental stewardship encourages the preservation of heritage features too, such as ridge and furrow ploughing patterns and old sheep washes. These are important on an international level, with the UK having an obligation to preserve traditional knowledge, innovations and practices.

Cultural heritage covers traditional practices, customs and dialect too. Some are everyday names of places like Shepherds Bush or pubs like the Golden Fleece, and others are traditional words still used by shepherds’ areas and the country. The farming family is widely viewed as the social institution upholding the traditional upland way of life. Farmers with ancestral links to the local area have a strong sense of belonging and link production to their social status within the farming community, demonstrating their desire to make a living from farming.

The future of the commons is a concern for many. As with other sectors of upland farming, there is a reducing pool of knowledge and skills as farmers cease farming and young people move out of the industry in search of better wages. Successful farming in these areas requires knowledge of the specific common, as no two are the same and there is a long tradition of commons working together and being mutually dependent on each other’s stock management practices. Barriers for new entrants could be overcome through training opportunities with current graziers.

Crofting is a traditional practice found in the Scottish Highlands and Islands where a tenant crofter is responsible for ensuring their area of land remains productive. There are around 18,000 crofts in total (approximately 25% of the land in the Highlands and Islands) supporting up to 12,000 crofting households and around 33,000 individuals. In Scottish parishes dominated by crofting land use, up to 80% of the farmed land can be common land so many of the issues are similar to those facing commons elsewhere in the UK. Crofting has a strong cultural identity in parts of Scotland, and this should be of benefit for recently developed schemes to encourage young people to learn traditional skills and safeguard their culture and history.

However, most crofters are now part-time, subsiding their croft from other employment, and crofting is potentially very vulnerable to a reduction in direct or agri-environment payments and must not be forgotten in Brexit discussions.

FARMERS WITH GRAZING RIGHTS FOR COMMONS ARE GENERALLY IN FAVOUR OF INVOLVEMENT IN AGRI-ENVIRONMENT SCHEMES, BUT THEY SEEK FLEXIBLE SCHEMES THAT CAN BE SITE SPECIFIC AND ADAPTABLE DEPENDING ON CHANGING CONDITIONS.

As with other upland and hill areas, commons have been influenced by fluctuations in policy over a period of years. Farmers with grazing rights for commons are generally in favour of involvement in agri-environment schemes, but they seek flexible schemes that can be site specific and adaptable depending on changing conditions. For commons, this means allowing farmers and graziers to design their own grazing prescriptions for the benefit of the common and to best mitigate any costs occurred, such as fencing, off-wintering and reduced labour. This must be taken into consideration as the UK looks towards its future outside the EU and develops its own schemes to support marginal areas. One concern that must be addressed is the protection of legal rights when agri-environment schemes or land designations are agreed.

Jeff Gwillim, who farms at Talgath, Beaco, says “the common land his sheep graze has seen “the effects of both overgrazing and under-grazing over recent times. He comments: “We experienced overgrazing when we had the heritage payment scheme, which meant many plant species did not have chance to grow. Now we are seeing the opposite effect, as minimum sheep are required to claim payments and bracken is encroaching on land previously suitable for grazing. Appropriate stocking levels are needed to keep everything growing as it should and best manage the land.” Mr Gwillim also highlights the cultural significance of farmers working together in the unique practice of commoning. He says: “Our hill is so big that if we don’t work together we can’t get the sheep gathered. We also work together to help tackle diseases like sheep scab effectively. With less people turning sheep onto the commons, the remaining sheep have difficulty managing their sheep over such a large area. The sheep are spreading so far it is also leading to under-grazing on the less palatable areas of the hill, as hill can be more selective.”

COMMON LAND & CROFTING

Ranging from extensive pastoral grazing, woodland areas, coastal marshes and even land near towns, common land is mostly (but not exclusively) found in upland and hill areas. Beneficial for heritage, public access and environmental factors, commons are protected from development and agricultural intensification through grazing rights and statutory protection. They provide space for exercise, recreation and fresh air for the wider public, who often do not understand or appreciate the complex practice of commoning.

