

**Stakeholder narratives of
Dartmoor's Commons:
tradition and the search
for consensus in
a time of change**

**Stories from Dartmoor -
hill-farming, wildlife, peatlands,
historic landscapes and re-wilding:
whither the Commons?**



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Stakeholder attitudes to the narratives of the Dartmoor Commons:
tradition and the search for consensus in a time of change.

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A handwritten signature in black ink, appearing to be 'AC', with a long horizontal stroke extending to the right.

Signature:

Traditions which appear or claim to be old are often quite recent in origin and sometimes invented.
Hobsbawm (1983)

*The time of the Elves is over – my people are leaving these shores. Who will you look to when we've gone?
The Dwarves? They hide in their mountains seeking riches – they care nothing for the troubles of others.*

Elrond
Tolkien (1956)

*Dartmoor's surviving commoners are already the beneficiaries of the dissolution of the rights of others. As
such, it is perfectly reasonable to ask whether year-around grazing with Scottish Blackface sheep or
Galloway cattle on Dartmoor is in any meaningful sense traditional.*

Kelly (2017)

*Those traditional cattle enhanced the land in a most astonishing way because of their non-specialised
grazing This kind of grazing on extensive pastures, near enough replicating that of aurochs, was very
sympathetic with nature and enhanced biodiversity wonderfully.*

Dennis (2020)

*The cowman who cleans his range of wolves does not realise that he is taking over the wolf's job of
trimming the herd to fit the range. He has not learned to think like a mountain. Hence, we have dustbowls
and rivers washing the future into the sea.*

Leopold (1949)

*The number of sheep thus summered and kept the year round upon the forest of Dartmoor, the
depasturable parts of which, in a dry summer, is one of the best sheep-walks in the kingdom, is not easy to
ascertain; but if any inference can be drawn from the returns made from Widdicombe and Buckland in the
Moor, their numbers must necessarily be very considerable indeed.*

Vancouver (1808)

*Advice is a dangerous gift, even from the wise to the wise,
and all courses may run ill.*

Gandalf.
Tolkien (1954)

*By now the creaturely world is absolutely at the mercy of industrial processes, which are doing massive
ecological damage. How much this may be repairable by economic and cultural changes remains to be
seen.*

Berry (2017)

*.. the Battle of Britain is about to begin. Upon this battle depends the survival of Christian civilisation. Upon
it depends our own British life... The whole fury and might of the enemy must very soon be turned on us...
If we can stand up to him, all Europe may be freed and the life of the world may move forward into broad,
sunlit uplands.*

Churchill (1940)

*The law locks up the man or woman
Who steals the goose off the common
But leaves the greater villain loose
Who steals the common from the goose.*

17th century folk poem

*My culture – and never doubt for a moment that you're going to be hearing a lot more about my indigenous
and cultural rights, predates the artificial boundaries of the National Park.*

Coaker (2017)

*I'm not from that very narrow group of local families that make up
the hill-farming patriarchy of Dartmoor*

A Dartmoor hill-farmer

Yes there has been overgrazing, but ... the environmentalists have lost more than we ever did.
Another Dartmoor hill-farmer

Dartmoor takes its rent. Scratch Dartmoor's back and it will pick your pockets.

A Dartmoor hill-farmers' expression

Faithless is he that says farewell when the road darkens.

Gimli.
Tolkien (1954)

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This thesis is dedicated to my mum, dad and 'Cesca. Had they been alive today, none of this would have happened.

List of acronyms

AES	Agri-environment Scheme
ADAS	Agriculture and Development Advisory Service
BPS	Basic Payment Scheme
BSE	Bovine spongiform encephalopathy
DaCC	Dartmoor Commoners Council
Defra	Department for the Environment, Food and Rural Affairs
DFF	Dartmoor Farming Futures
DHFP	Dartmoor Hill Farm Project
DNPA	Dartmoor National Park Authority
DoC	Duchy of Cornwall
DPHT	Dartmoor Pony Heritage Trust
EH	English Heritage
ELMS	Environmental Land Management Scheme
EN	English Nature
ESA	Environmentally Sensitive Area
EU	European Union
FW	Farmers Weekly
HE	Historic England
LSU	Livestock Unit
MAFF	Ministry of Agriculture, Fisheries and Food
NBAR	Native Breed at Risk
NCC	Nature Conservancy Council
NE	Natural England
NFU	National Farmers Union
NGO	Non-governmental Organisation
NSA	National Sheep Association
NT	National Trust
PAL	Premier Archaeological Landscape
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SPS	Single Payment Scheme
SSSI	Site of Special Scientific Interest
WES	Wildlife Enhancement Scheme

Abstract

For over 40 years there has been conflict between hill-farmers and conservationists over the way that the Commons of Dartmoor have been farmed and the impacts that this has had on the moor's habitats, wildlife, peat and archaeology.

This thesis looks at the attitudes of the various stakeholder groups involved via the use of semi-structured interviews. It uses Narrative Policy Analysis and the Narrative Policy Framework to construct and analyse a series of stakeholder narratives in an attempt to understand why the issues are so contested and the search for consensus has been so elusive.

It shows how the dominant policy narrative has evolved over time and how this has been impacted by a series of competing counter narratives, in particular those focusing on grazing intensity and vegetation burning techniques. It details how restrictions to farming methods have impacted on traditional hill-farming practices and have led to a series of unintended consequences. As a result, further counter narratives have emerged, which either seek consensus between all the stakeholders or promote specific interests in an attempt to favour the wildlife, the archaeology, the hydrology or a re-wilded landscape.

It shows that the issues on Dartmoor are complex and nuanced and it is suggested that historically some of the leading narratives have been too narrow in their focus and as a result may have missed other important causal factors such as atmospheric pollution and climate change.

Hill-farming and as a result the traditional practices which have created the moorland landscapes for which Dartmoor is famous, are under considerable pressure as a result of changes to subsidy payments as a result of the UK's decision to leave the EU, the economic prospects for hill-farming generally and climate change. This narrative approach to the environmental and hill-farming conflicts on Dartmoor has identified areas which should be addressed so the moor's special character can be conserved and enhanced as a pastoral landscape, at least in part, into the future.

1. Setting the scene

1.1. Preamble

I have spent 35 years working in conservation and during my career I have worked for the National Trust (NT), The Wildlife Trusts and the Royal Society for the Protection of Birds (RSPB). My first degree was in Zoology and Ecology and my MSc trained me as a conservation practitioner and applied ecologist.

Being educated as a natural scientist my paradigm has been one of positivism, my ontology has been to believe in a single reality and my epistemological outlook has been based around the idea that reality can be measured. Thus, my focus as a practitioner has been the search for publications and papers which have used reliable and valid tools to research how the natural world in the form of species and habitats operate in the UK. This has been achieved by a large cohort of academics and other researchers undertaking experimental research and surveys. Such work is usually quantitative in its nature and is validated by statistical analysis. In many cases the results and conclusions from a specific study can be applied in different locations and contexts.

In reality though, my career as a practitioner has been on one hand, one of conflict management and resolution and on the other, a quest to manage the land owned by the conservation bodies I have worked for in a way which delivers their conservation goals.

Conflict has been an ever-present partner to me over the past 35 years as conservationists have sought to align public policies with conservation aspirations. As numerous reports catalogue this has proved very difficult and as a result wildlife is much less abundant now than it once was.

The conflicts around the management of the uplands also co-incided with my search for how to manage land, in this case the NT's 3500 acre holding in the Upper Plym valley on Dartmoor. The ecologist and the conservationist were united as one, over the observation that grazing and unsustainable burning practices had damaged the uplands, to prevent this from happening stocking levels needed to be dramatically reduced and the burning needed to be stopped on the bogs and scaled back elsewhere.

This is exactly what happened – stocking numbers were reduced and burning regimes were altered – detailed restoration prescriptions were drawn up, based upon the science via the evidence-led approach, but there was a problem. It didn't work, the Commons continued to deteriorate, heather continued to disappear and large swathes of the moor were cloaked in purple moor grass (*Molinia caerulea*)¹. The 'science' had failed.

The slow realisation of this situation is what prompted me to embark on this PhD on the conflicts on the Commons of Dartmoor. The uplands story as portrayed by the media and its actors is full of narratives and framing. Not only had the science failed but the narratives around the Commons and their condition were extremely complex. No one really knew the 'whole' story and the search for consensus was bogged down by acrimonious arguments where the many stakeholders involved on the Commons largely repeated their own positions without fully listening to or trying to understand other perspectives.

Whilst I had become somewhat obsessed with grazing numbers, heather cover and detailed management prescriptions I knew I didn't want to do a science-based PhD. I was interested in people's attitudes and the politics. As a result, I began to train as a social scientist.

I needed to place an additional paradigm alongside my positivism. Of course, the science hadn't actually failed it just hadn't researched all the relevant variables – for example, the ecologists hadn't taken enough account of atmospheric pollution and climate change.

I became a post-modern, post-positivist, where the ontology suggests that there is no single reality, rather it is created by individuals and groups – it is a social construction. This epistemology suggests that reality needs to be interpreted so that the underlying meaning of events and activities can be understood. My approach now needed to be ethnographic and my research would be largely qualitative, conducted via interviews, case studies and narrative analysis. I would need to become more reflective and develop the skills of reflexivity. I would need to remember that I was once an actor in the story. My conclusions would be contingent on time and place and would not be transferable.

¹ Hereafter known simply as *Molinia*, as this is what the hill-farmers and conservationists on Dartmoor call it.

Perhaps most importantly I need to change my mindset as a conservationist. As Adams (2015 p64) said conservationists

“see the conservation of living diversity as a moral necessity, something that is self-evidently right and just has to be done. In the language of conservation biology, conservation is a ‘mission’. Anything that detracts from that mission, or contextualises it as just one among other competing ideas or interests is therefore inherently suspicious”.

This thesis seeks to investigate and understand the views and opinions of the various stakeholder groups and individuals who are involved with the management of the Commons of Dartmoor. As such this research is firmly grounded in the social sciences but it does draw on research from many other disciplines.

My research involves the use of interviews, discourse analysis, my own personal experiences as a practitioner in the field along with a review of the relevant literature. It also uses Narrative Policy Analysis (Roe 1994) and the Narrative Policy Framework (Jones et al 2014) to study the different narratives that the various stakeholder groups deploy to argue their positions.

Roe (1994 p2) developed Narrative Policy Analysis which he suggested was a good way of studying policy issues where there was a high degree of complexity, polarisation and uncertainty. He also suggested that ‘stories [which he called narratives] commonly used in describing and analysing policy issues are a force in themselves and must be considered explicitly in assessing policy options’.

Jones, Shanahan & Macbeth (2014) develop the narrative approach in their Narrative Policy Framework where they argue that it is possible to analyse narrative using qualitative and quantitative approaches.

During my 11 years working for the NT on Dartmoor (2004-2015) I was involved in many meetings and site visits where issues relating to the management of the Commons were debated and contested. The main topics of conversation involved discussing whether the Commons were over-grazed, whether the historic environment was deteriorating, should the mires be re-wetted and more latterly whether the Commons should be re-wilded. In addition, the Dartmoor National Park Authority (DNPA) went to considerable lengths attempting to facilitate a consensus via various initiatives (introduced and discussed in chapter 7) which involved all the

main stakeholders. Finally, the hill-farmers repeatedly stated that they did not consider that they were being treated with respect or listened to and that their traditions were being damaged. These elements of my job as General Manager for Dartmoor introduced me to the various conflicts and stakeholders which would later form the basis for my narratives and interviewees.

The Dartmoor narratives which I created prior to the commencement of the interviews are set out in Table 1 and those which were developed following the interviews and research are presented in Chapter 11. The conflicts and policy debate on the Commons of Dartmoor seem an appropriate study area where these approaches can be conducted using the data collected from the interviews.

Table 1 The conflicts on the Dartmoor Commons I was aware of, prior to commencing my research, transposed into narratives using the typology of Roe (1994)
The dominant policy narratives
Dartmoor Farming Futures narrative Held by the Dartmoor Moorland Vision Group which consists of the Dartmoor Commoners Council, Natural England, Historic England, Defence Estates, the Rural Development Service and the DNPA. Their position is that they see the moorland areas of the National Park as a grazed open landscape that delivers multiple public benefits, including public access, biodiversity, conservation of key archaeological features, water and carbon management and high-quality food production.
The Dartmoor hill-farmers narrative Over thousands of years the hill-farmers of Dartmoor have created the landscape we know today. They are farmers first and foremost who want to primarily produce quality lambs and cattle. They are the guardians of the moor but are not park rangers. Today their traditions are threatened by increasing government interference, unsustainable farm incomes, Brexit, their age and the difficulty of encouraging new entrants to hill-farming.
Counter-narratives
<i>Over-grazing and unsustainable burning</i> The Commons are not in 'favourable condition' because they have been historically over-grazed and swaled unsustainably. The reduced grazing levels seen today are still not low enough to see habitats such as heather moorland recover.
<i>Restoring the mires</i> The water suppliers and carbon conservers who would like to see more re-wetting Historically the blanket bogs of Dartmoor were wetter but as a result of historic activities such as peat cutting and more recently farming practices they have dried out. Re-wetting is required to enhance water quality and human water supplies as well as conserving the carbon stores.
<i>Re-wilding</i> Upland farming is an entirely uneconomic activity despite the huge subsidies it receives. The agricultural outputs are tiny in a national context but are delivered at a huge environmental cost. The Commons of Dartmoor has been 'sheep-wrecked' and as a result the high moor should be re-wilded and extinct species should be reintroduced which would deliver numerous environmental and other public benefits.
Non-stories (later renamed by me as rebuttal counter narratives)
<i>Increase the grazing pressure</i> The moors should be grazed more heavily to allow the historic environment to be visible Dartmoor contains one of the richest archaeological landscape in Europe. Recent policies which have reduced grazing levels to enhance wildlife have been a failure allowing scrub and coarse grasses to dominate thus hiding and damaging the important historic landscape. Grazing levels need to increase dramatically.
<i>The mires should not be re-wetted</i> Re-wetting Dartmoor's mires should cease immediately. The engineering works required to re-wet the mires introduces machinery into areas of the moor that have never visited by excavators. It damages the historic environment and it devalues the land for sheep and cattle grazing. There is no evidence that re-wetting the mires delivers any environmental benefits.

1.2. Research Questions

What role do narratives play in the management of the Commons on Dartmoor and how can they be used to provide possible solutions to the future management of Dartmoor's Commons in light of environmental and political change?

1.3. Dartmoor

Dartmoor is an upland area in south west England largely consisting of open rugged countryside, steep wooded valleys and enclosed farmland – it is 954km² in extent. High Willhays at 621m is the highest point in southern England. On account of its outstanding natural beauty it is one of the UK's National Parks – a designation it was granted in 1951². It is popular with the public for a wide range of recreational activities and it has been estimated that over 10m people per annum visit Dartmoor³.

Dartmoor is a cultural landscape that has been created over the past 5000 years by many generations of graziers starting with the first farmers in the Neolithic period (Mercer 2009). The unenclosed moors of Dartmoor are common land. The Commons of Dartmoor amount to 35,882 ha⁴ and consist of the Forest of Dartmoor, the Commons of Devon and Manorial Commons (Fox 2012 and Mercer 2009). There are 850 registered Commoners who have the right to graze animals on the Commons but in reality, less than a quarter of these actually exercise their rights⁵.

20,673 ha (57.6% of the total) of the Commons of Dartmoor are designated as two large Sites of Special Scientific Interest (SSSI) and both are designated as Special Areas of Conservation (SAC) in the Natura 2000 network⁶.

Public conflicts on Dartmoor are largely a phenomenon of the last 100 years or so. Prior to this disputes between commoners and owners would have been resolved privately by custom and tradition backed up by Manorial Courts (Rodgers et al 2011). However, during the 20th century a series of high-profile conflicts occurred on Dartmoor which included parties not native to the moor involving its military use, afforestation, reservoir construction, the building of the Okehampton by-pass, the North Hessary television mast, access disputes and hill-farming practices on the

² http://www.dartmoor.gov.uk/_data/assets/pdf_file/0014/41252/lab-geninfo.pdf (Last accessed 8/6/18)

³ http://www.dartmoor.gov.uk/_data/assets/pdf_file/0013/41260/lab-tourism.pdf (Last accessed 8/6/18)

⁴ Dartmoor National Park Authority (2013) Dartmoor Commons, website accessed 24/11/16

<http://www.dartmoor.gov.uk/learningabout/lab-printableresources/lab-factsheetshome/lab-dartmoorcommons>

⁵ Dartmoor Commoners Council website, (Last accessed 8/6/17)

http://www.dartmoorcommonerscouncil.org.uk/menu_page.php?id=51 , (Last accessed 8/6/17)

⁶ The Natura 2000 network is for sites of European importance designated under the Habitats Directive.

Commons (Kelly 2016).

The majority of these issues are now either resolved or are currently dormant. However, the conflicts around farming and the Commons of Dartmoor have been active for over 70 years and are still unresolved.

These disputes stem from two irreconcilable Acts of Parliament: the 1947 Agriculture Act and the 1949 National Parks and Access to the Countryside Act. The former set the basis of agricultural policy for approaching 50 years. The Act aimed to improve the UK's home-grown food security, deliver affordable food and provide the farmer with a living wage. The 1947 Act also saw the beginning of a new era of productivity and intensification underpinned by guaranteed farm prices, agricultural improvement grants, increased agricultural research and advice for farmers. The 1949 Act provided the legislative framework which would see the gradual creation of National Parks in England and Wales, the designation of the SSSI network along with greater freedoms with regards to accessing the countryside (Winter 1996).

With hindsight it is easy to see that these two pieces of legislation are incompatible but at the time of their enactment there were few who thought that to be the case. The considered view was that the fabric and attractiveness of the British countryside and the wildlife that it contained was the product of a farmed landscape and following years of agricultural depression farming needed a boost so as to ensure that land was not abandoned. Immediately after the Second World War no one foresaw the incredible technological advances in agriculture from pesticides and fertilisers to machinery and crop/animal breeding (Hodge 2016).

In a Dartmoor context, guaranteed farm prices and after the United Kingdom (UK) joined the European Union (EU), headage payments (subsidies based on the numbers of stock kept on the moor) greatly increased the number of stock on the Commons to a level where significant damage was being reported (Kelly 2016). As a result, at least in ecological terms, the Commons of Dartmoor have been deteriorating since the 1960s and despite millions of pounds going into agri-environment schemes to undo the damage and a large research programme the search for “favourable condition”⁷ has proven to be elusive.

⁷ The term used by Natural England to describe whether the designated feature(s) of a site are being adequately conserved

1.4. Giving Dartmoor's wildlife a bit of context

It is all too easy when listening to the debates and reading popular articles and papers to assume that our upland landscapes have been largely destroyed and are now absent of wildlife and interest. Writers such as Monbiot regularly describe upland habitats as sheep-wrecked (e.g. Monbiot 2013 pp153-166) and indeed he called Dartmoor the same in 2015 (Monbiot 2016a). Defra Board member Ben Goldsmith, in a tweet said the following *"Imagine a foreign visitor to England deciding to visit Dartmoor 'National Park', and arriving at this utterly overgrazed, denuded, treeless, flowerless, birdless wasteland. Sheep and crows and nothing else"* (Colston 2018).

Dartmoor is described in *A Nature Conservation Review* as follows *"Dartmoor has the strongest claims for the site representing the upland ecosystems of south-west England. It has the greatest elevation, the largest upland area, the most interesting geological features, the most varied plant communities and by far the most important blanket mires in the Region. North Dartmoor is regarded as the most important area, for it contains the highest ground reaching 600m and has a better development of certain upland vegetation types than the southern part of the area."* (Ratcliffe 1977 p312). It is unquestionably also the case that the conditions of the Commons described by Ratcliffe have deteriorated since that time as a result of the intensification of grazing and swaling practices encouraged by headage payments and this is described in detail in Chapter 2. Nevertheless, to describe Dartmoor's Commons as *"sheep-wrecked"* and an *"utterly overgrazed, denuded, treeless, flowerless, birdless wasteland"* is a serious misrepresentation of the actuality in my view based on my professional experience and training.

This section does not aim to be comprehensive, it is just an indication that much wildlife does still flourish on Dartmoor's Commons. Cuckoos which have almost declined to extinction in lowland Devon still flourish in good numbers on Dartmoor's Commons, Dunlin numbers are increasing on Dartmoor's blanket bog areas and whilst Ring Ouzels are declining as a result of climate change they still have a foothold on the moor (Beavan & Lock 2016). On the NT's 2000ha estate in the Upper Plym, a survey astonishingly recorded over 1000 pairs of Meadow Pipit and 600 pairs of Skylark, on a Common which is heavily dominated by under-grazed, rank, tussocky *Molinia* (Price & Slader 2016). Bumblebee Conservation published an Atlas

of Devon's bumblebees and described the area around Birch Tor near the Warren House Inn (SX6881) as one of the top three sites in the county (Saunders 2019). The nationally rare and declining High-brown Fritillary still has strong populations on the fringes of a number of Commons (Baldock & Walters 2008). These are just a few examples, there are many more I could have provided.

The point of this is, that whilst many of the moorland habitats are in need of restoration, all the necessary building block species are still extant on the moor albeit at currently reduced population levels. Additionally, many Commons on Dartmoor are still good places to go to see wildlife today, something I do a great deal.

1.5. Commons and conflict

Commons or common pool resources are found globally on land, in freshwater and the sea. In its widest sense a Common is a shared resource managed by a specific group of individuals or a community who work to rules which allow the resource to be managed sustainably.

In the case of the Commons of Dartmoor, hill-farmers have access to specific Commons, primarily now for grazing, on account of the occupation and location of their farmsteads (Fox 2012).

Hardin (1968) in his widely cited paper entitled "The Tragedy of the Commons" suggested that if graziers all restrained themselves then the Common could be managed sustainably. However, if one user restrains themselves whilst the others do not then he will lose out in the short term before the unsustainable use of the others causes the collapse of the common resource. The latter scenario was the "tragedy" likely to beset common pool resources.

Hardin's views have not gone uncontested Ostrom (1990) strongly disagrees suggesting that common pool resources have the potential for sustainable use as long as a set of "design principles" are applied in the governance of the Common. These include a clear understanding of the resource and who has access to it, the involvement of local knowledge and practices, conservation strategies along with co-ordination and adoption of the "multiple rule sets" that govern them. Ostrom also suggested that top-down state regulation was rarely the best solution for the management of common pool resources.

As section 1.6 shows the governance of the Commons on Dartmoor has evolved over centuries and has used many soft techniques such as tradition and custom to provide order (Rodgers et al 2011). After the 1960s, the governance systems on Dartmoor's Commons (and elsewhere in the UK) became more complex as traditional agrarian functions declined as productivist policy was replaced by multi-functional environmental policies, increased State involvement and a stronger reliance on agricultural subsidies (Short 2008). This increased intervention by the State has been described as "cultural severance and the end of tradition" (Rotherham 2013b).

As a result, the potential for conflict grew beyond simple commoners' and owners' disputes and involved a complex range of environmental, political, economic and cultural issues, many of which remain unresolved and these form the narratives in this study.

However, the key point is that despite progress sometimes appearing slow or even motionless, the system has not collapsed and the resource has not been destroyed. All parties involved with the management of Dartmoor's Commons have a common interest in seeing the system succeed even if they are viewing the problems and challenges from different perspectives. Ultimately it is a search for a system which can be adapted by all the stakeholders so that compromise can be reached.

Despite Ostrom's (1990) reservations about top-down state regulation being rarely the best solution for the management of common pool resources, it is difficult to see how this is now not desirable given that so much public money is used to make the system work and that the outputs required (i.e. ecosystem services / public goods) are now additional to the ones that were originally sought (i.e. food and a living for Commoners).

1.6. The Commons of Dartmoor, their traditions and the hill-farming culture

1.6.1. The History of Commons

In order to understand 21st century Commons and commoning it is important to have an awareness of the history of Common land in England over the past 900 years, acknowledge the role of custom and tradition, see how Governance issues have evolved over time and appreciate how the use of Rights have changed over the centuries (Rodgers et al 2011 p19).

Today there are over 7000 Commons covering nearly 400,000ha in England ⁸ and these represent the remaining areas of common land left in the country. They are an ancient form of land tenure and their first legislative governance details can be traced back to 1285 ⁹. Commons in England are not communally owned rather they are usually privately owned but include “use rights” available to others, usually tenants or farm owners adjacent to the Commons (Rodgers *et al* 2011 p4).

The Commons of Dartmoor amount to 35,882 ¹⁰ ha and consist of the Forest of Dartmoor, the Commons of Devon and Manorial Commons (Fox 2012 ch2 and Mercer 2009 p24).

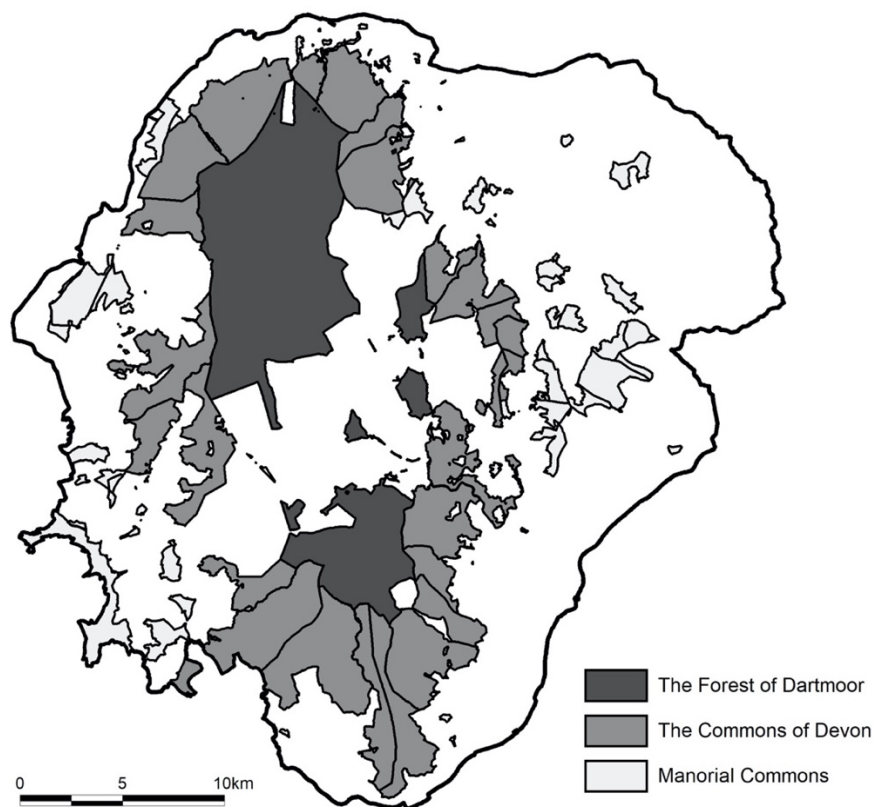


Figure 1 The Commons of Dartmoor. Contains public sector information licenced under Open Government Licence v3.

Traditionally there were six Commoners use rights associated with Common land: common pasture (grazing), turbary (the cutting of peat), estovers (wood for fuel and repairing houses and agricultural equipment and animal bedding), pannage (right to

⁸ Foundation for Common Land (2016) About Commons, website accessed 24/11/16.

<<http://www.foundationforcommonland.org.uk/about-commons>>

⁹ Foundation for Common Land (2016) Facts and Figures, website accessed 24/11/16.

<http://www.foundationforcommonland.org.uk/facts-and-figures>

¹⁰ Dartmoor National Park Authority (2013) Dartmoor Commons, website accessed 24/11/16.

<http://www.dartmoor.gov.uk/learningabout/lab-printableresources/lab-factsheetshome/lab-dartmoorcommons>

graze pigs), piscary (right to take fish) and profits à prendre (minerals).

By contrast the Landowner's rights consisted of mineral rights, right to game e.g. deer and grouse and surplus grazing rights i.e. the right to graze animals if the Commoners had not exercised all their rights (Rodgers *et al* 2011 pp6-7).

Rodgers *et al* (2011) argue that the history of our Commons over the past 900 years or so can be divided into three main phases.

1.6.1.1. The Medieval Period

Up to the late Medieval period Commons were overseen by Manorial Courts, where soft laws were applied and much was driven by custom and tradition. The practices of transhumance (summer grazing and winter resting) along with the old laws of levancy and couchancy - the rule that determined the number of grazing stock that could be summered on the Common by reference to the capacity of the land to which the rights were associated to feed stock over the winter months, i.e. all stock on the Common in the summer had to be accommodated and fed on the farm in the winter months. Such practices aimed to ensure that the common resource was fairly shared and sustainably managed.

Conflict on the commons during this first era appears to have been limited to disputes between Commoners and or disputes between Owners and Commoners. Custom and tradition backed up by Manorial Courts tended to resolve the disagreements.

1.6.1.2. Improvement and Enclosures

From the 17th century there was a drive towards agricultural improvement which was later underpinned by a series of Parliamentary Enclosures Acts. Many Commons in the lowlands were enclosed and the rights were lost. In the Uplands this practice was less widespread but significant areas of land were improved. In 1780 large enclosures began to be created, in 1791 a Forest of Dartmoor Enclosures Bill failed in Parliament but nevertheless by 1898 15,000 acres of Dartmoor's Commons had been enclosed ¹¹. The location of these enclosures on Dartmoor known locally as "new takes" or "wastes" can be seen in Mercer (2009 p24). Whilst the purpose of enclosure and improvement was to increase agricultural productivity it failed to make

¹¹ <http://www.dartmoor.gov.uk/learningabout/lab-printableresources/lab-factsheetshome/lab-historydartmoor> , (Accessed 8/6/17)

much progress in the Uplands due to the poor quality of the upland soils.

1.6.1.3. Productivity and Wilderness

Finally starting in the middle of the 19th century, described as the “productivity and wilderness” era by Rodgers *et al* (2011 p28) and driven by the Commons Preservation Society saw the “public interest” in the Commons redefined as a “public right of access”. These changes were also driven by the Romantic Movement initially in the Lake District but also on Dartmoor as the uplands changed from being seen as wastelands and became appreciated and visited for their intrinsic value and natural beauty (Milton 2006).

With regard to the productivity element there were some changes from the preceding Improvements and Enclosures era in the 19th century, for example in 1880 the type of stock used on Dartmoor began to change. Prior to this, traditional breeds such as Red Devon cattle along with Whiteface and Greyface Dartmoor sheep grazed the moors – breeds which although they were well adapted to the Dartmoor climate needed to be wintered off the high moor. Very gradually they began to be replaced by Scotch Blackface sheep and both Scottish and Belted Galloway cattle, more hardy breeds and thus able to survive on the moor all year round. Initially this change was slow paced but by the 1960s all year-round grazing had become the predominant method of grazing the Commons. Mercer (2009 p302-3) describes this as

“the most important changes in moorland grazing since mediaeval times”.

He goes on to say

“The dramatic significance of these introductions is that they rang the death knell of the centuries’ old summer grazing routine on the commons and the Forest..... Letting grazing-with-care up here from the farmers from the South Hams and mid-Devon from May to September would become untenable quite soon as available grazing was reduced by winter consumption and the old principle of levancy and couchancy – not being able to graze on the common more than you could winter on your own in-bye was blown”

The next era of agricultural intensification on the Commons did not start until after the Second World War and two distinct periods can be identified: agriculture and the environment post 1945 and the era of environmentalism.

1.6.2. Agriculture and the environment post 1945

1.6.2.1. The Age of Productivism

The 1947 Agricultural Act was brought in with the aims of supporting farmers so that a stable and efficient agricultural sector could be developed. The prevailing view at the time was that the development of a more efficient and productive agriculture was not incompatible with countryside conservation (Winter 1996, Hodge 2016).

However, by the early 1960s it was becoming clear that the intensification of agriculture was not working harmoniously with either nature or the landscape in the lowlands or the uplands. One of the earliest published studies (Moore 1962) detailed the loss of lowland heath around Poole in Dorset. *Silent Spring* (Carson 1962) catalogued the effects of pesticides on wildlife and water quality in the United States. By the 1970s the causes of the declines in peregrine falcons had been established as pesticide driven in the UK (Radcliffe 1970,1980).

By the mid 1970s there were numerous parts of the country where high profile and highly contested conflicts were taking place. Shoard (1980) and Pye-Smith & Rose (1984) provide the conservation campaigners' perspective, whilst MacEwan & MacEwan (1982) and Lowe et al (1986) detail the conflicts over moorland conversion on Exmoor, and Lowe et al (1986) provide examples from the Berwyn Mountains (over afforestation). Dartmoor was not immune from these trends and conflicts and these will be reviewed later in chapter 2.

1.6.2.2. The era of Environmentalism

By the latter parts of the 20th century policy makers in the UK and in the EU realised that agricultural and environmental policies needed to be better aligned. Achieving change was to prove enormously complicated and evolutionary, as reforms needed to be agreed at an EU level.

Headage payments were continued during the 1980s and 1990s and major reform did not take place until the 1990s when agri-environment schemes became widely available. Further reforms happened in 2003 when production-based subsidies (i.e. headage payments) were replaced by "decoupled" direct payments and cross-compliance. As a result, stocking numbers dropped quite dramatically, less intensive sheep grazing prevailed and hill-farmers were supported by a variety of upland specific initiatives such as Environmentally Sensitive Area schemes (ESA),

Countryside Stewardship, the Environmental Stewardship Scheme and most recently a new Countryside Stewardship Scheme (Winter 1996 & Hodge 2016).

These shifts in policy and funding arrangements for farming in the uplands did not go uncontested which is perhaps not surprising given the mixed messages and multitude of schemes, changes and regulations. Condliffe (2009 62-65) gives a very detailed overview of the plethora of initiatives which he calls “Milestones in UK and European policy affecting upland agriculture”.

1.6.3. The Governance of the Commons in the 20th and 21st centuries

By the middle of the 20th century the local customs and traditions formally used to govern the Commons came under the scrutiny of national Government. In places the old ways of doing things had collapsed and now that upland farming was being encouraged to be more productive via the injection of subsidies new mechanisms were needed to ensure some form of sustainability resulted and that the old concept “good neighbourhood” remained (Rodgers *et al* 2011).

As the customs and traditions of the Commons evolved over the years, along with their intensification of use, so had the notion of which pieces of land were indeed Commons and who had rights and in what quantity. As a result, the Royal Commission for Common Land was established in 1955 to make recommendations of the protection and future of Common Land. This eventually led to the 1965 Commons Registration Act which required all Common Land to be registered, along with their rights, their owners and the Commoners entitled to exercise these rights. This process proved to be lengthy and contentious (Rodgers *et al* 2011) and indeed in some places tensions and rivalries still exist (personal experience).

Whilst this process attempted to clarify the rights on Commons and who exercised them, it effectively undermined the previous governance processes especially when it came to dispute resolution. No attempts were made to check if the rights claimed were correct and the process used to gather this information varied throughout the country (Rodgers 2010).

On Dartmoor during the 1960s and 70s the customs and traditions of old which had largely kept order and sustainability on the Commons were collapsing. The disciplines required to keep order on the Commons were rarely now enforced by the few surviving Manorial Courts. As a result, the Dartmoor Commoners Association

was formed in 1954 as an attempt to re-install some order.

Kelly (2016) provides a good historical account of the two failed attempts and the eventual successful one which formalised the new governance arrangement on Dartmoor and culminated in the 1985 Dartmoor Commons Act.

It is a story which captures the spirit of the times – a battle between production and farming efficiency championed by the Ministry of Agriculture Fisheries and Food (MAFF) on the one hand and the fight to protect habitats, species and access on the other led by the Nature Conservancy Council and the Dartmoor Preservation Association on the other side.

In the middle is Ian Mercer, the Dartmoor National Park Officer using all his guile and political skill to negotiate a compromise. The first attempt at a Bill fails before it even reaches Parliament as it is considered too agriculturally biased. The second attempt is defeated in the House of Commons because it contains clauses which permit moorland improvement. The final attempt was passed and became law in 1985 after the improvement clauses were removed and additional access rights were granted.

The 1985 Act was hailed as a success as it was run by local Commoners and had been facilitated by the co-operative working of Government, its agencies and various NGOs.

However, as the 20th century ended the overall governance of the Commons had changed considerably as had the political and financial climates they work in.

Whilst decisions on the Commons were still being taken locally, the context of what was actually possible was set nationally initially by English Nature ¹² (EN) and now by their successor body Natural England ¹³ (NE) who administered the agri-environment schemes. In addition, there was increasing scrutiny as large sums of public money were being used to subsidise an unprofitable livestock industry.

There are enough fragments of the old Medieval Commons culture left today to allow some stakeholders to say the management of the Commons is a traditional activity but in reality, as spelt out above, it has changed dramatically in cultural, agricultural and economic terms.

¹² Statutory nature conservation body in England 1990-2006

¹³ Replaced English Nature as the statutory nature conservation body in England 2006 – present

Despite Ostrom's (1990) reservations about top-down state regulation being rarely the best solution for the management of common pool resources, it is difficult to see how this is now not desirable given that so much public money is used to make the system work and that the outputs required (i.e. ecosystem services) are now so different from the ones that were originally planned (i.e. food and a living for Commoners).

1.6.4. Changes over time in traditions and customs

The Dartmoor landscape is a result of centuries of human intervention. As well as grazing, the moors have seen peat digging, tin mining, military training, afforestation and reservoir construction. Mercer (2009) goes as far to say that Dartmoor "is actually the product of 5000 years of hill-farmers' stockmanship and the grazing of their cattle, sheep and ponies". As a result, it is often stated that Dartmoor farming today is a traditional activity¹⁴. However, to fully understand the situation today it is important to review how the customs and traditions have changed over time.

Grazing rights: throughout the Medieval period everyone in Devon (bar the residents of Totnes and Barnstaple) had the right to graze animals on the Commons of Dartmoor and section 1.1.3. has already described the changes that occurred during the 19th and 20th centuries to end transhumance and the practice of levancy and couchancy.

Turbary – the cutting of peat: commoners had the rights to cut peat on the moor so that it could be dried and used as a fuel to heat their homes and cook. Peat was still being cut up to the Second World War by some but the availability of coal led to the end of the practice¹⁵. Today the cutting of peat is now not permitted on the Sites of Special Scientific Interest as it is now viewed as a damaging activity and the conservation of the peat and its carbon is a new priority (NE 2010).

¹⁴ http://www.dartmoor.gov.uk/_data/assets/pdf_file/0013/41251/lab-farming.pdf (Last accessed 8/6/17)

¹⁵ <http://www.dartmoor.gov.uk/learningabout/lab-printableresources/lab-factsheets/home/lab-bogs> (Last accessed 8/6/17)

Estovers: the practice of cutting of wood or other vegetation has also changed dramatically especially with respect to bracken and gorse. The former was used as a thatching material on moorland buildings and was also cut for animal bedding – these practices have now completely stopped. The cessation of bracken cutting along with the decline of summer cattle grazing and a warming climate (Mercer 2009) has led to a dramatic increase in the abundance and distribution of bracken on Dartmoor and in the uplands in general.

Similarly, the cutting of gorse was a traditional activity as it was used as a fuel, again this practice has ceased and today gorse is managed via swaling instead. Although swaling has been carried out for over 150 years on Dartmoor it was only made a right in the 1985 Dartmoor Commons Act (Greeves 2006a).

The other rights of pannage, piscary and profits à prendre appear to have had little uptake historically of Dartmoor and their current usage is minimal.

Realising the importance of the Commoning system to the management of extensive areas of important wildlife habitats in England, NE (2009a) commissioned research to look at the current trends in Commoning across England, these were the conclusions.

- The overall tendency is towards fewer active graziers on each common and an increase in farm size.
- Management of common land has become increasingly time consuming.
- Commons are increasingly managed through commoners' associations, and are subject to agri-environment schemes.
- There are widely different views on appropriate grazing levels
- Stock numbers have declined in most cases, with a shift away from native breeds.
- The vegetation of commons is undergoing long term change.
- The reasons why commoners continue to graze commons are complex and involve personal values, not solely geared to economics
- Despite the depressed state of pastoral farming, commons are still an economic asset.

All of these trends are either thought or known to be occurring on Dartmoor.

1.6.5. Culture

The 1995 Environment Act re-defined the role of National Park Authorities and charged them with the conservation and enhancement of the cultural heritage in addition to their other duties. Dartmoor's cultural heritage includes for example its archaeology and its buildings but also includes the distinctive customs and traditions of the people who have created the landscape ¹⁶.

For the latter decades of the 20th century interest and controversy focused on issues associated with the natural environment. The 1995 Act however encouraged a much deeper interest in Dartmoor's cultural heritage. Dartmoor farmers who felt rather beleaguered over the environmental debates and solutions began to raise the importance of the national park's cultural heritage and their involvement in the creation of its cultural landscape. Writers such as Mercer (2009) and Greeve (2015) emphasised the importance of the farmers' role in the cultural heritage of Dartmoor and became their champions.

Today the term "cultural landscapes" is widely used to acknowledge the role that people (predominantly farmers) have played over the centuries to create the landscapes that are so loved in the uplands, be they in the Lake District or on Dartmoor. Rodgers et al (2011) call the Commons "*cultural ecological landscapes with a long time-depth*".

Nationally the importance of cultural heritage is also growing and along with the agricultural crisis in the uplands led to a series of policy initiatives. The Commission for Rural Communities (CRC) report High Ground, High Potential – a future for England's upland communities (CRC 2010) stated "*Cultural heritage is far less recognised and appreciated than natural assets (which are much easier to measure). Yet recognition, appreciation and valuing cultural heritage is crucial to realising the potential of the uplands*".

Interestingly whilst many upland farmers and the CRC may consider that the cultural heritage of the uplands is not fully appreciated, others have gone on a charm offensive to make their case. The Shepherd's Life (Rebanks 2015) is a prominent example, selling over 300,000 copies worldwide and having a high-profile social media presence has meant he has been able to convey his life and those of his

¹⁶ <http://www.dartmoor.gov.uk/lookingafter/laf-culturalheritage/laf-customstraditions> (Last accessed 8/6/17)

neighbours along with the generations before him in a compelling and evocative way. He has linked what he and his forebears have done in creating the Lake District's cultural landscape, that the millions of tourists who visit love and enjoy.

Much of the conflict around the cultural heritage occurs because the Dartmoor farming communities perceive that many of the other stakeholders put the interests and importance of biodiversity above their own and as a result their very future is threatened (see Coaker 2014 & 2017 for example).

Whilst Toogood (2003) was writing about Scottish Natural Heritage and its relationships with crofters and estate owners in the Highlands, a number of his comments will resonate with the Commoners and some Common's owners on Dartmoor. He suggests that State ecologists and conservationists have been criticised because they interfere with and exercise control over crofters and large estates and the institutional culture. Forms of scientific knowledge and assumptions about nature and society are at odds with the aspirations of local people regarding rural development and land reform.

He goes on to suggest that this "conservation culture" is a legacy of the nation's former colonial past where

1. science is given priority over lay knowledge
2. nature is separate from culture
3. bureaucratic control and standardisation of nature takes precedence over other forms of engagement with land
4. British bodies are involved with the management of Scotland

With regard to the last point, in my experience, Dartmoor Commoners undoubtedly see officials from NE as "outsiders" and dislike the notion of taking instructions from Sheffield or Peterborough where NE is and was based (these points will be discussed in more detail in chapters 4-7).

A study looking at hill-farmers' attitudes towards scientists in the Lake District following the Chernobyl radio-active fallout incident in 1986 found that the scientists were only trusted and believed if their research proved credible and reliable. In addition, the Lake District hill-farmers resented the fact that their local knowledge was not considered scientific enough to be used by the researchers (Wynne 1992).

The implications from this research might suggest that in a Dartmoor context, the failure of the detailed management prescriptions to deliver environmental improvements (see chapter 4.5.3.) and NE's reticence to seek and act upon hill-farmers local knowledge would also lead to a lack of credibility and trust between Dartmoor's Commoners and NE.