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THE SKILLS, KNOWLEDGE AND CULTURE OF SHEEP FARMING IN THE UPLANDS AND HILLS MUST NOT BE LOST TO THE NEXT GENERATION — BUT EXISTING FARMERS ALSO NEED TO BE UP-SKILLED AND TAKE ON NEW TECHNOLOGIES VITAL FOR IMPROVEMENT.

SHEEP MANAGEMENT SKILLS

The uplands and hills require specific, specialist sheep management skills in order for stock to be cared for and businesses to operate successfully. If generations do not succeed their parents, or new entrants are not given the opportunity to learn directly from the previous generation, the skills, knowledge and culture which they have learned will be lost, locally and for the industry.

There is also an important need for existing farmers in the sheep industry to be up-skilled and take on new technologies vital for improvement. There is no shortage of knowledge exchange provision in the industry, but there are key capacity improvements that could be made in targeting and engaging producers with this information. For example, the realised returns of genetic improvement technology in the UK sheep industry are substantially below their potential, despite the fact they currently bring an annual £10.7 million benefit to the farmers making use of it. There are numerous existing knowledge exchange schemes, including those provided by UK levy bodies and/or funded by the Government — and the Government has recently described its vision for the UK to become a world leader in agricultural technology, innovation and sustainability. It recognises the UK agricultural sector already has a strong set of skilled workers, world-class retailers and is a traditional sector of the UK levy bodies and/or funded by the Government — and the Government has recently described its vision for the UK to become a world leader in agricultural technology, innovation and sustainability. It recognises the UK agricultural sector already has a strong set of skilled workers, world-class retailers and is a traditional sector of the UK, so as relevant as possible, and targeting is aimed at all family members to recognise the different roles they play in sustaining the family business. Helen says: “It has helped the whole family attract new skills and get formal training. We really value it as it usually fits in with the farming calendar and stays relevant to the needs of upland farming and our community. My son has particularly enjoyed several meetings and brought new ideas back to the farm.” Projects have enjoyed several meetings and brought new ideas back to the farm. Projects have included social media, business planning, animal health studies, farmer-led training, government agency workers and study trips to Switzerland. It has also linked with the Forest of Dartmoor Fire Plan to provide training and equipment for 29 commoners to respond quickly to wildfires. Helen adds: “The fire training has given commoners the confidence to manage the common better, reduced the risk of wildfire and has given us a plan of action if there is a problem.”

OPPORTUNITIES FOR NEW ENTRANTS

It is estimated that for a sustainable future agriculture must attract 60,000 new entrants over the next decade — and sheep farming can often be a great first step towards a larger, more diverse enterprise as it traditionally carries lower capital and investment costs and less need for a permanent base.

There are evident successes and opportunities in the sheep industry by attracting and maintaining new entrants and, although starting from a low base, there does appear to be an increase in the number of young people attending agricultural events, industry activities and sheep-related courses at agricultural colleges and universities. It is good news for the industry if this means the new blood coming through is knowledgeable and skilled, but these people must continue to be inspired and provided with the tools for best practice. This is where the biggest gains can be made, as young people tend to be more open to the use of new technologies and are more likely to adapt to future needs and drive the industry forward. In order to compete in a volatile market, they must have an entrepreneurial outlook and seek to add value through greater efficiencies by cutting costs and increasing outputs. The NSA Next Generation initiative is not alone in its work to support young and new entrants to the industry. Others UK-wide projects include work by Fresh Start and the Prince’s Countryside Fund, and operate alongside national projects such as Venture from the Welsh Government and a Scottish Forestry pilot for new entrants, plus local projects including ones by the Farmer Network in Cumbria and the Yorkshire Dales.