The publication of NE's report *Vital Uplands: a 2060 vision for England's upland environment* (NE 2009b) showed how tense the relationship between the government's statutory nature body and the hill-farming communities had become. The document, which was welcomed by conservation bodies, was severely criticised by upland farmers and their leaders as they perceived that the document was trying to refocus their role casting them as environmental managers rather than focusing on food production¹⁷.

The report which was launched in 2009 was then withdrawn in 2012. A chastened NE were told by Ministers and Defra to make the uplands their top priority and rebuild relations with the hill-farming communities (Alan Law, Chief Strategy and Reform Officer NE pers comm).

1.6.6. The economics of hill-farming on Dartmoor

The future of the cultural, historic, natural and recreational landscapes on Dartmoor in their current form are inextricably linked to the economics and state of hill-farming.

By the late 1990s even the increased numbers of stock (and their associated subsidies) failed to provide sufficient returns to make hill-farms on Dartmoor profitable (Turner et al 2002).

Turner et al (2008) reported that "public support" amounted to 44% of South West hill farms total output in 2006/07 and 289% of the Farm Business Income (FBI). FBI in that year averaged £9,207 for all South West hill farms. FBI as a figure does not include the value of the family's labour input (which in 2006/7) was calculated at approaching £20,000. When this is taken into account, the Farm Corporate Income shows a loss of £10,583¹⁸.

By 2014/15 South West figures for Upland Less Favoured Area Farms showed that

¹⁷ <http://www.cumbriacommoners.org.uk/natural-england-scraps-50-year-vision-uplands> (Last accessed 8/6/17)

¹⁸ "Farm business income (FBI) for sole traders and partnerships represents the financial return to all unpaid labour (farmers and spouses, non-principal partners and directors and their spouses and family workers) and on all their capital invested in the farm business, including land and buildings."

public support amounted to 29% of hill farms total output and 165% of FBIs. FBI had risen to £16,973 but the Farm Corporate Income showed a loss of over £8000 even after around £30,000 of subsidy is taken into account ¹⁹. This means that hill farmers in the south west ended up working for considerably less than the minimum wage and generated no return on the capital they had invested in their businesses.

Despite these economic figures, hill-farming has proven to be very resilient. The State of Farming on Dartmoor Report (Turner et al 2002) commissioned by the DNPA in the aftermath of the Foot and Mouth outbreak the year before painted a bleak picture by highlighting and contextualising the financial situation facing Dartmoor's farmers.

In 2003 the EU "Mid-term Review" commenced – a process which would see headage payments gradually replaced by area payments known as the Single Payment Scheme over the coming decade. Many commentators predicted that this would have deleterious effects on upland farming by restructuring agriculture to such an extent that farms became unviable, the social fabric of communities would be affected and that the public goods required by government from the uplands such as biodiversity, landscape, historic landscapes and access would not be able to delivered effectively (Lobley et al 2005, NT 2005 and Turner et al 2008).

Lobley et al (2012 p21) carried out a survey of over 4000 farmers in the South West and concluded perhaps surprisingly that "the uplands of the south west are yet to reach a tipping point". The survey also revealed "a strong and continuing commitment to upland agriculture".

So despite a major change in the way that subsidies were calculated and paid and despite the fact that upland farming remained deeply unprofitable the majority of upland farmers appeared, perhaps not upbeat, but at least prepared to use their entrepreneurial spirit to continue farming.

Upland farming now faces another major challenge. Following the Referendum in June 2016, the UK has left the EU and as a result, a new (non-EU) subsidy system is being developed to pay farmers for public goods in the future. The UK Government has committed itself to paying subsidies along the lines of those

¹⁹ Data via the Farm Business Survey <http://www.farmbusinesssurvey.co.uk/regional/Farming-England-Regions-Reports-January-29-2016.asp> (Last accessed 8/6/17)

currently received up to the end of the current Parliament.

There are again clear concerns about the future of farming in the uplands. Without subsidy / public money farming in the uplands is not viable and may find it difficult to continue. It is calculated that subsidy provided to the English Uplands is around £230m per annum ²⁰ and it is suggested that around £7m per annum is received by Dartmoor farmers ²¹.

In 2019/20 the national figures for Upland LFA ²² Livestock Farms, showed that the agricultural part of the business made a loss of £16,600, but bolstered by agri-environment scheme income (11,300), diversified income (2600) and the Basic Payment Scheme (BPS) £25,500), the average FBI was £22,800. In 2017 /18 FBI averaged at £28,300 and in 2018/19 it had reduced to £15,500. These figures again show how volatile hill-farming is at the current time as well as demonstrating how reliant hill-farm income is on subsidy, especially the BPS, which as a result of our decision to leave the EU will be phased out over the coming 7 years (Defra 2020). This issue is discussed further in chapter 12.

1.7. Concluding remarks

The next chapter covers in detail the environmental contexts which underpin the conflicts on the Commons of Dartmoor. Chapter 3 is my methodology and introduces some of the theory behind narrative analysis. Chapters 4-10 set out the various stakeholder attitudes to the competing narratives on Dartmoor, including discussions around over-grazing and under-grazing, the way that vegetation has responded to the changes brought about by the agri-environment schemes, the behaviours of the various stakeholders – good and bad along with how these have impacted on the search for consensus, introduces the counter-narratives of re-wetting, re-grazing and re-wilding and concludes with a discussion of the debate around stock farming and its impact on the climate. Chapter 11 discusses how the use of narratives can contribute to our understanding of the various conflicts and how they might contribute to finding future solutions. Chapter 12 covers my conclusions.

²⁰ Calculation made from the Uplands Alliance poster. £3.30 per visitor from Government in subsidy for upland farmers and over 70m visitors per annum to the uplands

²¹ This figure is often quoted for Dartmoor but as of yet I have no reference / validation.

²² LFA – Less Favoured Area

2. Dartmoor's environmental context - the basis for the narratives

2.1. Introduction

This chapter reviews the literature which underpins the various aspects of conflict on the Commons of Dartmoor. It starts with a critical review of stock numbers, which are at the heart of the environmental conflicts on the Commons along with their changes over time and highlights how difficult it is, despite the multitude of data, to fully understand exact grazing numbers. The burning of vegetation (swaling) is reviewed, this is the other highly contested agricultural practice, which along with the grazing pressure is blamed by the conservationists for the deterioration of the moorland habitats.

Research is presented which catalogues the decline of heather in the UK's uplands and on Dartmoor and a series of studies are reviewed which seek to set sustainable grazing regimes designed to favour the return of heather. This body of research was used to inform the grazing levels which were set out in the agri-environment scheme prescriptions. The next section looks at the spread of *Molinia* on the Commons – an unexpected consequence of the sustainable grazing prescriptions. Finally, in the natural environment section the impact of the agri-environment schemes on “favourable condition assessment” is discussed.

Research around the high levels of atmospheric pollution in the UK, particularly from nitrogen deposition, is reviewed and the impact this can have on moorland vegetation and heather beetles is discussed.

In addition to being an important area for wildlife, Dartmoor also possesses a very rich suite of archaeological sites dating back to the Mesolithic era. Research is presented which indicates that the management changes implemented to encourage the return of the moor's wildlife have had a detrimental impact on the historic landscape and the implications of this are discussed.

The hydrological functioning of Dartmoor's peat has deteriorated over centuries as a result of human activities. Research is reviewed which aims to rectify this and it is discussed how these objectives can conflict with both hill-farmers and those with an interest in the historic environment. In recent years, the issue of re-wilding has been discussed in a Dartmoor context and a brief review of this and its attendant controversies are presented. The final section looks at how Dartmoor's climate has

changed in recent times and how it is projected to change again into the future and discusses some of the implications of this.

2.2. Conflict and the natural environment

The uplands of the UK have seen considerable conflict between agricultural interests and those interested in conserving the natural environment. This chapter reviews these issues, particularly those centred around sheep grazing intensity and sward burning and the impacts these have had on semi-natural habitats and species.

The first indications that the grazing pressure on the Commons of Dartmoor might be increasing following the introduction of the productivistic 1947 Agriculture Act emerged during the extreme winter of 1962-63 when much of Dartmoor was cut off by deep drifts of snow and low temperatures for 3 months. Hundreds of sheep and cattle perished and the military were deployed to help provide fodder for the surviving livestock.

There were claims that the Commons were overstocked, a practice encouraged by the subsidies now available to hill-farmers. Officially these accusations were rejected and instead attributed to the severe and exceptional weather conditions (Kelly 2016; Bowen & Martin 2016).

2.2.1. Sheep and cattle numbers in the 20th and 21st centuries

By 1973 hill-farmers across the UK were receiving “headage” payments which led to increasing numbers of animals on the moors (Chesterton 2009). However, trying to understand the specific details of sheep and cattle numbers on Dartmoor and in particular on the Commons of Dartmoor over time is complex, confusing and contested.

Nationally the figures show clear trends. Sheep numbers in the UK rose from 20m animals in 1950 to 42m in 1990 whilst cattle numbers increased from 10.6m in 1950 to 12.2m in 1990 (Zayed 2016).

Regionally sheep numbers rose from 0.99 million animals in 1950 to 1.97 million in 1980 and 2.65 million in 1990, representing a 99.7% increase between 1950 and 1980 and a 168% increase between 1950 and 1990 (Fuller and Gough 1999).

MAFF figures for Dartmoor stated that in 1939 there were 108,000 sheep in all of the Dartmoor parishes, this figure declined to 98,000 by 1949 of which around 30,117 were on the moor, i.e. the Commons (Fogwill 1954, Sandles 2016).

On Dartmoor as a whole, sheep numbers increased from 150,000 in 1972 to 250,000 in 1990, cattle numbers initially rose from 60,000 animals in 1972 to 62,000 in 1985 and dropped to 56,000 in 1990 (Turner et al 2002).

Mercer (2009) suggests there were 151,000 sheep on the whole of Dartmoor in 1972 and that this rose to 240,000 by 2000. Over the same time period cattle numbers dropped from 60,000 to 53,000. He also provides data just for the Commons which states that in 1950 there were 13,000 ewes, this rose to 40,000 ewes by 1960 and rose again to 130,000 ewes in 1996. In 1950, there were 2000 cattle on the Commons and this had increased to 20,000 by 1996. In broad terms this amounts to a five-fold increase in sheep and a ten-fold increase in cattle on the Commons between 1950 and 1996.

Despite the complexity of the Dartmoor figures it is clear that the intensity of grazing within the National Park and on the Commons increased considerably.

After the introduction of the agri-environment schemes from 1986 in the UK sheep numbers fell from 44m in 1990 to 34m in 2014, whilst cattle numbers dropped from 12.2m in 1990 to 9.8m in 2014 (Zayed 2016). NE (2009b) reported that nationally “In the uplands the numbers of livestock units grazed declined for sheep in 1987-1997 and 1997-2007 while cattle numbers declined from 1997-2007. Overall on the sample upland commons winter sheep numbers have fallen by over 70% and summer numbers by over 40%.” On Dartmoor Turner et al (2002) state that between 1990 and 2000 sheep numbers fell by around 9,500 to 239,930 and cattle fell by 3345 to 52,899. Silcock *et al* (2012) showed that on Dartmoor between 2000 and 2010 cattle numbers rose whilst sheep numbers declined. However, these data are not directly comparable with the Turner numbers as Silcock only used data from commercial holdings within the LFA in the Dartmoor Natural Character Area whilst Turner et al used data for LFA and non-LFA land in the National Park.

	Dairy	Beef	Total cattle	Breeding Ewes	Total sheep
2000	1139	11188	30982	75196	143651
2005	781	13825	38633	83536	160524
2010	722	12508	35405	67972	133759

The data from Defra (2014) is largely comparable with the Turner et al’s (2002) work even though there have been minor changes in the way that the data are collected.

	All holdings			Commercial holdings		
	2007	2008	2009	2009	2010	2013
Cattle	48525	46164	46530	46416	44195	44058
Sheep	192271	186678	184262	177919	167288	190391

Defra (2014)

In a report commissioned to look at the potential impacts of reducing grazing numbers in various English landscapes, Land Use Consultants (LUC) stated that since 2000 Dartmoor livestock numbers have fallen by a quarter. The sheep flock had declined by 31% and the cattle herd by 17% and that now cattle account for 55% of the livestock grazing units. The stocking rates were especially reduced in the winter (Deane 2011).

Trying to reconcile the Silcock data with the statements made by the DNPA at the EFRA²³ Committee, LUC and those of Turner et al (2002) is difficult, especially if you convert the grazing numbers in Livestock Units as this would appear to show that grazing intensity on Dartmoor has increased up to 2010 by around 10% (Silcock 2012).

In summary, sheep numbers on the whole of Dartmoor rose from a low of 98,000 in 1949 to a peak of 250,000 around 1990 (155.1% increase) and have now declined to a level of around 190,000. By comparison sheep on the Commons of Dartmoor rose from just over 30,000 in 1949 to a peak of 130,000 animals in 1996 (331% increase). The current figures for sheep on the Commons is unknown but is much less than 130,000 due to the stocking cuts.

2.2.2. Sward burning on Dartmoor

The burning of vegetation on Dartmoor (known locally as swaling) has taken place since the Mesolithic (7700 - 6300 BP) where it was associated with the transition from hazel woodland to blanket peat (Caseldine and Hatton 1994). Over the past 300-150 years sward burning has become a routine management practice in the uplands to remove old vegetation (grasses and shrubs), encourage the growth of new nutritious vegetation and allow larger numbers of stock to be pastured than would be possible in its absence (Newton 2017 & 2020 & Greeves 2006a).

In the eastern and drier uplands of the UK, rotational burning on a 10-15 year cycle produces vigorous growth of new heather and supports the grouse industry. In the

²³ Environment, Food and Rural Affairs Committee in the House of Commons Parliament

western and wetter uplands (such as Dartmoor) shorter rotation burning encourages the growth of grass species such *Molinia*. If this sward burning is too frequent or too hot it can lead to the *Molinia* domination of moorland (Chesterton 2009).

The intensification of hill-farming in the uplands following the 1947 Agricultural Act saw increased stocking levels and more intensive sward burning. Swaling was traditionally carried out on the areas of wet heath and mires but not on the blanket bogs. During the 1960s up to 1990 large areas of blanket bog were also burnt on Dartmoor which, combined with the increased grazing pressure, altered their vegetational composition (Mercer 2009).

During the 1990s EN prohibited swaling on the blanket bog and controlled its frequency and extent on the mires and wet heaths (Andy Guy pers comm). However even the controlled swaling which is carried out now is controversial. Swaling must cease by the 31st March but on Dartmoor birds such as skylarks and meadow pipits have already begun to nest and the removal of gorse scrub can remove suitable habitat for whinchat – an uncommon species, now in decline nationally - along with the Dartford warbler, a species trying to gain a foothold on the moor as its small population nationally expands (Beavan & Lock 2016).

Whilst the excessive swaling practices of the last century have been curbed, it is still a matter of debate as to whether current practices are desirable and sustainable from an environmental perspective. It is also debatable whether swaling is desirable and useful from an agricultural point of view as it appears to play a role in helping with the spread of *Molinia* (see chapter 6).

2.2.3. The impacts of increased grazing levels during the 20th century

It is indisputable that the number of grazing animals on Dartmoor increased substantially post 1947 until the mid 1990s – 2000 and then began to decline. The question is what impact did these increases have and how effective were the measures to mitigate them?

The 1947 Agriculture Act provided the policy drivers and associated funding which enabled the intensification of agriculture in the uplands. In part this intensification led to the increased stocking levels described above but also led to the intensification and draining of in-bye land, widespread swaling to reduce scrub and gorse and to encourage new flushes of fresh grass. In some UK uplands the widespread drainage

of blanket bog was encouraged and extensively carried out, whilst in other places heathland was converted to more productive grassland (Newton 2017 & 2020). The type of improvements along with their extent were different across the country's uplands. Dartmoor largely avoided the drainage of mires and bogs whilst in the Pennines and the North Yorkshire Moors this occurred on a large scale. Little of Dartmoor's heathland was converted to grassland as happened extensively on Exmoor (MacEwan & MacEwan 1982).

The impacts on the environment and wildlife of these intensifications have been widely reviewed (Chesterton 2009, Davies 2009, Martin et al 2013, Glaves et al 2013 and Newton 2017 & 2020 for example).

This thesis is concerned with the Commons of Dartmoor and as a result the main impacts which will be reviewed concern the grazing pressure and the burning practices on the open moor opposed to the new takes and in-bye land.

2.2.3.1. Impacts on heather

By the early 1980s there were growing concerns about what ecological impacts these increased stocking levels, often described by ecologists as over-grazing, were having. In the Peak District heather moorland had reduced in area from 154 km² in 1913 to 99 km² by the late 1970s – a reduction of 36%. Over the period 1930 to 1976, the number of sheep had trebled (Anderson & Yalden 1981). They concluded "It is considered therefore that these changes are cause and effect".

EN produced a report and set of maps for the Commons of Dartmoor showing the vegetation and heather condition based on survey work carried out in 1989/90. The report summarised the situation as follows.

Table 4 Heather condition on Dartmoor 1989/90	
Heather conditions on Dartmoor	%
Conditions unsuitable	5.8
No heather present (but conditions suitable)	30.6
Severely overgrazed	10.1
Slightly overgrazed	21.8
Healthy	31.8

22,450ha of the Commons supported some heather cover and half of this, 11,240ha was showing some sign of damage. Of the damaged areas, 57% was impacted at least to some extent by cattle and exacerbated by too frequent burning (Wolton et al 1994).

A survey of heather condition on the moorlands of England and Wales reported that in England around 24% of upland heather stands were damaged whilst in the south west over 40% had been damaged (Bardgett et al 1995).

2.2.3.2 The science behind the search for sustainable grazing levels.

Many studies have been published which seek to recommend appropriate grazing levels on upland grasslands and heaths. The majority of these have been carried out either in Scotland, the Peak District and the Pennines. This section reviews this work so that what has actually happened on Dartmoor can be compared to it.

In north-east Scotland a grazing pressure of 0.2 cattle and 2.7 sheep / ha (this equates to 0.605 LSU / ha ²⁴) caused damage to heather communities. Additionally, with cattle at 1.2 / ha (1.2 LSU / ha) there was a 32% decline in 4 years and a decline from 80% to 5% heather cover in 10 years. With 5 sheep / ha (0.75 LSU / ha) there was a 9% decline in heather cover over 4 years (Welch 1984).

A grazing pressure of 2 sheep / ha (0.3 LSU / ha) on heather moorland and 0.37 sheep / ha (0.055 LSU / ha) on blanket bog was considered to be compatible with nature conservation objectives. Whilst 0.5 sheep / ha (0.075 LSU / ha) on heather moorland and 0.1 sheep / ha (0.015 LSU / ha) on blanket bog was required for heather to regenerate (Evans & Felton 1987). This guidance applied to the uplands generally and was not tailored to specific geographic locations.

In the Peak District the vegetation recovered, particularly heather (*Calluna vulgaris*) and bilberry (*Vaccinium myrtillus*), and wavy hair-grass (*Deschampsia flexuosa*) recolonised formerly bare ground in areas that had seen a reduction in sheep numbers. The stocking rate decreased from 2.5 ewes / ha (0.375 LSU / ha) to 0.18 – 0.43 ewes / ha (0.027 – 0.065 LSU / ha) and this allowed plant cover to re-establish over an 8 year period (Anderson and Radford 1994).

Andrews & Rebane (1994) produced a table which set out the maximum year-round stocking levels for medium-sized sheep such as Swaledales and Blackfaces on a variety of upland habitats.

²⁴ LSU is known as a livestock unit Cattle = 1LSU, Ponies = 1 LSU & Sheep = 0.15 LSU

Table 5 Maximum year-round stocking levels for upland sheep	
Vegetation type	Ewe / ha
Good grass (bent & fescues)	4.7
Poor grass (mat-grass, heath rush)	1.3
Young heather (pioneer and early building phase)	1.6
Intermediate heather (late building)	0.4
Old heather (mature and degenerate)	0.1
Blanket bog	0.5
Source: Sibbald et al (1987)	
Notes	
1. These are the maximum stocking levels and may not be appropriate on areas of high wildlife interest or where vegetation is being restored	
2. These are year-round stocking levels. For most areas of wildlife interest seasonal grazing is advocated.	
3. There will be considerable variation across the UK in relation to latitude, altitude, exposure and rainfall, in addition to vegetation composition, height and structure.	

The data from the national heather condition survey of England and Wales suggested that heather could be restored if sheep grazing levels were reduced below 1.5 - 2 ewes per ha (0.225 – 0.3 LSU / ha) (Bardgett et al 1995).

Sheep tend to graze on heather during the winter months once the grasses have stopped growing after having been grazed during the spring and summer. Philips and Watson (1995) suggested a rule of thumb of a maximum of 175 ewe days / ha during the winter or 1 ewe / ha (0.15 LSU / ha). However, they also suggested that detailed and specific plans were required for individual sites so that differences in breed types, snow cover, abundance and condition of heather could be taken into account.

Thompson et al (1995a) stressed the need to ensure that if sheep were grazed all year round the winter carrying capacity was not exceeded to ensure that heather was not damaged. They produced a table with specific management prescriptions for enhancing moorland grazed by sheep.

Table 6 Sheep management prescriptions for moorland recovery		
Current state		Proposed new prescriptions
Heather condition	Annual average stocking density (ewes / ha)	Ewes / hectare plus any off-wintering (O-W) ¹ in stages
Good	< 2.0	(1) 0.75 -1.5 & zero O-W (2) 1.5 – 2 & 50% O-W
Poor	2-3	(1) 0.5 – 0.75 (yrs 1-5) & 100% O-W (2) 1.5 – 2.0 (for > 5 years) & 50% O-W
Suppressed	3-4	(1) Summer graze for yrs 1-5 and 100% O-W (2) 0.5 – 0.75 (for yrs 6-10) & 50-100% O-W (3) 1.5 – 2.0 (for yrs 11-15) & 50% O-W
Note: ¹ Off –wintered sheep are put on in-bye land or housed.		

The figures in the table apply to southern and eastern areas, if land is above 600m the grazing densities are to be halved and for N.W. Scotland the numbers are reduced by two thirds.

Various data are available for Dartmoor, so it is possible to compare the above recommendations with the actualities on the moor. However, Dartmoor is very different from the “northern moors” as sheep, cattle and ponies graze the Commons and of course it is between 500-1000km south of where much of the research has been carried out.

In 1952, there were there were 2,000 cattle and 44,000 sheep on Dartmoor’s Commons and by 1994 this had risen to 20,000 cattle and 132,000 sheep (Smallshire et al 1996). If we assume that Dartmoor’s Commons cover 35,882 ha and one sheep is the equivalent of 0.15 cattle, the grazing pressure can be calculated as 0.24 LSU / ha in 1952 1.11 LSU /ha in 1996. The 1952 figure is below or around the previously quoted densities required to produce healthy heather communities (Evans & Felton 1987, Anderson & Radford 1994, Andrews and Rebane 1994, Bardgett et al 1995 and Thompson et al 1995). By 1994 the grazing pressure is equivalent to that quoted by Welch (1984) whereby one could expect a 32% decline in heather over a 4-year period and a drop from 80% to 5% in 10 years.

The 10-fold increase in cattle numbers between 1952 and 1994 might go a long way to explaining the deteriorating condition of heather communities across Dartmoor described by Wolton (1994).

An undated and unpublished case study NE for Ugborough and Harford Commons on Dartmoor contains the following data.

Pre 1998	Summer Winter	0.49 LSU / ha 0.44 LSU / ha	Equivalent to 0.465 LSU / ha per annum
1999 ESA	Nov – 15 th Apr (sheep only) 16 th Apr – Aug (sheep and cattle) Sept – Oct (sheep & cattle) Ponies all year	0.17 LSU / ha 0.26 LSU / ha 0.17 LSU / ha 0.04 LSU / ha	Equivalent to 0.244 LSU / ha per annum
Higher Level Stewardship Scheme (HLS)	Summer Winter	0.3 LSU / ha 0.17 LSU / ha	Equivalent to 0.235 LSU / ha per annum

The pre-1998 figures are consistent with the previously published data which indicate damage to heather moorland, whilst the ESA and HLS grazing pressures are within the range where heather in good condition would not deteriorate further.

To conservationists these figures demonstrated that the moors were still being overgrazed – heather communities had been damaged and as a result “restoration grazing pressures” were required which were lower e.g. 0.075 LSU / ha on heather moorland (Evans & Felton 1987).

To hill-farmers the reductions in stocking numbers and the reductions in winter grazing demonstrated that concessions had been made. In addition, the reductions in the overall cattle herds meant that there were not enough animals available in summer to graze the increasing sward of *Molinia*. As a result, the *Molinia* spread and was under-utilised as was the gorse in some areas.

The confusion over the exact numbers of animals present on the moor and the lack of transparent monitoring of the vegetation meant that arguments around over-grazing persisted and still persist today.

2.2.3.3. The spread of *Molinia*

Heather is not the only plant on the moor which has changed its abundance and distribution. *Molinia* has increased dramatically. Looking at Dartmoor (and indeed all the UK's Uplands) today it is easy to forget that the rise to dominance of *Molinia* on the mires and blanket bogs is a recent phenomenon. Wolton et al (1994) in their report on heather condition on Dartmoor based on fieldwork carried out in 1989/90 concluded that *Molinia* consisted of less than 1% of Dartmoor's Commons i.e. less than 2,800 ha.

Although comparative figures are not available for Dartmoor today it is widely agreed that this figure has increased dramatically to above 20%. Chambers et al (1999) showed from paleo-ecological research that the rise *Molinia* is a recent phenomenon, this work also showed that the rise of *Molinia* was at the expense of heather communities. The spread of *Molinia* concerns farmers as this grass is relatively unpalatable to stock and it is of concern to conservationists as the "raffia" fields of the grass produce monotonous species-poor landscapes which suppress other moorland species such as heather. The spread was thought to be caused as a result of over-grazing and excessive burning. Averis et al (2004) suggest the following changes to National Vegetation Classification (NVC) communities which can all lead to an increase in *Molinia* communities. The communities described below e.g. M25 *Molinia caerulea-Potentilla erecta* mire follow the NVC (Rodwell 1991).

- If blanket bog (M17 *Trichophorum cespitosus-Eriophorum vaginatum* blanket mire) is overgrazed or burnt it changes into poor quality wet heath (M15 *Trichophorum cespitosus, Erica tetralix* wet heath) and then *Molinia* grassland (M25 *Molinia caerulea-Potentilla erecta* mire)
- If wet heath (M15) is overgrazed or burnt it changes into *Molinia* grassland (M25)
- If heathland (H12 *Calluna vulgaris-Vaccinium myrtillus* heath / H8 *Calluna vulgaris-Ulex gallii* heath) is overgrazed or burnt it changes into poor quality wet heath (M15) or *Molinia* grassland (M25)

The original restoration management prescriptions from EN and NE focused on reducing the grazing pressure and reducing burning on the mires and forbidding it on the blanket bog. Whilst such prescriptions aided the blanket bog it was very much

less successful at reducing the incidence of *Molinia* on the mires.

Research was therefore conducted from the late 1990s onwards to determine how *Molinia* could be controlled. The seminal paper on this work is Marrs et al (2004) which concluded if *Molinia* was to be controlled in situations where it had become dominant (the so called “white moors”) then a combination of herbicide application, raking off the litter, soil disturbance and re-seeding with heather was required. This experimental approach was carried out in the Peak District and the Yorkshire Dales and other treatments using grazing were found to produce different results in different places.

On Dartmoor the approach to managing *Molinia* has involved local swaling techniques which if followed up by intensive spring / summer cattle grazing can reduce the dominance of *Molinia*. However, if the burning is followed up by sheep grazing opposed to cattle grazing the *Molinia* tends to increase (Glaves 2015). *Molinia* is a fire adapted species which benefits from grazing unless the initial spring growth is reduced via cattle grazing. Such a prescription has been hard to deliver on Dartmoor as there are either insufficient numbers of cattle available or they graze in areas which haven’t been burnt and ignore the new burnt areas.

In an ADAS ²⁵ report for EN, examples of best practice regarding sustainable moorland management on Dartmoor with respect to factors such as stocking regimes and burning practices was produced. It included a comment that the resultant reductions in stocking levels may be leading to “*the under-utilisation of purple moor grass and poor scrub control, although these may be the inevitable consequences of attempts to improve the condition of dwarf shrubs*” (Smallshire et al 1996).

In another ADAS report, this time for Defra, on the vegetation monitoring that had been carried out on the Dartmoor ESA between 1994 and 2003 concluded that

“..... Performance Indicators were mostly met, at least in part, with the exception that ‘grazing pressure is reduced to a level such that the condition and extent of heather does not decline as a result of suppression’ which was not met overall.”

²⁵ Agricultural Development and Advisory Service

and

New drivers have gained importance since the Scheme was launched, notably to achieve Favourable or at least Recovering condition on SSSIs and to meet UK and Local BAP targets. The present results suggest that maintenance management under Tier 1E prescriptions, even with supplements, may not bring about the restoration necessary to meet these targets (nor was it designed to do so) and that Tier 2 or even off-wintering may be necessary (Kirkham et al 2005 p42).

Smallshire et al (1996) therefore concluded that there is evidence to show that reducing the grazing pressure may lead to an increase in *Molinia* cover whilst Kirkham et al (2005) suggests that heather cover will not increase unless grazing pressures are reduced further still.

2.2.4. Favourable condition

Despite all the efforts of the Commoners in reducing stock numbers and the incentives from the agri-environment schemes ²⁶ progress toward a restored moorland still appears a distance goal. The term used by NE to denote a healthy habitat is favourable condition. There are two large SSSIs on Dartmoor which cover the Commons.

The North Dartmoor SSSI ²⁷ is 13,559.36ha in extent and consists of 18 units, 0.22% are in “favourable” condition (29.89ha) and 99.78% are in unfavourable – “recovering condition” (13,529.47ha).

The South Dartmoor SSSI ²⁸ is 7,113.77ha and consists of 14 units, 4.48% are in “favourable” condition (318.74ha), 91.69% are in unfavourable – “recovering condition” (6522.31ha) and 3.83% are in “unfavourable – declining” condition.

Over the decades many millions of pounds will have been spent supporting farmers to get the moor into favourable condition. It would appear that to date this has failed but the subsidy has undoubtedly helped keep the Commoners on the moor.

²⁶ Phil Collins, Natural England's Area Manager for Cornwall, Devon and the Isles of Scilly stated that NE paid £12m to Dartmoor farmers in 2006. Dartmoor Magazine (2007) 86:30-3.1

²⁷ See Natural England website

<https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1001721&SiteName=Dartmoor&countyCode=&responsiblePerson=>

²⁸ See Natural England website

<https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1002951&SiteName=Dartmoor&countyCode=&responsiblePerson=>

In recent years NE have suggested that it is only the “primary feature” that needs in the future to be in favourable condition for the whole site to be deemed as such. In the case of the Dartmoor Commons this will mean the blanket bog (John Holmes NE Area Manager pers comm). It is widely accepted that the blanket bog on Dartmoor, now that the former frequent burning has ceased is recovering more quickly than the mires and heathland areas.

NE have stated that by 2020 90% of priority habitats will be in favourable condition and, 50% of SSSIs will be in favourable condition and that 95% of SSSIs will be in unfavourable but recovering condition ²⁹.

2.2.5. Concluding remarks on grazing and the natural environment

The restoration management prescriptions from EN and NE focused on reducing the grazing pressure and reducing burning. Whilst such prescriptions aided the blanket bog it was very much less successful at reducing the dominance of *Molinia* on the moors. NE in their 2013 Evidence Review on the impact of moorland grazing and stocking rates concluded “*There remains concern and disagreement about the effects of grazing on the upland landscape and biodiversity, in particular about stocking rates, different livestock types and the timing and spatial pattern of grazing* (Martin et al 2013 p11). This is despite an assessment of the literature which included 316 scientific papers on the subject.

However, there is another perspective which may help to explain why the restoration of upland habitats across the UK is proving to be so difficult and that involves the role played by atmospheric pollution.

Ecologists and conservationists have been aware of the problems caused by atmospheric pollution, particularly nitrogen deposition but they have seen it as an impediment to restoration rather than the driving force.

Chapters 4-12 cover issues around grazing and habitat quality. Chapter 6 focuses specifically on *Molinia*.

In 2002 Des Thompson, one of the UK most respected upland ecologists, said “*Some of us are beginning to form the view that some of the grass-dominated vegetation types of the southern uplands may be the product of nitrogen deposition*

²⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/225300/pb14009-biodiversity2020-progress-guide-20130730.pdf

and heavy grazing pressures. Hence, a reduction in grazing pressures alone may not necessarily result in an improvement in habitats” (Burt et al 2002 p37).

2.3. The impacts of atmospheric pollution

2.3.1. Nitrogen pollution

Since the Industrial Revolution humans have altered the natural biogeochemical cycles by increasing the availability of biologically reactive forms of natural elements such as nitrogen (Caporn & Emmett 2009).

In the UK, there are two distinct forms of nitrogen pollution – nitrogen oxides (NO_x) and ammonia (NH₃). Emissions from vehicles, power stations and factories are largely responsible for NO_x, whilst emissions from agriculture (livestock manures and fertilisers) account for the majority of NH₃.

NO_x compounds (known as oxidised nitrogen) can be deposited “wet” i.e. in rain as nitrate (NO₃) or “dry” i.e. as a gas as nitrogen oxide (NO₂). NH₃ compounds (known as reduced nitrogen) can be deposited wet as ammonium (NH₄) or dry as ammonia gas (NH₃). NO_x and NH₃ compounds cause acidification (lowering the pH) and eutrophication (increasing nutrient levels).

NO_x emissions peaked around 1990 and by 2015 had fallen 69% compared to the 1970 level. Ammonia levels have by comparison fallen just 9.9% between 1980 and 2015 (Defra 2015). However, despite the large falls in nitrogen emissions, the deposition of all nitrogen compounds has hardly fallen at all. This unexpected situation has arisen as the atmospheric chemistry over Britain has been altered leading to more rapid oxidation of nitrogen. This rapidly oxidised nitrogen is deposited in the UK when previously it would have been exported to Continental Europe (RoTAP 2012).

As a result, many parts of the UK have been receiving high levels of nitrogen deposition for decades.

Between 1989-92 total (oxidised and reduced) nitrogen deposition exceeded critical loads on Dartmoor in 841km² out of a total of 901.77 km² i.e. 93.3% of the total – making it the second most affected Natural Area in England (Brown & Farmer 1996).

Critical load is defined as the amount of acid or nitrogen deposition below which significant harmful effects do not occur to sensitive habitats. “Exceedance” is the amount of excess acid or nitrogen deposition above this critical load (Hall & Smith

2015).

The following table summarises the current position with regard to atmospheric nitrogen pollution on Dartmoor.

Table 8 Actual atmospheric pollution levels on the Blanket Bogs, Atlantic Wet Heaths with <i>Erica tetralix</i> and European Dry Heaths along with the exceedance loadings				
Nitrogen Deposition kg N/ha/yr	Acid Deposition Nitrogen Sulphur keq/ha/yr	Ammonia Concentration µg/m ³	NO _x Concentration µg/m ³	SO ₂ Concentration µg/m ³
Maximum: 30.38 Minimum: 14.28 Average: 21.65	Maximum: 2.17 0.5 Minimum: 1.02 0.21 Average: 1.55 0.35	Maximum: 1.63 Minimum: 0.51 Average: 0.75	Maximum: 8.09 Minimum: 4.05 Average: 4.9	Maximum: 0.75 Minimum: 0.43 Average: 0.5
Empirical Critical Load kg N/ha/yr	Acidity Critical Loads (keq)	Critical Level (µg NH ₃ /m ³ annual mean)	Critical Level (µg NO _x /m ³ annual mean)	Critical Level (µg SO ₂ /m ³ annual mean)
Blanket bog 5-10 Wet heath 10-20 Dry heath 10-20	MinCLMaxN: 0.830 MaxCLMaxN: 1.363	1	30	75
Habitats with Critical Load Exceedances on Dartmoor				
Blanket bog Atlantic Wet heath European Dry Heath	Blanket bog	Blanket bog Atlantic Wet heath European Dry Heath (maximums but not averages)	No exceedance	No exceedance

Air Pollution Information Service <http://www.apis.ac.uk/>

There is an extensive academic literature on the implications of atmospheric nitrogen pollution for semi-natural habitats and three main impacts have been identified (Bobbink et al 1998).

1. Accumulation of nitrogenous compounds resulting in enhanced availability of nitrate and ammonium
2. Soil mediated effects of acidification
3. Increased susceptibility to secondary stress factors

Long-term chronic nitrogen deposition has significantly reduced plant species richness and a study which included a Dartmoor site found that for every 2.5kg N ha⁻¹ of nitrogen deposition, one species per 4m² quadrat was lost. With an average nitrogen deposition rate of 17 kg N ha⁻¹ yr⁻¹, there was a 23% reduction in species richness compared to sites receiving the lowest levels of atmospheric nitrogen (Stevens et al 2004).

Two additional studies confirmed this loss of plant species richness (Stevens et al 2010 and Stevens et al 2011). The British Countryside Survey demonstrated the detrimental effects of nitrogen deposition on plant species richness and found that mires and heaths were more sensitive to ammonia deposition than nitrate deposition (van den Berg et al 2016). Not all plant species are equally affected, the diversity of mosses, lichens, forbs and graminoids decline whilst the cover of graminoids increases (Field et al 2014). A study on eight moorland sites including one on Dartmoor found that the accumulation of nitrogen had changed a substantial proportion of the heather dominated uplands from nitrogen-limited ecosystems into phosphorus limited ones and that this favoured *Molinia* as it was a species that was better adapted to phosphorus limitation than heather (Kirkham 2001).

A more complex relationship between nitrogen, *Molinia* and heather has been described in the Netherlands where nitrogen deposition increases the productivity of the dwarf shrubs such as heather, and that if the dwarf shrub canopy remains closed then they remain the stronger competitor against grasses such as *Molinia* and Tufted Hair Grass (*Deschampsia flexuosa*). However, if the dwarf shrub canopy is opened up by disturbance, then the grasses become dominant and the dwarf shrubs cannot recolonize. Disturbance to the dwarf shrub canopy can occur either by winter frost injury, drought or heather beetle (*Lochmaea suturalis*) attack. The likelihood of these beetle attacks was increased by enhanced nitrogen deposition (Bobbink et al 2010).

The Heather Beetle (*Lochmaea suturalis*) is a native Chrysomelid leaf beetle which feeds almost exclusively on heather (*Calluna vulgaris*). It is common in areas whether heather grows from the south of England to Orkney in the north (Duff 2016). Heather beetle populations are well known to fluctuate greatly from low numbers which have little or impact on heather plants to very high numbers which can lead to the widespread defoliation of heather and can cause its death.

Heather beetle outbreaks have historically been problematic for grouse moor owners and the issue of heather beetle and its control has been championed by the Heather Trust who have produced a short document on the species (Heather Trust undated). In addition, the Heather Trust commissioned a literature review of the species (Rosenburgh & Marrs 2010) which summarises the ecology of the beetle, its impact as a pest and strategies for control. This work has been updated (Gillingham et al 2015a and 2015b) and published as NE Evidence Reviews on its ecology and its management.

These reviews state the following regarding heather beetle outbreaks:-

- “Considerable damage to heather can occur with complete death in the worst cases”.
- “Large scale vegetation change can follow” (heather outcompeted by invasive grass species).
- “The occurrence and severity of heather beetle attacks appears to be made worse by increased levels of nitrogen in the soil and plant tissues, which has been blamed on high nitrogen pollutant inputs from the atmosphere in recent years”.
- “The high nitrogen in the leaves provides the beetles with more high-quality food to consume”
- “Climate change is expected to lead to increased winter survival of heather beetles”

There have been no published systematic surveys of heather beetle on Dartmoor and Goodfellow et al (1997) only briefly mention it: “Outbreaks of heather beetle cause local declines in heather”. However, my recent observations on the moor suggest that heather beetle damage is very widespread and extensive.

Nitrogen deposition also leads to increased concentrations of nitrogen in the growing shoots of heather which makes them more susceptible to increased grazing pressure by sheep which can lead to the deterioration of heather moorland as it is preferentially overgrazed (Kirkham 2001 citing an unpublished report by S.E Hartley). Approximately 60% of all plant species studied react adversely to nitrogen deposition at levels below the published critical load exceedances (Payne et al 2013).

The effects of nitrogen deposition are not related only to plant communities. In a study of the long-term changes in British moth communities, species associated with low nitrogen, based on their larval host plant characteristics, declined most strongly (Fox et al 2014). Butterfly species in Sweden which rely on nutrient poor conditions tended to decrease whilst those reliant on nutrient rich conditions increased (Ockinger et al 2006).

Nitrogen deposition is a serious threat to British peatlands and is likely to remain so for some time to come (Payne 2014). In a study looking at the likely impacts of nitrogen deposition up to 2030 in heaths and bogs reductions in species richness were predicted with decreased occurrence of terricolous lichens and some bryophytes, reduced cover of dwarf shrubs and a small increase in grasses (Stevens et al 2016).

Addressing the question of how long ecosystems might take to recover from atmospheric nitrogen deposition Stevens (2016 p166) concluded:

There are a number of barriers to recovery such as continued critical load exceedance and lack of seed bank or local seed source, and there is potential for vegetation communities to reach an alternative stable state where species lost as a consequence of changes due to nitrogen deposition may not be able to recolonise.

In 2011, the Joint Nature Conservation Committee published a series of reports it had commissioned on the evidence of nitrogen deposition impacts on vegetation (Stevens et al 2011, Emmett et al 2011 and JNCC 2011). This work provided a new analysis of eight national scale datasets which showed significant responses in cover and presence of 91 plant and lichen species in relation to nitrogen deposition. The summary report concluded that “*nitrogen deposition is compromising our ability to deliver current conservation commitments such as the objective to achieve Favourable Condition Status under the Habitats Directive.*” (JNCC 2011 p1)

NE (2015) published a document entitled “Atmospheric nitrogen theme plan – developing a strategic approach for England’s Natura 2000 sites. The plan reported that, in England, 80% of sensitive Special Areas of Conservation (SAC) and 70% of sensitive Special Protection Areas (SPA) are estimated to exceed the critical load for one or more of their protected features. Both of Dartmoor’s moorland SACs exceed their critical load levels.

The document also contains a table setting out the threats from nitrogen for each of England's SACs. The Dartmoor relevant section is set out in the following table.

Table 9 Nitrogen critical load levels on the Dartmoor SAC					
SAC Name	Sensitivity code	Level of Critical Load (CL) exceedance	Likelihood of N impact	Relevance of local agricultural NH ₃ sources	Potential significance of local NH ₃ measures
Dartmoor	Very sensitive CL 5-10 kg N/ha/yr	Very high CL exceedance > 28kg N/ha/yr	Very likely Sensitive and high level of CL exceedance	Medium Agricultural deposition 20-40%, NH ₃ dry deposition > 10-20 kg N /ha/yr NH ₃ emissions within 2-3km of site 6-10 kg N /ha/yr	Medium

The theme plan then proposes a trial of "Site Nitrogen Action Plans" (SNAP) which would document:

- The current status of the site in terms of nitrogen deposition and attribution of this nitrogen to identify the most significant sources,
- The expected future decline in background deposition at the site as a result of existing national and international measures,
- Coordinated locally targeted measures to reduce the contribution of local sources where feasible and appropriate,
- Habitat restoration and management measures that mitigate the impact of atmospheric nitrogen.

The impact of atmospheric nitrogen pollution has recently received more profile and publicity with the publication of a report by Plantlife (2017) "We need to talk about nitrogen – the impact of atmospheric nitrogen deposition on the UK's wild flora and fungi". It would appear that the problems of atmospheric nitrogen pollution are becoming more widely known but there are still many conservation managers who are still unaware of the issue.