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Activities allied to sheep farming also need to attract new entrants. These include veterinary, research, trade and supply companies, food science and environmental fields. Otherwise sheep farmers will not have access to the services and advice they need, or will incur increased costs by having to source them from further afield.

ALTHOUGH STARTING FROM A LOW BASE, THERE DOES APPEAR TO BE AN INCREASE IN THE NUMBER OF YOUNG PEOPLE ATTENDING AGRICULTURAL EVENTS, INDUSTRY ACTIVITIES AND SHEEP-RELATED COURSES AT AGRICULTURAL COLLEGES AND UNIVERSITIES.

Aspirations for Sheep Management Skills

NSA believes upland and hill areas would benefit from identification of skills gaps in the industry and a joint approach to up-skilling the current workforce for optimal production and utilisation of new technologies.

Aspirations for New Entrants

NSA believes upland and hill areas would benefit from:

- Support and encouragement of future generations entering upland livestock farming with a holistic focus on productivity and provision of public goods.
- Support for existing and older farmers to step back with dignity.

NSA Next Generation supports the future of the sheep sector by encouraging participation by young people through training, competitions and events. Activity also includes a yearly intake of up to 12 NSA Next Generation Ambassadors. Peter Stocker, NSA Chief Executive, explains: “These individuals are selected for their passion for the future of the sheep industry and undertake several training sessions and seminars over the course of the scheme, to provide them with the ideas and tools for a prosperous business. The rigorous selection process ensures an even spread from across the UK, which also helps sustain the future of NSA’s vital work at a regional level, encouraging future office holders and volunteers. Themes of the sessions range from performance recording and grassland management to financial skills and media training.”
CONCLUSIONS AND REFERENCES

ECONOMIC OUTPUTS
A stable, sustainable sheep industry is essential to supply domestic, export and developing markets with nutritious and enjoyable food for a growing world population that is expanding in ethnic diversity and wealth. Sheep meat will be the primary economic driver for the industry for the foreseeable future, with breeding stock and store lamb production being a key part of this. Decision makers and the public should be better informed on the importance of red meat, in particular sheep meat products, as part of a balanced diet with responsible supermarkets. The support of large retailers to improve public awareness is of great importance, but also to promote products that support the traditional hill system. Adding value through wool and other sheep related products is crucial and retailers and textile manufacturers could develop the British wool industry to driver better prices for fleeces. The traditional stratified sheep industry, unique to Britain, is an economic, practical and environmentally sensible way of sheep farming, making the most of the different characteristics of breeds and environments. However, the stratified sector must rise to the challenges presented, particularly in relation to disease control and information sharing. The loss of breed traits of hill pure breeds and upland Mules would change the entire face of the sheep industry and it is highly desirable to create and maintain a wide range bank of genetic material. It is vital the hill and upland sheep sector, producing sustainable meat and wool, is additionally supported and financially rewarded for the public goods and services it provides.

ENVIRONMENTAL LINKS AND OUTPUTS
The unique environment created by hundreds of years of upland farming provides a valuable source of quality water, carbon sequestration and biodiversity. The uplands provide an environment of minimal input use and pollution, giving clean, fresh water much further downstream and combating carbon dioxide emissions by transforming the gases into valuable stores of carbon. Rough vegetation and areas of woodland are excellent forms of flood mitigation and create habitats for the many species that share the environment with grazing livestock. Farmers are important managers of their environment and must be encouraged to maintain the mosaic habitats of heather and shrubs, by the removal of broken through grazing and other forms of management. Appropriate stocking rates are essential to environmental outputs and schemes must be flexible and site-specific in order to avoid the detrimental effects of both over- and under-grazing. It is important the traditional practices and environmental management undertaken by farmers are not undermined by a desire of other interest groups to rewild the landscape, reducing our farming capital and making the countryside inhabitable to more fragile plant and animal species, and less accessible to visitors.