2.3.2. Concluding remarks on atmospheric pollution.

The atmospheric pollution literature tells the story that human activity since the Industrial Revolution has changed the composition of the air and that this, under certain environmental conditions, can change habitats and species in ways that would not have occurred in the absence of enhanced levels of nitrogen. Recent research from the uplands of England clearly demonstrate that atmospheric pollution, grazing and burning regimes combine to detrimentally impact habitats (Noble et al 2017). Favourable condition is a highly technical measure which as a result of atmospheric pollution many be unattainable within 30 years whilst pollution levels remain high (Payne et al 2017). Chapters 6 and 8 discuss atmospheric pollution issues.

2.4. The ecological impact on the Historic Environment

The archaeology and historic landscape of Dartmoor is of international significance containing features dating back to the Neolithic, through the Bronze and Iron Ages and on through the Medieval Period right up to the modern era, all of which demonstrates that Dartmoor is a cultural landscape (Newman 2011).

However Historic England (2016) in their Heritage at Risk register list 180 archaeological sites on Dartmoor which they consider to be at risk. For all the sites listed (bar one) the principal vulnerability is "*Plant growth*", the trend is "*Declining*" and the condition is "*Generally satisfactory but with significant localised problems*". English Heritage (2004) states "*Insufficient grazing can permit the development of scrub, bracken and weeds on a monument. Scrub causes significant damage to archaeological sites through root penetration, providing cover for burrowing animals and shelter for livestock. Bracken is also highly damaging to archaeological sites because it develops a dense layer of rhizomes below ground. It is therefore desirable to reduce the amount of scrub and bracken on an archaeological site to reduce this damage and maintain the visibility of earthworks.*" They go onto to recommend the following management options to prevent these problems.

- Control scrub by cutting and treating with a herbicide to prevent re-growth
- Increase grazing where practical to help control scrub or bracken recovery

The majority of the archaeological sites on the register are located on the Commons of Dartmoor where NE have been using agri-environment schemes to reduce

grazing to encourage the re-growth of heather and gorse.

Greeves (2006b & 2015) argues that the grazing pressures seen on Dartmoor during the 1970s and 1980s were in fact *“hugely beneficial and indeed revolutionary in cultural terms, revealing an unrivalled suite of archaeological features which had in many instances not previously been recorded”*. He goes on to say *“For the past twenty years NE has clung to the concept of “over-grazing”, and required the removal of up to 80 per cent of livestock from commons, resulting in much of the archaeology being obscured under gorse or long, unpalatable grass”*.

Greeves' views are not shared by all archaeologists. Recent research on Dartmoor using multiple spatially distinct pollen cores has shown that the landscape and habitats in the Bronze Age were much more heterogeneous than have been previously thought (Fyfe & Woodbridge 2012 and Fyfe et al 2016). This work has shown that woodland was an important component of the high moor right up until the Iron Age. Previous to this work, it was assumed that the high moor woodland was cleared by fire and grazing during the Bronze Age (Caseldine & Hatton 1994). This homogenous view of the high moor (since the Bronze Age) has become the dominant narrative and it is still perpetuated by the DNPA in their publicity material³⁰ and is a key factor behind the views expressed by Greeve (2015) that high Dartmoor should be a closely grazed landscape.

From a different perspective Fyfe & Woodbridge (2012) conclude by saying *“The results are useful for conservation strategies by demonstrating variability in spatial diversity of vegetation patterns in the past, and pointing towards opportunities to recreate and maintain diverse vegetation mosaics”*. Fyfe (per comm) believes that the paleo-ecological record provides *“long term ecological data”* which can be used to construct future restoration plans. Implicit in this is that a more wooded landscape in the uplands of Dartmoor in the future is in keeping with its more recent past and does not necessarily compromise the historic landscape from the Bronze Age. Issues and conflicts around the historic environment on Dartmoor are discussed further in chapter 8.

³⁰ Prehistoric Archaeology Factsheet <http://www.dartmoor.gov.uk/learningabout/lab-printableresources/lab-factsheetshome/lab-prehistoricarchaeology>

2.5. Rewetting the Mires

Hydrologically functioning peatland are known to deliver a range of important ecosystem services, such as the conservation of biodiversity, the capture and storage of carbon and the provision of clean water (Bonn et al 2016a and Charman 2002). As a result, a UK wide strategy has been drawn up to conserve and restore the country's peatlands (IUCN 2018) and for England these aims have been incorporated in the Government's 25 Year Environment Plan (Defra 2018).

Bellamy et al (2005) reported that all soils in England and Wales were losing carbon between 1978 and 2003 and their maps show that some of the highest losses were occurring on Dartmoor. The blanket bogs and mires of Dartmoor are extensive areas of international importance for their wildlife as well as being an important store of carbon, Parry & Charman (2013) calculated that the Dartmoor peat stores amount to 9.7 ± 2.97 Mt of carbon. The extent and state of peatlands on Dartmoor has been mapped (Luscombe et al 2016) and a further study concluded that 29km² of the peatland resource was ecohydrologically damaged and only 3.6km² was functionally intact bog (Luscombe et al 2017).

In 2010 the Dartmoor Mires pilot project was established to conduct peat restoration works on the north moor to assess their feasibility, desirability and potential for success. Work was carried out at three sites: Winneys Down, South Tavy Heads and Flat Tor Pan. This work was considered successful by the partnership involved (led by the DNPA and South West Water) and following the launch by Defra in 2017 of a new capital grant scheme for the restoration of peatland in England, the Southwest Peatland Partnership successfully bid for additional funds to restore an additional 276ha of blanket bog on Dartmoor (DNPA 2017).

Much of the research from this project is still in the process of being published, but the project, for example, clearly demonstrated that mire restoration had beneficial results for dunlin³¹ and where mire restoration saw the new growth of Sphagnum species opposed to vascular plants there were benefits for potable water supplies (Ritson et al 2016).

Other archaeologists have argued that rewetting peat may bring positive benefits such as the preservation of the pollen record in the peat and gives opportunities for

³¹ Dunlin breeding success after restoration <http://www.dartmoor.gov.uk/lookingafter/laf-naturalenv/dartmoormiresproject/mires-monitoring>

archaeologists to become more integrated into the Ecosystem Services Framework (Gearey et al 2014).

The Dartmoor Mires Project, as well as being a mechanism to determine how the blanket bog might be restored, was also a vehicle to experiment how an ecosystems services model might operate on Dartmoor which, if successful, could provide new income streams for the Commoners via the delivery of clean water, mitigation against flooding and the conservation of the peatland resource, in addition to the funding received to conserve and enhance wildlife populations. The progress and conflicts around re-wetting Dartmoor's mires are discussed further in chapter 8.

2.6. Conflicts around re-wilding

Re-wilding has become a popular idea in recent years as it is seen by some as an antidote to traditional conservation practices in the face of continuing declines in wildlife (Helmer et al 2015 & Rewilding Britain 2017).

The term has its roots in the North American wilderness movement as a mechanism for returning wild lands back to a pre-colonial natural landscape (Nash 2014). The actual term was first coined in 1990 (Foote 1990) and was then refined in 1998 by the leading international conservation scientists Michael Soulé and Reed Noss (Soulé & Noss 1998). This approach has received criticism as some have argued that as a result of pollution and climate change nature is no longer natural as the earth has entered the Anthropocene (McKibben 1990 & Lorimer 2015).

The “re” in re-wilding has also been extensively questioned – re-wilding back to when and to what? Post-glacial ecosystems in Britain have not existed in the absence of humans and in the current context of climate change and atmospheric pollution attempting to seek out a historical starting point for a restoration / re-wilding trajectory is impossible (see Deary & Warren 2017, Rotherham 2014 & Ridder 2007 for example). In an attempt to get around these problems the terms “wilding” and “wild land” opposed to “re-wilding” have been used extensively in Scotland (McMorran et al 2008) but to date the term “re-wilding” is routinely used in England.

Post war Nature Conservation policy in the UK (see NCC 1984, for example) is based upon conserving pre-modern agricultural landscapes using scientifically researched un-intensive management prescriptions (Lorimer 2015). Adams (1997) describes this approach as “equilibrium ecology and conservation”, that is, a process

which holds habitats at a single and stable point in their succession. Such an approach is almost unique to the UK and whilst it has evidently been successful at conserving many species and habitats, it does make such ecosystems vulnerable when environmental conditions change as the management prescriptions do not allow them to adapt to the changes (Adams 2003). Hinchliffe (2006) has described this approach as “rendering the present eternal”.

I have drawn on the theoretical work on equilibrium and non-equilibrium ecology and conservation to show the options for ecological management and restoration ³².

1. Continuation of the “status quo” i.e. conserving pre-modern agricultural landscapes (equilibrium ecology and conservation)
2. Soft re-wilding - a hybrid equilibrium / non-equilibrium ecology and conservation)
3. Non-deterministic approach to goal setting which I call “constrained re-wilding” (non-equilibrium ecology and conservation)
4. Re-wilding (non-equilibrium ecology and conservation) – apex predators and keystone species

Category 1 represents the current land management practices carried out on the Commons of Dartmoor, also known as conserving “semi-natural” pastoral landscapes or cultural landscapes. Category 2 is an option favoured by some commentators which sees the moors become more ecologically diverse whilst still allowing agro-pastoral management by Commoners (Kelly 2016).

In the UK category 3 applies to a few projects such as The Wicken Fen Vision (Colston 2003 and Hughes et al 2005) and the Knepp Wildlands (Tree 2018) project which I have termed constrained re-wilding. “Constrained” because in Britain there are external constraints which limit total non-intervention e.g. adjacent landowners and secondly the apex predators and many of the keystone species are absent so intervention by humans is required.

Category 4 is currently absent from the UK and it is this that some rewilders wish to see return.

³² Beyond preservation: the challenge of ecological restoration – can you live with ambiguity or do you want to be in charge? A practitioner turned researcher’s tale. LEEP Seminar, Department of Politics, University of Exeter. March 2017.

Re-wilding as an idea is popular with many as it offers hope, this is how Rewilding Britain describe it.

Re-wilding is the large-scale restoration of ecosystems where nature can take care of itself. It seeks to reinstate natural processes and, where appropriate, missing species – allowing them to shape the landscape and the habitats within.

Re-wilding encourages a balance between people and the rest of nature where each can thrive. It provides opportunities for communities to diversify and create nature-based economies; for living systems to provide the ecological functions on which we all depend; and for people to re-connect with wild nature ³³.

However, there have been a number of criticisms of this approach as to its impacts on wildlife, the historic environment and the local hill-farming culture. The traditional view of wildlife management has been supported by the majority of land managing conservation organisations and many academics who are concerned that re-wilding such places will lead to the loss of the existing wildlife interest which will lead to a net loss of biodiversity interested (Rotherham 2014 & Saunders 2016 for example).

Re-wilding tends to focus on wildlife and natural processes and as a result has put it in direct conflict with those interested in the historic environment. Hourdequin & Havlick (2016) sum up this issue as follows,

Almost every landscape is a layered landscape, through a combination of natural and cultural events, landscapes accumulate layers of history. Ecological restoration aims to bring back one particular landscape layer often at the expense of others.

and Deary (2016) urges the following,

The current struggle to reconcile the restoration of wilderness values with rich cultural heritage presents an immense opportunity for considering ways of re-framing our ideas of wilderness and history to ensure that future restoration aimed at bringing new value does not always result in the loss of another value.

³³ <http://www.rewildingbritain.org.uk/rewilding/> (last accessed 26/7/21)

Similarly, local hill-farming communities fear re-wilding despite the earlier stated claims that it would allow them to “diversify”. Olwig (2016), writing about the Lake District suggests that re-wilding is a form of “virtual enclosure which is antithetical to both the practice of pastoral commoning and much contemporary natural science and conservation policy”. In my view, without consent the imposition of re-wilding either by statute or via a withdrawal of financial support amounts to the “virtual enclosure” of the Commons – a modern form of the Highland Clearance in a moorland context.

The situation in the UK is rather different to that on continental Europe where re-wilding has taken place on farmland which has been abandoned as the agricultural economics have forced farmers to leave the land and seek other employment in urban areas. Re-wilding has therefore happened as a consequence of economics, not as a result of a deliberate conservation land-use policy (Navarro & Pereira 2015).

2.6.1. Re-wilding and Dartmoor

The first initiative to re-wild Dartmoor began in the early 1990s by a small community group called Moor Trees³⁴ who wanted to see more deciduous woodland on Dartmoor. Their approach was generally inclusive, participatory and non-confrontational.

The next proposal came from Taylor (2005) where in his book *Beyond Conservation* he proposed that the south west corner of Dartmoor would make an ideal area where re-wilding could take place. He suggested that as the land was in part owned by the NT this would help get the project going. He also suggested that this “rewilded” corner of Dartmoor would be able to support a viable population of lynx. This proposal remained solely as an idea in a book, the practical complexities, obstacles and social implications were never explored or discussed with any local stakeholders.

These two examples of re-wilding perhaps indicate why the term is so misunderstood and so contentious. On one hand re-wilding can be small scale, participatory and non-threatening whilst on the other it can be seen as imposed, far reaching and threatening. As a result, many definitions of re-wilding exist and the concept means many different things to different audiences.

³⁴ see <http://www.moortrees.org> (last accessed 21/7/21)

Monbiot (2013) in his book *Feral* provided his definition “The re-wilding of natural ecosystems which fascinates me is not an attempt to restore them to any prior state, but to permit ecological processes to resume. Over the past few decades, ecologists have discovered the existence of widespread trophic cascades. These are processes caused by animals at the top of the food chain, which tumble all the way to the bottom. Predators and large herbivores can transform the places in which they live. They make a powerful case for the re-introduction of large predators and other missing species.” (Pages 8-9).

As POSTnote (2016 p1) points out there is no single definition of re-wilding “but it generally refers to reinstating natural processes that would have occurred in the absence of human processes”. With this definition it is clear to see why the hill-farming community on Dartmoor has been so outraged and opposed to the idea of re-wilding on the moor.

Chapter 9 introduces and discusses the recent developments and controversies around re-wilding on Dartmoor and illustrates how re-wilding is currently a rapidly developing idea.

2.7. Conflicts from the Anthropocene - climate change

Current climate modelling for the UK projects that it will become warmer in all seasons of the year, there will be higher rainfall in the winter with lower rainfall in the summer and that there will be an increase in the frequency and magnitude of intense rainfall events throughout the year ³⁵.

Table 10 provides the future projections for the climate in south west England over the time periods 2020, 2050 and 2080.

³⁵ UK Climate Projections 09 <http://ukclimateprojections.metoffice.gov.uk> (accessed 2/7/17)

Table 10 Southwest Climate data UKCP09 Medium Emissions Scenario				
	Time period	Change at 10% probability	Change at 50% probability	Change at 90% probability
Mean winter temp (°C)	2020s	0.6	1.3	2.0
	2050s	1.1	2.1	3.2
	2080s	1.6	2.8	4.3
Mean summer temp (°C)	2020s	0.5	1.6	2.7
	2050s	1.3	2.7	4.6
	2080s	2.1	3.9	6.4
Mean winter precipitation (mm)	2020s	-2	7	20
	2050s	4	17	38
	2080s	6	23	54
Mean summer precipitation (mm)	2020s	-27	-8	14
	2050s	-42	-20	7
	2080s	-50	-24	6

Globally peatlands and blanket bogs are threatened by climate change (Gallego-Sala & Prentice 2013) and Dartmoor is one of the most vulnerable peatlands in the northern hemisphere on account of its latitude and relatively low altitude (Clark et al 2010). The climate on Dartmoor may have already shifted enough so that the bioclimatic envelope required for the formation of peat is no longer present on Dartmoor, except at the highest altitudes, as the peat formation process requires a cool and wet climate (Gallego-Sala et al 2010).

Climate change in conjunction with the high levels of nitrogen deposition has made Dartmoor, the Brecon Beacons and the western Lake District particularly vulnerable to *Sphagnum* moss dieback (Smart et al 2010).

As the climate continues to change the eventual fate of the existing peat left outside of its bioclimatic envelope is unknown (Gallego-Sala et al 2010). Afforestation, re-wetting, revegetation, cessation of managed burning and the removal of grazing animals are all likely to conserve the existing carbon stores. Deforestation and drainage are likely to lead to the loss, at least in part, of carbon stores (Worrell et al 2010). The changing climate is not just affecting habitats it is and will in the future impact on species as well.

A number of studies have been published which discuss the impact of climate on birds in the UK (Huntley et al 2007, Ausden et al 2015, Pearce-Higgins et al 2015 &

Pearce-Higgins 2017). All these predict that species at the southern end of their European ranges will decline and species at the northern end of their range will increase. Upland species appear to be most at threat with over 40% of birds species at high risk (Beale et al 2015).

Dartmoor is host to a number of species at the southern end of their European range such as Dunlin (*Calidris alpina*), Golden Plover (*Pluvialis apricaria*) and Ring Ouzel (*Turdus torquatus*).

Around a dozen pairs of Dunlin still breed on Dartmoor and have recently responded positively to the re-wetting works (RSPB 2014), the Golden Plover is now extinct on Dartmoor as a breeding species (Beavan & Lock 2016), the Ring Ouzel has declined dramatically - there were around 35-45 pairs between 1977 and 1985 (Sitters 1988) but by 2012 there were only 11 (Wotton et al 2016) and Red Grouse has declined on Dartmoor by 50% between 1977-85 and 2007-2013 (Beavan & Lock 2016).

Whilst there are a number of factors involved with these declines such as habitat management and hydrological conditions, climate change has been implicated for many. The most detailed analysis of the short to medium term impact has been carried out for the Ring Ouzel (Beale et al 2006 and Wotton et al 2016).

By the end of the current century there is the potential for much change on Dartmoor, many of the bird species which are today considered to be iconic of the National Park are predicted to disappear, for the moors these are dunlin, golden plover, ring ouzel, curlew, raven, peregrine, red grouse and whinchat. There are also two species of bird which used to inhabit the moor, the hen harrier and the black grouse, which are now extinct and it is projected that Dartmoor will no longer contain a climate envelope which would allow their re-introduction (Huntley et al 2007).

In another study, the following Dartmoor birds were considered at very high risk: cuckoo, curlew, red grouse, ring ouzel, peregrine and whinchat (Beale et al 2015). Caution needs to be applied to these findings as they are modelling studies based on the climate models and we don't know exactly how the climate will change and how these changes conditions will affect wildlife or their ability to adapt to the new conditions (Scott 2009).

Climate changes issues are discussed in a number of the following chapters most notably in 6-12.

2.8. Concluding Remarks

Initially, the restoration of the moorland habitats and wildlife on Dartmoor was seen as an ecological issue, one which could be achieved by following appropriate management prescriptions based upon suitably designed and executed research which reduced the grazing pressures and intensive swaling practices. However, as this chapter has demonstrated, the actuality on the ground has proven more complex and involves a number of disciplines beyond applied ecology.

As I set out earlier in this chapter the complex and multi-disciplinary nature of the conflicts on Dartmoor's Commons were apparent from the early 2000s. Debates and arguments around over-grazing, the desire to restore wildlife, the unintended consequences for the historic environment, the need to restore hydrological functionality and for some the imperative to seek new solutions via re-wilding initiatives were common and the search for consensus was elusive. The next chapter sets out the methodology used to interview the various stakeholders and explore the details and richness of their stories. From these interviews it has been possible to create a series of narratives around the conflicts on Dartmoor and these have been set out and analysed in chapters 4-12, using Narrative Policy Analysis (Roe 1994) and the Narrative Policy Framework (Jones, Shanahan & McBeth 2014).

3. Methodology

3.1. Introduction

Chapter 2 details a considerable academic literature around issues regarding the unsustainable exploitation of upland habitats in the UK since the 1970s. These papers largely set out the positions of academics, the statutory Nature Conservation bodies, other conservation bodies, archaeologists and hydrologists. The farming press, however has been vocal over the entire period but their role has been to dispute the findings of specific publications or policy reports. An example of this would be unfavourable reaction by the farming community to the publication of NE's policy document – *Vital Uplands: a 2060 vision for England's upland environment* (NE 2009b), as reported by *Farmers Weekly* (Tasker 2012), in which it is reported that the report had been rejected and quoted the NFU as saying "The only good thing about the vision was its title. The uplands are vital, but the vision was not one of productive hill farming or rural communities." A recent Dartmoor example would be the reporting of negative reactions from the farming community to NE's request to Commoners to remove sheep from Okehampton Common during the winter months (Case 2020). Farming groups have also produced their own policy documents aimed at informing their members and influencing government. An example of this is the National Sheep Association's publication "The complementary role of sheep in upland and hill areas" (NSA 2016), where the organisation is making the case for the beneficial role that sheep can play in managing upland habitats for multiple outcomes.

What is missing from these publications are views of individual stakeholders, most notably, those of hill-farmers. There have over the years been specific accounts of the day-to-day lives of farmers, early examples would include *A Shepherd's Life* published in 1910, detailing the working life of Caleb Bawcombe in rural Wiltshire (Hudson 2016) along with the works of George Ewart Evans, a pioneer in rural oral history capturing the lives of rural workers in East Anglia in the 1950s (e.g. Ewart Evans 1956).

A contemporary academic account of upland rural life is given in *At Home in the Hills* (Gray 2000) which focuses on farming practices and the importance of the local rural culture and traditions. Following in a similar tradition James Rebanks, a Lake District hill-farmer sets out his working practices and traditions as told through the seasons

in *The Shepherd's Life*. Three other recently published books (*A Year in the Life of the Yorkshire Shepherdess*, Owen 2016; *Red Rag to a Bull*, Blackett 2018 & *Native*, Laurie 2020) written by hill-farmers continue this trend bringing alive day to day working practices set against the external challenges they face. Finally, *English Pastoral* (2020), Rebanks' second book is an account of how hill-farming in the Lake District has intensified considerably since his Grandfather's tenure on the farm in the 1960s and 1970s to the point where the intensive management has seriously depleted his farm's wildlife, the book concludes with Rebanks' account of how he is reverting to a more traditional and less intensive manner via a regenerative agricultural and creative conservation approach.

In a Dartmoor context three series of books have been published which specifically refer to the working daily lives, challenges and traditions of Dartmoor hill-farmers. *The Complete Bullocks* (2011) and *All the Usual Bullocks* (2013) by Anton Coaker present a series of anecdotal and sometimes tragic accounts of his life and work. By contrast Colin Pearse (2004 & 2016) has produced 2 historical volumes of work on the Dartmoor White-faced sheep breed which includes accounts of the individual hill-farmers who still rear this rare breed. He has also produced 2 volumes on South Devon Cattle for the breed's Herd Book Society (2019 a & b) and whilst these books are not exclusively about Dartmoor they do include accounts of the era of transhumance when South Devons were summered on Dartmoor along with details of the farmers and hill-farmers who reared them. The book gives a clear indication through the text and numerous photographs how important this breed was on Dartmoor. Finally, *Farming Dartmoor* by Damian Bird is predominantly of photographic publication it captures the working lives of 6 Dartmoor hill-farming families and the book also contains six short accounts of these hill-farmers views on the conflicts they have been on Dartmoor between farming and environmental issues over the past 25 years or so. Whilst the book was published following the completion of my research it is the first account which begins to very briefly capture some of the issues covered in the following chapters.

What none of the academic papers or farming books described above give are any real indication about what the various participants or stakeholders really think about the actual issues that have occurred and are occurring or what they think of the other stakeholder groups. One of the main purposes of my research was to interview in

detail a selection of the main participants involved, from hill-farmers through to landowners, conservationists, statutory body officials, archaeologists, hydrologists and re-wilders.

The remainder of this chapters discusses my qualitative approach and my use of narrative in this research.

3.2. A Qualitative Approach

3.2.1. Introduction

The core purpose of this research was to determine what the key stakeholder groups thought and felt about the series of events that have unfolded over the past 25-30 years. For example, what did hill-farmers think about the allegations that they were damaging the wildlife of the Commons as a result of their farming practices, what were their views on the new management prescriptions that were brought in to restore the moorland, what do they think about the various campaigns to re-wild Dartmoor, and do they believe that their culture and traditions will survive into the future.

In order to achieve this, a qualitative approach was adopted, rather than a quantitative one. Bryman (2016 p401) states a qualitative approach puts the analysis of words at its core, it seeks to put the views and opinions of those being studied to the fore; the researcher seeks a close involvement with the people being investigated so that he / she can see the world through their eyes, theories emerge as a result of what is said, rather than testing pre-conceived ideas; it is ideally suited to situations which unfold over time; techniques are unstructured thus allowing an increased understanding of the meaning and concepts that interviewees are trying to present; qualitative research allows context to be primary with relation to behaviours, values and beliefs; it provides rich deep data; a qualitative approach allows the study of the small-scale aspects of social reality and their interactions and finally the qualitative researcher can operate in natural settings rather than the artificial settings favoured by quantitative researchers.

3.2.2. Interviews and interviewees

3.2.2.1. Introduction

In order to gain the richest data, I adopted the use of semi-structured interviews tailored to each of the specific stakeholder groups. The interview questions / topics

are set out in section 3.2.2.4. Such an approach, allowed me to produce a list of relevant topics and questions whilst also giving me the flexibility to focus on specific areas of interest as they evolve during particular interviews (Bryant 2016 p468). Interviews were planned to last around 1 hour but in several cases they extended to approaching 2 hours (with the consent of the interviewee). All interviews were recorded on a digital recorder and were then transcribed later. Prior to the commencement of each interview, the interviewee was asked to sign a consent form, which all agreed to do. This research was granted a university Certificate of Ethical Approval on the 26/10/17 and all interviews were completed by the expiry date of the 31/1/19.

3.2.2.2. The Sampling of Interviewees – non hill-farmers

As I have been a practitioner in the conservation field for over 30 years and had spent 11 years on Dartmoor involved with the problems on the Commons, I was more familiar with the views of the conservationists, archaeologists, hydrologists, re-wilders and landowners than I was with the views of the hill-farmers. As a result, I interviewed 33 hill-farmers (29 from Dartmoor and 4 from Exmoor), 20 conservationists, 3 archaeologists, 2 hydrologists and 2 academics. The term “conservationist” is a broad category and includes ecologists, nature conservation advisors, managers and senior managers in conservation organisations (statutory and non-statutory), re-wilders and those involved with access and landscape issues. The selection of the conservationists, archaeologists, re-wilders and hydrologists, for interview was relatively straight-forwards as I needed to interview those individuals who had been or were currently involved with the conflicts on the Commons – a clear example of purposive sampling. Of the 18 conservationists, 7 had historically been involved with the issues and management of Dartmoor’s Commons and 11 were actively involved at the time of the interviews. There are far fewer archaeologists involved with Dartmoor’s Commons but the three selected are all active practitioners and I considered their views representative. Again, the hydrologists were self-selecting from a very small pool of options, both were actively involved with hydrological issues on the moor. 2 academics were selected on account of their relevant research interests. Of this group, I had already met 23 of the 27 non-hill farmers prior to the commencement of the interviews and I knew the other 5 by reputation.

3.2.2.3. The Sampling of Interviewees: hill-farmers

There are over 850 registered commoners on Dartmoor, but less than a quarter of these are active hill-farmers on the Commons³⁶. There are also 85 separate registered Commons³⁷. In order to select a representative sample of hill-farmers a number of criteria were used:

1. A small number of hill-farmers (less than 5) were selected purposively as they held important positions in their respective Commons Associations.
2. Geographic spread – the very large Forest of Dartmoor common sits at the centre of the moor and the other 84 Dartmoor Commons which surround the Forest are divided into four Quarters (West, North, East and South). I wanted to get a reasonable geographic spread of commoners from across the 4 Quarters and from the Forest of Dartmoor. 22 of those interviewed were very active commoners in the Forest of Dartmoor, alongside 9 from the West Quarter, 13 from the East, 4 from the South and 6 from the North.
3. Active commoners and non-active commoners – a number of commoners have common grazing rights but for a variety of reasons chose not to exercise their rights. Their views are important as in many cases they are part of the agri-environment schemes and have volunteered to remove their stock so that maximum stocking levels on their Common are not exceeded. In other cases, they have been excluded from their Common by the behaviours of their fellow commoners (see chapter 7). 22 commoners with rights in the Forest were interviewed along with an additional 4 who were non active commoners. Additionally, one individual from the South Quarter had rights which were not exercised.
4. Gender – hill-farming can be perceived as a male dominated profession but there are a number of female hill-farmers. Of the 29 Dartmoor hill-farmers interviewed 9 were female.
5. Age – the average age of a farmer in England is 59 (Lobley et al 2019 p68) and it was considered important to gauge the views of younger farmers and well as those of older ones. The average age of the Dartmoor hill-farmers interviewed was 52.6,

³⁶ Dartmoor Commoners Council website https://www.dartmoorcommonerscouncil.org.uk/menu_page.php?id=51

³⁷ Dartmoor Commoners Council website <https://www.dartmoorcommonerscouncil.org.uk/data/uploads/411.pdf>

with spread of 24 to 80. Of the younger hill-farmers interviewed one was under 25, two were 30 and three were aged between 39 and 45.

6. Membership of the Dartmoor Commoners Council – the Commoners Council is the statutory body to administer rights, grazing and other farming activities on the Commons. It was important to ensure members of the Council (who are also hill-farmers) were interviewed. In total 10 members of the Council were interviewed.

I received assistance from the Dartmoor Hill Farm Project and the DNPA to draw up a list of potential hill-farmer interviewees to meet the criteria above. In addition I used a snowball sampling technique (Bryman 2016 p415, Robson & McLartan 2016 p281 and Creswell & Plano Clark 2018 p176) after I interviewed hill-farmers so that they could recommend suitable potential interviewees. Three hill-farmers I approached declined to be interviewed. Of the 29 Dartmoor hill-farmers interviewed I knew 4 of them prior to commencing my research.

3.2.2.4 Interview guides

This section contains the broad interview guides that were prepared for the interviews with hill-farmers, conservationists, archaeologists and hydrologists. The questions were drawn up based upon my knowledge of the conflicts on Dartmoor's Commons when I was a practitioner, my reading of the relevant local literature and local media sources. The hill-farmer suite of questions was devised so that I could understand the hill-farming culture on Dartmoor, their attitudes to the changes that had taken place to hill-farming practices since the introduction of the agri-environment schemes and the impacts these had had on the moor and their businesses.

A. With regard to the hill-farmers

I want to try and understand how they view themselves

What are their views around conflict and consensus,

How do they view the threats to their culture and traditions,

What are their attitudes towards government bodies and their management prescriptions

How do they see hill-farm economics developing in a post-Brexit world?

Do they have any views about the role that atmospheric pollution has played in the uplands

Do they feel threatened by the talk of rewilding?

What problems are encountered as a result of recreational and access issues?

What are their views on the Dartmoor Farming Futures' Outcomes Approach

What do they think about "public money for public goods"?

Do they feel they have a future?

B. What do the **conservationists and ecologists** think about the state of Dartmoor's Commons today and why do they think it is as it is?

What role do they think that over-grazing and over burning has played

What about atmospheric pollution and climate change?

What are their views on the effectiveness of the a-e-s management prescriptions?

Do they see the management of Commons being driven by a pastoral grazing regime or do they favour some form of re-wilding in the future?

What are their views on the search for consensus and what do they think will be required in the future?

What are views on "favourable condition"

Do they think that Brexit will help or hinder restoration plans?

C. What do the **archaeologists** think?

What do they think of the state of the Commons?

Are they happy with the Premier Archaeological Landscapes?

Does Dartmoor look like they think it should and are the various artefacts and monuments adequately conserved / preserved?

What is the relationship like between archaeologists and conservationists on Dartmoor?

What are the future management requirements of the Commons for the historic landscape? Do the paleo-ecologists have a different view from the archaeologists?

I'm interested in why the Dartmoor Society are so opposed to the re-wetting the mires work and why their views are not echoed by other conservation and historic landscape interests.

D. What do the **hydrologists** think?

Can you summarise your restoration work on the mires of Dartmoor?

Can you tell me about the mires mapping project?

Why are the mires in the state that they are in – role of grazing, swaling and historic drainage?

What is the role of atmospheric pollution in your view?

What do you make of some farmers' objections to your work?

What role might "payments for ecosystem services" have in the future and why has any progress with this failed so far?

Does re-wilding have any relevance to your work?

What are your views on the Dartmoor Society's objection to your work?

3.2.2.5. Field visits

After all the interviews I conducted with the hill-farmers, conservationists, archaeologists and hydrologists I visited the Commons which were discussed. I wanted to get a feel for what was described to me actually looked like on the ground. No attempt was made to collect any data, the exercise started off as an informal mechanism for sense checking what the interviewees had told me. Many of these walks were long (10 miles plus) into remote parts of the moor which I had not been to before or had seldom visited. It soon became apparent that these field visits were extremely important as the remote parts of the moor look and are managed very differently from those areas close to the moor-gates. It became apparent very quickly that very significant areas of the high moor were now significantly under-grazed and contained very few grazing animals, something which contrasts moorland areas by the moor-gates. Between 2017 and 2020 I carried out over 80 field visits to 70 of Dartmoor's Commons and this has informed my research and interviewing.

3.2.3. Case Study – Molland Moor, Exmoor

Whilst I was still working for the NT in 2015 I was invited to visit Molland Moor in Exmoor National Park (SX8130). Molland Moor is not a Common, instead it is land owned by an Estate and let under a tenancy to an individual tenant. During the 1980s EN imposed grazing and swaling restrictions as they were concerned about the rapid decline in heather. Rather like the position on Dartmoor following the introduction of restrictions the abundance of heather continued to decline and the vegetation became dominated by *Molinia*. In 2014 a project was set up between the Molland Estate and The Heather Trust to see if the abundance of *Molinia* could be reduced and heather could be encouraged to re-establish. My visit in 2015 seemed to indicate that some successful results were beginning to emerge.

The results from Molland Moor seemed relevant to the situation faced on many of Dartmoor's Commons so I chose to use Molland Moor as a case study as it was one of the few examples I was aware of in the southwest where specific hill-farmer interventions appeared to be reducing the abundance of *Molinia* and allowing heather to regenerate. I interviewed the owner of the land, their two tenants and another Exmoor farmer who has knowledge of the site and a role nationally representing hill-farmers. The interviews were recorded and Consent Forms were signed.

The interviews explored the historical context, what management works / changes had been carried out as a result of the project with the Heather Trust, whether the project was considered successful and whether the techniques used at Molland might be replicable on Dartmoor. This small case study features in chapter 6.

3.2.4. Analysis

All the recorded interviews were transcribed and were then manually coded to organise the data into core categories so that the emergent themes could be identified. These themes then became the sub-sections in chapters 4-12.

I considered that the views of the conservationists, archaeologists and hydrologists were representative of each group as a whole as they matched their organisational positions. Where this is not the case in the following chapters, this is specifically highlighted.

With regards to the hill-farmers, they are a much more disparate group and whilst they do agree on some matters they disagree on others. As a result, I have introduced a nomenclature which in the following text is appended to their anonymous identifier.

1 = a majority view has been expressed by this hill-farmer

2 = these views are shared by some hill-farmers and other disagree with them

3 = a minority view has been expressed by this hill-farmer.

An example of how this is set out in the following is as follows.

Well go back 25-30 years, in the days of headage payments, and when we started, everybody probably, most people probably would admit in the pub that they were over stocked, because it made more money like that. And some people did abuse probably their grazing rights a bit and damaged the Commons, just to keep the numbers, but they were paid to do that, they were encouraged to keep more stock by the headage payments, so although I can't condone it I can understand why it happened. (Hill-farmer5-1)

Hill-farmer 5 is expressing a view held by the majority of hill-farmers interviewed during this research – signified by the “-1”

3.4. The use of narrative in the social sciences

Fisher (1984) coined the phrase *Homo narrans* as distinct from *Homo sapiens* and argued for the “narrative paradigm” which he says is a dialectic between two types of rhetoric: the argumentative which was persuasive and the literary which was aesthetic. In doing so he concluded that humans are and always have been story tellers. When given information humans don't immediately process it, instead it is converted into story lines which are then analysed to determine how convincing they are compared to already acquired knowledge (Fisher 1985).

There has been a growing interest since the 1990s in the use of narrative in the human and social sciences and a growing literature on the possible definitions of narrative along with controversies around the analyses of them (Elliot 2005).

Hinchman and Hinchman (1997: xvi) suggest that “Narratives (stories) in the human sciences should be defined provisionally as discourses with a clear sequential order that connects events in a meaningful way for a definite audience and thus offers insights about the world and/or people's experience of it”. In this definition of narratives, there is a chronology highlighting the importance of a temporal dimension

for understanding the inter-relationship between individual lives and social contexts. They are meaningful, bringing out the importance of attempting to understand the meaning of behaviours and experiences from the perspective of the individuals involved. Finally, they are social and embrace the role of the interviewer in constructing not just collecting social information Elliot 2005 p3-4).

Riessman (2008) suggests that narrative has many meanings but is synonymous with “story”. She goes on to suggest that in contemporary usage narrative has come to mean anything “from a few bullet points, little more than a metaphor, a person’s story speaks for itself along with the constant search for new narratives”. She makes the point that story telling is only one form of communication other examples include the uses of chronicles, reports, arguments and Question and Answer sessions i.e. not all talk and texts are narratives. To be a narrative a fundamental criterion is contingency – the consequential linking of ideas and events.

Bold (2012) summarises narratives as comprising three elements: temporality (a sequence of events in time), causation (one event causes another which is inferred by the readers or hearers) and human interest (without this there is no narrative). Additionally, she differentiates between the specific narratives told to the researcher, narratives as data or content narrative and the meta-narrative which is the research story which brings together all the individual specific content narratives.

A common factor amongst those many who use narrative in research is a belief in the importance of subjective meaning and emotion in making sense of social events and settings, together with the need for reflexivity in that sense making (Bold 2012).

The qualitative nature of narrative research requires that the researcher develops the intertwined skills of reflection and reflexivity.

Reflective skills include:-

- reflecting in action while we work (Schön 1984)
- reflecting on action- looking back afterwards (Schön 1984)
- reflecting for action – thinking about the next steps (Bold 2012).

Reflexivity has been described as “a notoriously slippery concept” (Bryman 2016 p388) but in the context of narrative research it can be defined as including a “personal dimension and a thoughtful self-awareness of the dynamic between you and the people you research” (Findlay & Gough 2003).

As mentioned earlier the popularity and acceptability of use of narratives in social research began in the 1990s. Prior to this point much social science research was constrained by a positivistic approach i.e. it was largely a quantitative discipline. However, the evolution of the postmodern thinking enabled a qualitative approach to emerge with its attendant emphasis on reflection and reflexivity and the acknowledgement that there is no single reality, rather it is created by individuals and groups – it is a social construction.

Sikes and Gale (2006) concluded that *“there has been a narrative “turn” within the social sciences that is associated with postmodernism, thus opening up the possibilities to research social contexts by using a most appropriate and purposeful communication – the narrative”*.

Narrative research can take many forms, but commonly researchers explicitly encourage those who they are researching to tell their stories. There are numerous examples of this from the fields of education, psychology, medicine, anthropology and sociology (Elliot 2005, Riessman 2008 & Bold 2012). Narrative analysis also involves a specific type of qualitative data analysis as it aims to uncover how the narrators have made sense of what has happened to them in their stories opposed to uncovering a timeline of what has happened. It therefore differs in the approaches which adopt coding such as grounded theory or thematic analysis. Narrative analysts avoid the use of coding as this methodology tends to categorise blocks of text and as a result the social context can be lost. In addition, the inevitable fragmentation of the data runs counter to the understanding of meaning in a flowing narrative (Bryman 2016 pp570-584).

3.5. Introducing Policy Narratives

3.5.1. Introduction

However not all narrative research is about individuals' stories and their meanings there is a growing literature around policy narratives and their analysis. As this chapter has demonstrated stories are and always have been important to individuals. If narratives are important to individuals they must also play an important role for groups of individuals who are interested in the development and implementation of public policy particularly around issues which are complex and contested (Jones et al 2014). Stories are routinely told when policy issues are being described, debated,

lobbied for or against and as such they play an important and often pivotal role in the adoption or modification of public policy (Roe 1994).

Prior to the early 1990s policy analysis was dominated by quantitative methodologies where hypotheses were tested rigorously, one of the most popular and widely used was and is the “Advocacy Coalition Framework” (Jenkin-Smith et al 2014). This approach rejects the use of narrative in analysis as it is unquantifiable.

However, around the mid 1980s a number of academics began questioning the reliance of these positivistic approaches arguing that the political nature of policy development meant that analysts were regularly involved in the social construction of reality. Far from there being a single reality there was the possibility of multiple realities which needed to be interpreted.

Kaplan (1986) was the first academic to argue that narrative in some cases should be used in the “resolution of policy dilemmas”. Stone (1988) said that “you can’t take the politics out of analysis” and argued that language, interpretation and framing used by the actors involved in a political problem directly influenced the subsequent options and actions (Stone 1989). Fisher and Forester (1993) state that “policy analysis and planning are practical processes of argumentation”. Argumentation has two elements: analysis (what is being argued) and articulation (how the communicator engages the audience). These academics are arguing that narratives play a role in shaping public policy and are therefore worthy of study.

3.5.2 Narrative Policy Analysis

Roe (1994) developed Narrative Policy Analysis which he suggested was a good way of studying policy issues where there was a high degree of uncertainty, complexity and polarisation. For Roe uncertainty includes risk and ignorance, all three of which hinder the analyst’s understanding of what matters. Complexity involves the issue’s intricacy and how it relates to other policy issues. Polarisation maps the position of the various competing groups around the extremes of the issue. Uncertainty, complexity and polarisation are also often inter-related. For example complexity and polarisation cause uncertainty whilst strategies to reduce uncertainty or polarisation increase complexity.

Roe argues that “stories [which he calls narratives] commonly used in describing and analysing policy issues are a force in themselves and must be considered explicitly in assessing policy options”.

Roe proposed a four-stage approach to carry out a Narrative Policy Analysis.

1. The researcher identifies and sets out the dominant policy narrative which is both complex and where the policy outcome is uncertain. Stories have beginnings, middles and ends whilst arguments have propositions and conclusions.
2. The identification of other narratives that run counter to the dominant narrative. These are called non-stories if they do not conform to the definition of a story (i.e. they are critiques) or counter-stories if they have a “beginning, middle and end”.
3. The narratives, counter-narratives and non-stories identified in steps 1 and 2 are then compared so that a meta-narrative can be generated.
4. The meta-narrative is then analysed to determine if it recasts the issues in any way to see if it makes them more amenable to decision making or policy making.

Roe’s book includes a number of case studies using policy narratives analysis - the California Medfly controversy, conflict around global warming and controversies around Native American Burial Grounds. He also includes an example of policy narratives as it relates to the “Tragedy of the Commons” (1994 p37). There has not been a wide use of Narrative Policy Analysis other than by Roe but Hampton (2009) who used it as a mechanism to involve the public in policy development for water treatment in Australia.

In the policy field the work of Stone, Fisher & Forester and Roe has been termed post-positive as it is interpretive in nature and rejects the scientific methods of hypothesis testing and replication. As a result, it has been rejected by mainstream policy academics creating a divide between the positivists and post-positivists. Sabatier (1999) excluded any mention of social construction and narrative from his standard text on Theories of the Policy Process. When challenged on this by Radaelli (2000) he replied that he wouldn’t support an approach to public policy that could not be clear enough to be wrong (Sabatier 2000 p137).

3.5.3. The Narrative Policy Framework

In order to devise a positivistic approach to narrative analysis, the Narrative Policy Framework (NPF) has been developed (Jones and McBeth 2010). The NPF attempts to apply a positivistic i.e. science-based epistemology to an ontology which is a socially constructed reality (Jones et al 2014 p4).

The NPF defines narrative structure as containing

i) Setting or context

A policy narrative addresses a specific policy issue which must be contextualised. Specific contexts might include geographical area, taken for granted facts and legal parameters.

ii) Characters

Policy narratives have distinct characters including heroes (solution finders), victims (those who have been harmed) and villains (those who are causing the problem) after Stone (2002).

iii) Plot

The beginning, middle and end of the story

iv) The moral of the story

In a policy narrative, the moral is the policy solution

They propose that the Narrative Policy Framework should operate at three levels of analysis:

1. The micro which acts the individual level
2. The meso which covers group / coalition elements of policy narrative
3. The macro which covers cultural and institutional narratives

Table 11 summarises the three levels of analysis in the NPF.