SOCIETAL LINKS AND OUTCOMES
Upland communities, of which farmers are a central part, provide a wealth of social and health benefits for residents and tourists alike. Many people working in urban areas look to the great outdoors for recreational activities and to boost their mental and physical health, with proven results. They also provide a wealth of history and culture, with many traditional practices, buildings and ways of life maintained by the local people. Farmers pride themselves on their work and achievements, which often span generations, and the strong sense of place which their ancestral links provide them. Attracting visitors to the areas boosts the local economy and allows for farmers to diversify into travel and tourism, increasing their incomes from the otherwise poor returns from farming. The opportunity for succession and entrepreneurship encourages young people to stay or move into the industry, and this must be encouraged by providing both existing farmers and the next generation with skills and inspiration to drive the sector forward.

SUMMARY OF ASPIRATIONS
• Improved resources for marketing of upland lamb and other sheep products.
• Mitigation against market volatility.
• Promotion of the health benefits of predominantly grass-fed red meat to a wider audience.
• Sustainable prices for producers and consumers.
• Recognition of the value of upland and marginal sheep genetics to the UK gene pool and its wider sheep systems.
• The development of practical health assurance schemes and increased sharing of information by sellers to give confidence to buyers of breeding stock and store lambs.
• Encouragement of retailers and consumers to consider the unique benefits of British wool in an attempt to get better and fairer prices for sheep farmers.
• Encouragement of retailers to embrace heritage breeds as new and diverse products, resulting in more mainstream interests in these niche markets.
• A farm support and reward system, developed post-Brexit, which caters for all agricultural sectors but specifically increases the financial recognition of provision of a broad range of public goods.
• Payment (via public and private means) for eco-system services based on reward and deliverables, and not income foregone.
• Deeper understanding of the role sheep and the uplands play in prevention and mitigation of flooding and the supply of vital clean water to many urban communities.
• Trees and valuable areas of scrub within grazing areas no longer being classed as permanent ineligible features (PIF) under the Basic Payment Scheme or its post-Brexit successor.
• Resolution of contradictions between the Basic Payment Scheme and agri-environment schemes, and steps taken to ensure no such contradictions exist in post-Brexit schemes.
• Recognition of the extreme importance of the uplands as carbon sinks, in particular peat soils, and the role that farmers play in protecting them.
• Recognition of the environmental and social benefits of grazing and farming to reducing risks of wildfires.
• Encouragement of farmers to control bracken responsibly.
• Recognition of the value of sheep grazing to ecology and biodiversity.
• Site-specific grazing prescriptions and exploration of outcomes approaches, as there is no such thing as an optimal grazing level for all habitats and different seasons/weather require flexibility.
• Easing of licences for control of problematic protected species, such as badgers, ravens and sea eagles, to a level that keeps farming and wildlife in balance.
• Recognition that the UK has very little truly wild landscape, instead the landscape, wildlife and ecology seen today is a result of thousands of years of farming.
• Proportionate easing of planning regulations, particularly in National Parks, to encourage and allow investment and appropriate energy-generation projects.
• Improved broadband access and mobile phone coverage, to allow resource access and facilitate diversification.
• Recognition of the multiplier effect and how farm enterprises support many other local business and services.
• Maintenance and investment into local infrastructure that supports hill farming families and others, such as schools, banks, roads and medical facilities.
• Recognition of the historical value, culture and heritage that upland communities provide, and the strong sense of belonging farmers place on their ancestral links to their farm or local area.
• Support for traditional commons and crofting communities and the goods and services they provide, allowing them to continue as a viable farming practice.
• Identification of skills gaps in the industry and a joint approach to up-skilling the current workforce for optimal production and utilisation of new technologies.
• Support and encouragement of future generations entering upland livestock farming with a holistic focus on productivity and provision of public goods.
• Support for existing and older farmers to step back with dignity.

This booklet is a summary of the NSA’s full Complementary role of sheep in upland and hill areas report. Go to www.nationalsheep.org.uk/policy-work for the full version, which includes all the references for statistics and comments made on those pages.