Developing a quantitative, positivistic approach to narrative analysis enabled the NPF to propose hypotheses which can then be tested. The hypotheses at the micro level are set out in table 12 and those at the meso level in table 13. To date no hypotheses have been presented for the macro level.

	Micro	Meso	Macro
Core NPF variables	Policy narrative Setting Characters Plot Moral	Policy narrative Setting Characters Plot Moral	Policy narrative Setting Characters Plot Moral
Imported theories	Belief systems Canonicity and breach (In) congruence Narrative transportation Narrator trust	Belief systems Devil / Angel Shift Heresthetics Policy learning Public opinion Scope of conflict	Unspecified
Known applicable methods	Experiment, interviews, focus groups, cluster analysis	Content analysis, Network analysis, Rational choice	Historical analysis
Potential data	Surveys, transcripts	Written texts, speech videos	Archives, secondary sources, original artefacts

From Jones et al (2014 p10)

Hypothesis	Brief description of theory	Hypothesis wording
H1 Breach	Status quo stories are not very memorable. Stories that do violence to the norm, breach banality and rend expectations are the stories that persuade	As a narrative's level of breach increases, the more likely an individual exposed to that narrative is to be persuaded.
H2 Narrative transportation	Narrative transportation is the process by which a reader disengages in the world around them and becomes immersed in a story	As narrative transportation increases, the more likely an individual exposed to that narrative is to be persuaded.
H3 Congruence & Incongruence	Individuals are more receptive to policy narratives that they recognise as similar to their own understandings of the world	As perception of congruence increases, the more likely an individual is to be persuaded by the narrative.
H4 Narrator Trust	Individuals are more receptive of policy stories that come from sources they trust	As narrator trust increases, the more likely an individual is to be persuaded by the narrative.
H5 The Power of Characters	Characters are central to policy narratives. Emotional responses, sympathy for, aversion to are likely to play an important role in the persuasiveness of a policy narrative	The portrayal of policy narrative characters (heroes, victims & villains) has higher levels of influence on the opinions and preferences of people than scientific or technical information

From Jones et al (2014 p14)

Table 13 Meso-level NPF hypotheses			
Category	Hypothesis	Brief description of theory	Hypothesis wording
Narrative Strategy	H1 & H2 Scope of conflict	Political actors will expand or contract the scope of conflict to control other actor involvement to favour their position (Schattschneider 1960)	Groups or individuals who are portraying themselves as losing on a policy issue will use narrative elements to expand the policy issue to increase the size of their coalition. Groups or individuals who are portraying themselves as winning on a policy issue will use narrative elements to contain the policy issue to maintain the coalitional status quo.
Narrative Strategy	H3 Heresthetics	Political actors will use communication strategies to structure coalitions in such a way that they win (Riker 1983)	Groups will heresthetically employ policy narratives to manipulate the composition of political coalitions for their strategic benefit.
Narrative Strategy	H4 The Devil Shift	Political actors will “exaggerate the malicious motives, behaviours & influence of opponents (Sabatier et al 1987)	Higher incidence of the devil shift in policy subsystems is associated with policy intractability
Policy Beliefs	H5 Coalition glue	The quality of the bonds that tie advocacy coalitions together matters. Coalitions with stronger bonds are less likely to be distracted by internal disagreements, more able to co-ordinate activities and secure resources.	Advocacy coalitions with policy narratives that contain higher levels of coalition glue will more likely influence policy outcomes
Policy Learning	H6 Policy Narrative Persuasion	Reconfiguring policy narrative elements can alter the policy landscape independent of new information or events	Variation in policy narrative elements helps explain policy learning, policy change and policy outcome
Public Opinion	H7 Exogenous Public Opinion	Public opinion works potentially as both a resource and constraint on policy subsystem actors. When public opinion is in favour of a group they will attempt to use that opinion to their advantage	When exogenous public opinion is congruent with a coalition’s preferred policy outcome, coalitions will offer policy narratives that seek to contain the subsystem coalition (by maintaining the status quo membership of the coalition
Public Opinion	H8 Endogenous Public Opinion ?		When endogenous public opinion shocks are incongruent with a coalition’s preferred policy outcome, coalition will offer narratives that seek to expand the subsystem coalition
Coalition Membership	H9 Media	Media are important players in policy subsystems that have been neglected in the study of public policy	The media can be a contributor to advocacy coalitions

From Jones et al (2014 p17-18)

The NPF is a new and developing methodology for studying policy narratives. Its roots can be traced back to McBeth & Shanahan (2004), McBeth et al (2005) and McBeth et al (2007) where the theoretical development of the NPF was worked up using case studies from the Yellowstone National Park. Pierce et al (2014) list 19 peer reviewed publications which had used the NPF in their analysis. 15 of the 19 of these papers were co-written by either McBeth, Shanahan or Jones. The past uses of the NPF have focused almost exclusively on environmental and energy issues. Examples include Yellowstone National Park conflicts (McBeth et al 2010), climate change (Jones 2013, 2014), hydraulic fracking (Heikkila et al 2014), recycling policy (Lybecker et al 2012) and wind turbine controversies (Shanahan et al 2013). Radaelli et al (2013) used the NPF to study the narratives around decision making frameworks within the EU. More recently O'Bryan et al (2014) used the NPF to look at the rise of the "Arab Spring" and Lawton & Rudd (2014) used the NPF to study the narratives around ecosystem services in the U.K.

O'Bryan et al (2014 p111) commenting on the NPF's social ontology and an objective epistemology state that "*the core of the NPF is not whether the approach to evidence is qualitative or quantitative, but rather whether one believes that inferences from evidence should be drawn on the basis of objective standards like validity and reliability. Our chapter examines evidence qualitatively rather than using statistical analysis – and as such illustrates this important point.*" Lawton and Rudd (2014) also use a qualitative methodology to explore the narratives around ecosystem services in the UK.

Whilst there is now a chapter in Theories of the Policy Process (Sabatier & Weible 2014) on the NPF (McBeth et al 2014) there is still bitter argument between the advocates of the NPF and postpositivists. Jones & Radaelli (2015) again make the case for the acceptance of the NPF and how it can work alongside interpretivism with each gaining from the others' insights. However Miller (2015), Lejano (2015) and Dodge (2015) will not countenance the NPF's "mishmash" of ontology and epistemology and reject the NPF as a mechanism for studying narratives. It is unlikely that the argument between "fact and figures" and "ideas and meaning" (Schubert 2015) will ever be academically resolved, but the fact remains that narrative is important in policy and it needs to be studied and interpreted. At the moment the NPF is a developing methodology for doing this and despite its critics

and its relative infancy it offers a robust framework for trying to make sense of assist complex policy conflicts.

3.5.4. Making use of the micro- and meso-level hypotheses on Dartmoor

Tables 12 and 13 set out 14 different hypotheses which Jones et al (2014) suggest can be tested as part of Narrative Policy Framework analysis. This section sets out the relevance of this approach to the Dartmoor Commons context. On a practical level analysing such a large number of hypotheses is unwieldy, and therefore I discuss how and why specific hypotheses were selected for further study and why others were not.

The NPF hypotheses explore how individuals construct narratives, how they relate to their world views, how trust is established, the role that characters play in the narratives, the political nature of winning arguments, how coalitions are formed and how narratives are evolved depending on changing circumstances. The various stakeholder narratives centred around the Dartmoor Commons depict a series of competing positions over the past 30 years and many aspects chime with a number of the NPF hypotheses.

The primary purpose of this research was to explore the attitudes of the various stakeholder groups to the competing narratives and as such was not designed to specifically test the NPF hypotheses. The semi-structured interviews therefore did not cover some of the ideas contained within specific hypotheses.

Within the micro-level hypotheses, my lines of questioning do not address H1 (Breach) and H2 (Narrative transportation) as I was interested in identifying the detail within the attitudes to the narratives rather than exploring how they might have been constructed to be more effective or compelling to others. With regards to H3 (Congruence and Incongruence), I felt that this hypothesis was worth exploring further and it might explain how the specific stakeholder groups held such similar views. H4 (Narrator Trust) is relevant to this research but my interview questions and their associated responses did not explore this aspect in detail. H5 (The Power of Characters) was selected as I had a great deal of rich data which I could use to explore these ideas.

With the meso-level hypotheses I rejected the use of H1 & H2 (Scope of Conflict) and H3 (Heresthetics) as my interview responses did not cover these topics. With

regard to H4 (The Devil Shift), this was selected as a number of examples of this behaviour were apparent from the interviews. H5 (Coalition Glue) and H6 (Policy Narrative Persuasion) are relevant to my research but were not analysed because although elements of both hypotheses (e.g. coalitions and reconfiguration of narratives) were discussed by interviewees, ultimately policy changes and outcomes faltered (this is discussed in section 7.2.). H7 (Exogenous Public Opinion) and H8 (Endogenous Public Opinion) were not studied further as I did not collect any data on public opinion, I only interviewed the specific stakeholder groups. H9 (Media) was not included as I did not study the role the media played in the conflicts on the Commons of Dartmoor.

I accept that the selection of the three NPF hypotheses has been a subjective decision, but I argue in sections 11.3., 11.4. and 11.5. that the analysis of these three hypotheses has made a contribution to understanding the conflicts and does suggest lessons that can be learnt in the future.

3.6. Concluding remarks

The remainder of this thesis sets out my research findings and conclusions. Chapter 4 describes the issues and events of the headage days; chapter 5 discusses the introduction of the agri-environmental schemes and their agricultural consequences; chapter 6 looks at the issues around the rise in dominance of *Molinia*; chapter 7 describes the efforts that have been made to find a consensus along with issues of bad farming practices; chapter 8 discusses the tensions around re-wetting the mires and conserving the historic landscape; chapter 9 looks at developments around re-wilding; chapter 10 discusses how the calls for the reduction in meat consumption and climate issues have become a threat to pastoral agriculture; chapter 11 pulls together all the competing narratives and discusses the effectiveness of a narrative approach to this research and chapter 12 contains my conclusions.

4. The Era of Headage Payments: 1973- 1994. The over-grazing narrative emerges

4.1. Introduction

There had been isolated instances of controversy regarding hill-farming and the environment on Dartmoor post 1945, such as during the extreme winter of 1962-63 when much of Dartmoor was cut off by deep drifts of snow and low temperatures for 3 months which led to an animal welfare crisis where the military were brought in by government to airlift winter fodder to trapped and stricken stock. There were accusations that the Commons were overstocked but officially these accusations were rebutted and the whole incident was blamed on the inclement weather conditions. (Kelly 2016; Bowen & Martin 2016). Despite the events of the winter of 1962/63, the dominant policy narrative was that the conservation of Dartmoor's environment was compatible with an intensification of agriculture. The hill-farmers' narrative was one dominated by an entrepreneurial spirit unburdened by bureaucratic interventions.

However, by the 1980s and 1990s the situation on Dartmoor began to change, stemming from the two irreconcilable Acts of Parliament: the 1947 Agriculture Act and the 1949 National Parks and Access to the Countryside Act. The 1947 Act saw the beginning of a new era of productivity and intensification underpinned by guaranteed farm prices, agricultural improvement grants, increased agricultural research and advice for farmers. The 1949 Act provided the legislative framework which would see the gradual creation of National Parks in England and Wales, the designation of the Sites of Special Scientific Interest (SSSI) network along with greater freedoms with regards to accessing the countryside, but it failed to provide adequate protection for wildlife and habitats against the backdrop of agricultural intensification (Winter 1996). The post-war narrative of compatibility between farming and the environment was over.

The key policy driver for agricultural intensification on Dartmoor's Commons was "headage payments", whereby hill-farmers were paid subsidy per animal grazed on the Commons which encouraged increased stocking levels. Headage payments commenced in the UK in 1973 following our admission to the EU and continued up until 2006 when they were replaced by "area payments" i.e. the land occupied by farmers opposed to the number of animals pastured (Hodge 2016). Confusingly, the

phrase “the era of headage payments” is used by conservationists and farmers to describe the time when these subsidies were of paramount importance and refer on Dartmoor from the time when they were introduced (1973) up to the time when the first agri-environment schemes were brought in (1994).

The following two sources show the dramatic impact that headage payments had on Dartmoor’s Commons. Smallshire et al (1996) state that in 1952, there were there were 2,000 cattle and 44,000 sheep on Dartmoor’s Commons and by 1994 this had risen to 20,000 cattle and 132,000 sheep. Similarly, Mercer (2009) provides data for Dartmoor’s Commons - in 1950 there were 13,000 ewes, this rose to 40,000 ewes by 1960 which equated to 130,000 sheep in 1996. In 1950, there were 2000 cattle on the Commons and this had increased to 20,000 by 1996. In broad terms this amounts to a five-fold increase in sheep and a ten-fold increase in cattle on the Commons between 1950 and 1996.

For thousands of years sward burning, known on Dartmoor as swaling, has been a routine management practice in the uplands to remove old vegetation (grasses and shrubs), encourage the growth of new nutritious vegetation and allow larger numbers of stock to be pastured than would be possible in its absence (Newton 2017 & 2020 & Greeves 2006). The era of headage payments saw more intensive swaling which was traditionally carried out on the areas of dry heath and mires but not on the blanket bogs. However, during the 1960s up to the mid 1990s large areas of blanket bog were also burnt on Dartmoor which combined with the increased grazing pressure detrimentally altered their vegetational composition (Mercer 2009).

A survey of heather condition on the moorlands of England and Wales reported that in England around 24% of upland heather stands were damaged whilst in the south west over 40% had been damaged by over-grazing (Bardgett et al 1995). EN produced a report and set of maps for the Commons of Dartmoor showing the vegetation and heather condition based on survey work carried out in 1989/90. 22,450ha of the Commons supported some heather cover and half of this, 11,240ha was showing some sign of over-grazing damage. Of the damaged areas 57% was impacted at least to some extent by cattle and exacerbated by too frequent burning (Wolton et al 1994).

In 1986, as a result of concerns over the intensification of agriculture and its impacts

on the environment, the UK Government introduced an Agriculture Act which required MAFF to balance efficient food production with socio-economic and environmental considerations. This Act paved the way for the introduction of the ESA payment scheme which was piloted in 1987. This scheme enabled farmers to be funded to reduce stocking levels in order to benefit the environment. An ESA scheme was introduced to Dartmoor in 1994 (Winter 1996).

In addition, EN set up its Wildlife Enhancement Scheme (WES) funding instrument which was launched in 1991 and by 2003 this had been developed into the Sheep WES which could also be used in addition to the ESA schemes to reduce stocking levels on Dartmoor (and elsewhere).

The remainder of this chapter draws upon the interviews carried out and looks at the various stakeholder attitudes to the “era of headage payments” when the over-grazing counter narrative emerged as a challenge to the post-war compatibility of farming and the environment narrative. In particular this chapter looks at the views of hill-farmers to the accusations of over-grazing and unsustainable burning practices, it discusses the impact of headage payments on lears, it looks at the drivers of the problems caused and discusses issues around the prevalent farming system during that period. The views of the conservationists, hydrologists and archaeologists are also discussed. Finally, all the stakeholders’ attitudes are presented and discussed with regards to EN’s introduction of the ESA to Dartmoor in 1994, in particular reaction to some of the broad changes required in farming practices with the conflict generated from the allocation of the new agri-environmental schemes monies.

4.2. Hill-farmers’ views on the impact of the headage days on the moor

This section looks at the attitudes of hill-farmers during the era of headage.

4.2.1. Over-grazing

Of the 27 Dartmoor hill-farmers interviewed for this research, 26 were old enough to recall the farming situation as they saw it prior to the introduction of the first ESAs in 1994.

Whilst the issue of over-grazing and unsustainable burning has been very contentious over the years on Dartmoor (Mercer 2009, NE 2013, Greeves 2015, Kelly 2016), it was somewhat surprising and unexpected that all hill-farmers interviewed acknowledged that during the headage era there were issues and

sometimes considerable problems. I say surprising and unexpected because from my own personal experience of working on Dartmoor since 2004, I have seen the furious reaction of hill-farmers when an accusation of over-grazing is levelled at them.

With regard to the quotes that follow from the hill-farmers interviewed, I have categorised each one to give an indication of how representative the views given are to the group of hill-farmers as a whole. The number following the hill-farmer identifier indicates this as follows.

1 = Majority view

2 = Mixed view: many hill-farmers agree but many do not.

3 = Minority view

On occasion where appropriate I also include a footnote to clarify further. In the quote which follows (Hill-farmer1-1) indicates that this is a view held by the majority of hill-farmers interviewed based on an analysis of their transcripts.

Here is a typical example of a hill-farmer's view pre-1994.

When were on headage payments it did get to the point where we were over-grazing, there is no doubt about it, it wasn't because we were bad farmers it was because we were following policy. And it became stock or be stocked so you either stocked up to keep the other people's animals out or you got swallowed up and your lear was totally trashed, so you were losing your ability to graze your area. (Hill-farmer1-1)

Three important points emerge from these comments, which I consider to be representative of the majority of those interviewed:-

a) there is a general admission that as time passed animal numbers increased to the point where there was an obvious detrimental impact to the environment which was apparent to hill-farmers

b) that the increase in animal numbers was driven by government policy

c) those hill-farmers who didn't respond to the headage policy would find that their areas of the Common i.e. their lears would be partially or totally taken over by neighbouring commoners. It is important to note that the lears of individual hill-farmers are not marked on maps and their geographic location is not set or fixed. They are created and maintained solely by their occupancy by stock and their

shepherding. Adjacent commoners are constantly trying to increase their lears at the expense of others, it is therefore by its nature a semi-competitive process which often leads to disputes and conflict. This is an important issue which I will return to in 4.2.2.

Here another hill-farmer has clear memories of the damage that was being done on the moor.

What was happening to Dartmoor pre-ESA was some commoners were absolutely trashing the place the people who were feeding cattle out in the winter in big numbers, the damage they were doing was enormous.

*up the back of **** Tor which I can remember gathering sheep when I would have been 14 or 15, it was this high in heather and now there's hardly anything there.*

So, you had people who were pure headage payment sheep farmers who just piled hundreds and hundreds of sheep out, didn't care where they went. and again on the Home Commons they did tremendous damage. (Hill-farmer7-2³⁸)

It is clear that some hill-farmers were taking advantage of the headage system to maximise their income and as a result, habitats on the Commons were being damaged by animals congregating in a single place for winter feeding, by the sheer numbers of stock grazing and pulling up heather plants to the extent that in some areas it almost disappeared. There is also a suggestion in the final quote above that some of the sheep out on the Commons were not leared to a set area but moved randomly from place to place.

Over half of the farmers interviewed admitted that during the headage era they were regularly wintering and feeding 100 cows on Commons and in one case a hill-farmer admitted feeding a herd of 300 cattle.

This quote perhaps captures the pervading sentiment.

Well go back 25-30 years, in the days of headage payments, and when we started, everybody probably, most people probably would admit in the pub that they were over stocked, because it made more money like that. And some people did abuse probably their grazing rights a bit and damaged the Commons, just to keep the numbers, but they were paid to do that, they were encouraged to keep more stock by the headage payments, so although I can't condone it I can understand why it happened. (Hill-farmer5-1)

³⁸ This is not a majority view as some of those interviewed were responsible for the outcomes described.

4.2.2. Fighting for lears

Another consequence of the headage payments was a significant rise in competition between commoners on the same Common. If you could increase your stock numbers you would receive more income. I was told of numerous instances of bullying and intimidation where hill-farmers were driven off their lears by others. This is a process which apparently started during the era of headage payments but continues up to the present time. The following quote evidences this process.

Your issue is that you've got a few that dominated it when the payments were on a headage basis, and basically they drove everyone else off that area (Hill-farmer25-3³⁹)

This is a dark side to the hill-farmers narrative and those who have discussed it suggest that greed is the main driver. In order to survive you have to be more robust than your neighbour, this following quote from a hill-farmers refers to a recent case of bullying but indicates the personal qualities of stamina required to overcome it.

*We have tried to take land, we have taken a farm up near ***** and the farmer next door has actively dogged our sheep off, let them back in our fields to try and stop us establishing a lear of sheep on that Common, so it still goes on. It's been quite a battle but we won't be beaten ... but it always depends out how much you can stick really (Hill-farmer21-2)*

There are obviously personal consequences for individuals who have been forced off a Common and now only farm their in-bye and newtakes but there are also consequences for the Commons overall. A reducing number of hill-farmers means it becomes progressively more difficult to carry out the tasks such as swaling and gathering stock which require collective and not individual action.

4.2.3. Swaling

It is clear from the interviews that during the 1980s and up to the mid 1990s swaling was carried out extensively across Dartmoor by the majority of hill-farmers to manage gorse and produce fresh flushes of palatable grasses. Compared with what is permitted today under the agri-environmental schemes the size of the areas swaled were much larger in the past.

we did used to burn a bigger area but it meant that your animals ate on that area, while another area was recovering (Hill-farmer1-1)

³⁹ This is a minority view as this farmer was one of the small number interviewed who was driven off the Common. The majority of hill-farmers interviewed still maintained animals on their Commons.

In this account the hill-farmer is referring to burning entire hillsides in an area of dry heath to manage Western Gorse (*Ulex gallii*), today burns are restricted to 2 ha.

they've restricted us in the burning and swaling, instead of taking off hills like we used to, taking one off and then moving on another year, they've restricted us (Hill-farmer10-1)

This hill-farmer is reflecting how swaling has changed since the headage days and is noting that now there is a lot more vegetation on the moor, particularly in this case *Molinia* which is a big fire risk in itself which is deterring Commoners today from swaling for fear of igniting uncontrollable extensive fires.

fire is almost a dirty word for the last 20 years and it needs to be brought back in now as a management tool. We've all been frightened to use it whereas the old men in the past would have used it more regularly, but it's got to a stage now we are almost too frightened to light that match because of how much could go. (Hill-farmer14-1)

The consequences of the changes in swaling practices referred to above will be discussed in more detail in section 5.4.

4.3. The drivers of the headage payment problems

During the interviews hill-farmers identified four main reasons that the environment was damaged during the headage era which the majority of those interviewed would agree with.

4.3.1. Headage payments led to more animals on the Commons

With sheep numbers increasing five-fold and cattle numbers ten-fold between 1950 and 1996 (Mercer 2009) it was inevitable that there would be increased pressure in certain places, especially those close to the moorland / in-bye gates (often referred to simply as moor gates), if stock was not pushed out to their lears.

it was just too much stock and a lot of these farms back then, didn't have sheep out in the winter but they'd turn all their inland sheep out in the summer for 2-3 months, and of course they weren't leared so they'd just go outside the walls and go perhaps 700, 800 yards out but come back to the walls and they used to just graze it into the ground. And yes, there was severe over-grazing in places and it would only be a fool that wouldn't admit it. (Hill-farmer27-2⁴⁰)

⁴⁰ A mixed view as some of the others interviewed would probably have been indulging in the practices described

The increased numbers of stock being pastured on the Commons did lead to environmental damage, a situation acknowledged by many of Dartmoor's hill-farmers.

4.3.2. Increasing numbers and winter feeding

Although breeds such as Galloway cattle were hardy enough to overwinter on the Commons of Dartmoor they did need supplementary feed as the moorland vegetation on its own was not sufficient or nutritious enough. As a result, feed (either hay, silage or cobs) would need to be transported every few days up onto the Commons where the animals were leared.

Then they started paying headage payment. That's where it all went wrong. You got these massive herds of Galloways out there going out there [sic] and to feed a massive herd of Galloways they want a big trailer load of stuff, then they want a bloody tractor and half in front to pull it. Then they get up on the peat, then they feed it, then you'd have a wet time and think oh bloody hell go down here, well we've been down here before. Peat's alright if you go over it once but once you go over it twice you're making a mess. But they weren't worried because they was getting the money. And that's where it all went wrong. (Hill-farmer27-3⁴¹)

At the height of the headage days there were some hill-farmers feeding up to 300 cattle in one place which led to extensive localised damage around the feeding areas.

there were a few herds on Dartmoor that were too many, feeding them not in what I call a traditional way, they were just, some were using silage and some were using cobs with nothing else and that munched up the grazing. (Hill-farmer8-2)

The majority of hill-farmers using silage fed their animals from specific locations whilst those using cobs scattered them over a much wider area.

I actually think the people who were feeding silage were doing less overall damage than the ones feeding cobs. Because when they were feeding silage, yes, they absolutely trashed the place they were feeding but the impact on the rest of it wasn't so bad, but the people who were feeding cobs their cattle just roamed, pulling up all the roughage they could get and just decimated heather. (Hill-farmer7-2)

Winter feeding of cattle did not inevitably lead to environmental degradation, but this relied on the expertise and knowledge of the hill-farmer. In this example, both

⁴¹ A minority view, as this farmer is predominantly a sheep farmer and not a cattle farmer.

EN (Wolton et al 1994) and another hill-farmer from the Common described, both acknowledged that damage was now occurring.

obviously people fed their animals in different ways, some were better than others. But the way the **** family were feeding, moving the feed around, on bits of old grass, the cattle didn't know where to be waiting but they trampled all the bits of gorse, the old grass, while they ate. Very, very good system. (Hill-farmer11-3)

4.3.3. The use of less hardy and bigger breeds of cattle

In some cases, the hardy Galloway cattle were replaced by larger and faster growing animals. Such animals were not leared to the Common and stayed in the area where they were fed. Such practices also raised concerns around the welfare of the animals in question.

One commoner bought a herd of cows from somebody else and those cows were traditionally housed in the winter and he left them out in the winter feeding cobs, within about 4 years the heather was gone (Hill-farmer7-2)

there were farms around the moor that, yes, they had the common rights but they weren't traditional livestock that are leared, the calves of the Scotch bred cows were sold off and these cows were just turned out on the moor, outside the moor gate and that's all they knew, and areas right around Dartmoor got overgrazed because the animals were by the moor gate and didn't go off on the centre of the moor, some of them got fed and then they just messed up Dartmoor really. (Hill-farmer8-2)

These quotes suggest that some hill-farmers dropped some of the traditional practices of upland farming in order to benefit from the additional headage payments and as a result the vegetation on some Commons was damaged.

4.3.4. The Commons were used as a “dumping ground” for stock.

A small number of hill-farmers reported that some Commoners used the headage payment system to increase their payments by maximising their stock and exploiting the grazing on the Commons whether there was enough available or not and then left the animals without adequate shepherding.

some of the farmers were using the Commons, a little bit in the latter years, as a bit of a dumping ground. (Hill-farmer22-3)

Such practices maximised incomes without taking account of animal welfare or environmental consequences.

4.4. The farming system on the Commons during the headage days

All 26 Dartmoor hill-farmer interviewees described a farming system dominated by all-year round grazing of sheep, particularly Scotch Blackfaces and Galloway cattle. This system was described, especially by those who still deploy it (16 of the 27) as “traditional hill-farming” and they regularly referred to themselves as “traditional hill-farmers”.

This is an interesting phrase, as prior to 1880 breeds such as Red Devon cattle along with Whiteface and Greyface Dartmoor sheep had summer grazed the moors since early Medieval times – breeds which although they were well adapted to the Dartmoor climate needed to be wintered off the high moor – it was the era of transhumance (Fox 2012).

Very gradually these historic traditional breeds began to be replaced by Scotch Blackface sheep and Scottish Galloway cattle, more hardy breeds which were thus able to survive on the moor all year round. Initially this change was slow paced but by the 1970s all year-round grazing had become the predominant method of grazing the Commons. Mercer (2009 p302-3) describes this as

“the most important changes in moorland grazing since medieval times”.

He goes on to say

“The dramatic significance of these introductions is that they rang the death knell of the centuries’ old summer grazing routine on the Commons and the Forest..... letting grazing-with-care up here from the farmers from the South Hams and mid-Devon from May to September would become untenable quite soon as available grazing was reduced by winter consumption and the old principle of levancy and couchancy – not being able to graze on the common more than you could winter on your own in-bye was blown.”

It is therefore necessary to re-define “tradition”. The Mediaeval practices of summer grazing cattle and sheep and then removing them to lower ground for the winter should be called the “historic tradition”, whereas the use of hardy cattle and sheep which could graze all-year round should be called the “modern tradition”. There is an interesting and subtle rivalry between the (modern) traditional Dartmoor hill-farmers and those Dartmoor hill-farmers who keep South Devons or other summer grazing cattle – the traditional hill-farmers albeit with the additional of all-year round sheep grazing with Scotch Blackfaces – a historic / modern tradition.

The rise in popularity of the Galloway cattle and Scotch Blackfaced sheep was linked by a number of hill-farmers interviewed (particularly those who no longer keep Galloways) to the system of headage payments. As the animals could be overwintered on the Commons there was no need for cattle sheds and expensive indoor feeding regimes. These quotes are from Dartmoor hill-farmers who no longer keep Galloway cattle, having switched back to summer grazing South Devons.

there was a huge herd on *** Common, the thing was, that herd did live there all year round. That herd was fed up there and it was of Galloway cows that didn't produce....sweet nothing really. But they were there and they collected the subsidy cheque. (Hill-farmer13-2)

The opportunity existed for some commoners to over winter cattle mainly on common land. Wasn't really best practice for the biodiversity and the health really of common land, and I guess the driver to do that probably was the headage payments that were linked to those animals. (Hill-farmer18-2)

Galloways have only been out on Dartmoor for the headage payments, that's the only reason they are out there, I don't think anyone was really benefitting from that system other than that farmer picking up that cheque (Hill-farmer23-2)

They adapted a system to meet the headage payment subsidy system and that's what's got ingrained, now that is tradition. But it's not ... it's emotive, it's easy. People back off when you say you are trying to break tradition. So therefore, and because they have been doing it for 30 or 40 years that's now a tradition in their own mind, it's not what their ancestors used to do. (Hill-farmer25)

The modern / historic traditionalists are working with various breeds of summer grazing cattle which are larger and more commercial than Galloway cattle. Whereas the modern traditionalists rely more heavily on subsidies and the fact that their Galloways are pedigree rare breeds which attract additional payments and compensation (e.g. the Native Breeds at Risk payments in the Higher Level Stewardship Scheme).

..... if you have traditional native breeds [i.e. Galloways] you can sell those, and pedigree native animals in terms of payments for TB compensation are considerably higher than for commercial animals, so if you have got a pedigree animal you can then say it's all wonderful. (Hill farmer028-2)

This divide amongst Dartmoor's cattle farmers was an unexpected finding, prior to conducting the interviews I had developed a number of perceptions around the Dartmoor Commons. I had constructed the following perception of Dartmoor hill-farming.

Over thousands of years the hill-farmers of Dartmoor have created the landscape we know today. They are farmers first and foremost who want to primarily produce quality lambs and cattle. They are the guardians of the moor but are not park rangers. Today their traditions are threatened by increasing government interference, unsustainable farm incomes, Brexit, their age and the difficulty of encouraging new entrants to hill-farming.

It paints perhaps a romantic notion of hill-farming but one where principal actors are a rather homogenous group. The tensions around tradition and other hill-farmers on the moor today, the constant battle required to maintain leas along with accusations of bullying of some Commoners by others shows that the hill-farmers narrative is considerably more nuanced than I had imagined despite having worked on the moor for over a decade. The public face of the Dartmoor hill-farmer is more homogenous whilst under the surface it is much more complex.

4.5. Conservationists' views on the impact of headage payments on the moor

Ten conservationists (9 professional conservationists and one amateur naturalist / conservationist) were interviewed who either worked on or were involved with Dartmoor's Commons prior to 1994 i.e. during the headage payment era.

From these accounts it is clear that the practices which eventually led to over-grazing and the damaging of habitats gradually built up over time. One interviewee who lived on the moor during World War 2 recounted that during that period he would see only 10-12 cattle and that they were rather wild and would run off if you got within 200 yards of them. He contrasted that with the situation that had developed by the 1990s where a few Commoners had very large numbers of animals.

I suppose we weren't so aware after WW2 of what was going on ... until it got to fairly extreme stages and eventually developed into the middle 90s. Looking back on it one can see that winter grazing and the sheer number of stock out were becoming quite noticeable, we were aware of that. And I think it's the grazing in winter that has been the most significant aspect of all now. They had 2 galvanised rings there and of course that was absolutely disastrous for that areas' heather because of trampling and hard grazing. (Cons17)

A professional conservationist stated that in the mid 1970s the Commons were "very hard bitten" and there were a lot of stock out all year round. However, it was when the practice of winter feeding of non-hardy cattle commenced that he had real concerns compared to the issue of over-grazing per se.

I think we became more concerned when the damage started coming from winter feeding rather than prior to that worrying about over grazing, we weren't looking to interfere with grazing practice in the early days (Cons9)

By the 1990s the damage to Commons was apparent to conservationists across the moor. These quotes typify the conservationists' viewpoint and they are given by representatives from two different statutory bodies working on the moor at the time.

I'll be honest with you I was actually quite shocked. We went to two commons, x and y, and there were significant areas on those commons that were bare ground, no vegetation on them whatsoever, and I was astonished and I'd never seen anything like it. (Cons2)

I did quite a lot of survey work on winter feeding damage and it was really bad in some places, farmers, some farmers used the moor as a stock yard really, just a dumping ground, they'd leave their animals out all winter in not very good conditions, very thick mud, and as you say ring feeders sometimes, sometimes just spreading food on the ground, in lines on the ground (Cons18)

The back of z Tor was like a farmyard. It looked like they'd had a ringfeeder there. And just cow shit, old straw and hay, and puddled up and just in a dreadful state, nothing like semi-natural. (Cons3)

This ecologist working on Dartmoor at the time stated that

Dartmoor was heavily overgrazed in the mid 1990s, albeit on the spectrum of the south west moors, Bodmin moor was much more so and Exmoor much less so. (Cons5)

By the mid 1990s there was also the beginnings of an acceptance by hill-farmers on the moor that their intensified practices were becoming unsustainable.

They recognise that practices that had happened in the past where people were basically feeding cows out on the commons all winter, driving up there with a big four-wheel drive tractor with bales of silage or hay was unsustainable and damaging. (Cons2)

Swaling was identified as being damaging in various ways.

very big burns on the central moor which were very damaging and we were very concerned about the condition of the peat. (Cons1)

square miles in extent and you could see the smoke from Torquay [15 miles away] (Cons3)

... burning in the sixties - the practice was, and farmers have said this to me, you just drop a match and go home, go back the next day and see how much had burnt, and the more the better. (Cons2).

Repeated burns were blamed for the rise in *Molinia* which would occur post 2000.

The *Molinia* was being swaled in order to produce fresh new grass.

I think that was probably a consequence of that period when there was an awful lot of burning going on. And completely inappropriate return times. One of the commons over in the west we had records over 4 or 5 years of the amount of burns that had gone on and some areas of that common had had 3 burns in 5 years. (Cons3).

There was a clear consensus amongst the conservationists interviewed who were working during the headage era that the Commons were overgrazed and unsustainably swaled and as a result the environment and its ecology were being damaged.

4.6. Hydrological perspectives on the headage era on the Commons

In addition to the impacts on habitats and species, grazing pressures and swaling regimes can also impact on the hydrology of the moor's peat (Price et al 2016). Whilst much of the damage to the peat on Dartmoor is historic in nature deriving from activities such as turf cutting and ditch digging (Newman 2011), damage has also been caused as a result of the agricultural intensification of hill-farming post the 1947 Agriculture Act culminating in the headage era. A hydrologist and peatland researcher talking about the hydrology of Dartmoor stated

I would speculate that post-1947 damage has been through over-stocking, significant overstocking and significant agri-burning. And atmospheric climate change as well. (Hydrologist002)

A hydrologist speaking about the threats to the small areas of pristine bog left on Dartmoor expressed the view that continuing erosion on the margins of these sites made them vulnerable in the future to degradation, but suggested that reduced stocking levels and reducing swaling practices had reduced the threat.

I have a concern that even those small proportions of landscape that you would say are pristine, are under threat, over decades. May be lost, may not, because let's face it stocking levels aren't what they used to be, we are not seeing as much swaling. (Hydrologist001)

A hill-farmer provided an account of how an area, known for over 40 years, had dried out considerably over that period.

I look at it and, up the peat works which is an area I've known all my life, I can see a difference up there now to 40 years ago; it is drier, I used to help gather sheep from right down across there and it was a nightmare because you couldn't get through on your pony, there was one route down through that an old hill-farmer knew and unless you could find his route you sunk your horse up to its belly repeatedly. You could ride down a centre bit, the dry bit between the turf ties but as soon as you had to cross the next turf tie you sunk your horse

(Hill-farmer8-2)

Additionally, three interviewees spoke about the 1976 drought and provided anecdotal evidence that the long hot summer had detrimentally impacted on Dartmoor's peat and in fact may have caused a long-term deterioration.

... you got a hard, dry drought in the summer of 1976 as well, which potentially might have pushed things. Anecdotally people have told me that it changed significantly, it changed the catchments, the summer of '76. Summer dryness is the limiting factor on Sphagnum survival, dry summers such as '76 kill it off at the climatic margins, so if it got killed off that summer it's then gone basically, so it takes a long time to come back again. (Hydrologist002)

I can remember when I was younger there were areas of the moor that you would not walk across; I'm not frightened to walk across any of the valley mires now! No it has dried up and there's been all sorts of different ideas about that. I did hear one about the summer of '76. A number of people blamed it on that... "it's never been as wet since the summer of '76...broke the pan you know". (Cons3)

then the fact that the hot summers of '75 and '76 undoubtedly then there was very significant change, I did notice that. And the peat shrank on the moor and did expose some really interesting archaeological features so as a result there was a benefit from that. (Arch002)

The over-grazing narrative used by conservationists focuses on grazing pressures and burning practices. Some of the interview findings highlighted that during the era of headage payments the hydrology of the moor may have been damaged by grazing and burning practices along with weather events such as the 1976 drought along with rises in atmospheric pollution and climate change. The implication being that restoration of damaged moorland vegetation may require more intervention than just grazing and swaling regimes if the hydrology of the areas concerned have been affected as well.

4.7. Archaeologists' views on the impact of the headage days on the moor

Ecologists, conservationists and hydrologists consider that the era of headage payments were detrimental for Dartmoor's Commons, however there are some archaeologists who consider that the opposite is true. Heavy grazing and swaling produced a landscape where all the archaeological features on the moor could be easily seen, recorded and researched. This perspective is discussed further in section 8.3.

it's clearly world class what we have on Dartmoor, it's absolutely exceptional that you can see 5000 years of human activity in an afternoon stroll, very few places in the world you can do

that safely,

... clearly in the 1970s and 80s the archaeological landscape of Dartmoor was much more visible and accessible, you could do proper research because it was easy to get out to these sites.

sheep are the best conservers of archaeological sites in a moorland area like Dartmoor, they are brilliant the way they nibble the vegetation down. (Arch002)

Today, following changes to grazing and swaling regimes as a result of the issues caused during the era of headage payments many archaeological sites have become less visible and some cases have disappeared from view under under-grazed grasses and gorse scrub (Greeves 2015).

4.8. Into the ESA

During the era of headage payments, incomes for hill-farmers on Dartmoor (and elsewhere) were strong but as the years went by, increasing numbers of stock were placed on the Commons and practices such as winter feeding which had been sustainable with lower numbers became unsustainable. Hill-farmers were competing with each other and goading each other on in a process of ever-increasing stocking rates – the over-grazing narrative was born “The Commons are not in “favourable condition” because they have been historically over-grazed and swaled unsustainably”.

I think it took a long time but eventually farmers would say to me that they went too far and that they were all egging each other on and pushing it and pushing it and pushing it, and that they could see that it had gone too far. (Cons2)

In 1994 when the ESA Scheme was introduced hill-farmers faced two policy options – one, which paid them to put stock onto the hills i.e. headage payments, or one which paid them to take stock off i.e. the ESA payments, as one of the EN staff involved at the time said

so straight away it was a recipe for conflict (Cons16).

In addition, there was also an Over-grazing Team run by another arm of government – the Agricultural Development Advisory Service (ADAS) whose role was to ensure that stocking rates were kept below a level which caused significant environmental damage. If these stocking levels were exceeded ADAS had the powers to withdraw a farmer’s headage subsidy.

Hill-farmers therefore had the choice of reducing their grazing levels to avoid losing

their subsidies as a result of actions from the over-grazing teams or join the ESA, accept the accompanying prescriptions and rules and receive payments as a form of compensation for income forgone as a result of stocking restrictions and reductions.

Conflicts during this period of transition were notorious. This is an account of a compliance / over-grazing meeting with some Dartmoor hill-farmers.

Pretty much out and out hostility, again it was surprising to be standing somewhere, where to me the environmental damage was obvious and to have people denying that there was a problem. Or possibly a slightly different response was that the social goods that were being produced in terms of the employment and the rural economy were more important than a little bit of habitat, or that it had always been this way and we were meddling. That we didn't know what we were talking about. Cons002

Some of the early ESA meetings were also very difficult.

.... some of those meetings were quite dreadful actually to be in, fists up in the air and shouting and screaming... (Cons003)

Interestingly whilst the interviews given by the conservationists do include reference to these conflicts, those given by the hill-farmers do not. However, the majority of hill-farmers did talk of their resentment towards EN, this is a typical example.

They never gave us any credence that we had any knowledge whatsoever. We felt, we were treated as second class citizens, basically unintelligent and had to be shown what we had to do at every whip and turn. (Hill-farmer1-1)

The personal impact on EN staff was at times also high, here are a selection of quotes from an individual

... the personal attacks became unbearable really I felt like there was a campaign against me as though I was the problem it was too difficult, too difficult (Cons2)

My interviews with the hill-farmers were conducted 20-25 years after these events took place and it would appear that some are now reflective on what happened.

... so yes, I think English Nature stepping in was right, somebody had to stop what was going on... (Hill-farmer7-2)

A small number of hill-farmers were pleased to see the end of the overwintering of cattle

they stopped winter feeding on the moor which I still think it's a good idea because the winter feeding was making a hell of a mess everywhere, doing a lot of damage. They stopped that

which was brilliant, good, and I would never want to see that come back again. (Hill-farmer27-3)

Early on in the process the over-grazing teams worked closely with the ESA teams and whilst many hill-farmers disliked this approach it did ensure that people understood that if they did not reduce their stocking levels they would have subsidy removed and might even be fined. The ESA team were in a position then to offer financial agreements, here are two hill-farmer different perspectives on this issue

So yes, they came in with the very big stick, with a carrot, sort of a carrot with a big stick backing it up, but they could have just come in with the big stick (Hill-farmer7-2)

they would not listen, they just went in too heavy handed with a stick; if you don't do what we want, cut your stock numbers down, we will do you for over-grazing (Hill-farmer12-1)

When the over-grazing teams started imposing stocking levels it made joining the ESA much more attractive financially and as a result between 1994 and 2000 EN were able to sign up agreements on Dartmoor worth around £12m covering over 80% of the Commons (Eamon Crowe, NE, pers comm).

Joining the ESA did however have major repercussions for hill-farmers, particularly those who kept cattle. The overwintering of cattle was not permitted within the scheme and cattle had to be removed from the Commons from the 1st November to 31st March. This necessitated the building of sheds, slurry facilities and the in-door feeding of cattle which all came at a cost. For cattle farmers this change was very controversial and costly.

... taking the cattle off the 1st of November, we always said that was, for the true hill cow was stupid, but they never listened to us, so we've had 20 years of taking those animals off, those animals now are used to coming in on the 1st November so they are total mind set of coming off, they are looking to coming off the 3rd week of October, they're looking in the moor gate to come in. (Hill-farmer14-1)

In addition to stopping overwintering, the actual numbers of cattle and sheep were substantially reduced. The agricultural and ecological implications of these removals will be covered in more detail in the chapter 5.

It is unambiguous from the interviews with the ecologists and conservationists from EN who were involved with the introduction of the ESA that they were clear that the Commons of Dartmoor were being unsustainably managed and that significant changes in agricultural practices were required. They were also confident that the

management prescriptions that they were introducing as part of the ESA scheme were based on research from the south west and other upland areas in the UK and would be effective in restoring the upland habitats on Dartmoor. Most of the hill-farmers interviewed recount how EN staff assured them that if they followed the prescriptions heather would return to areas where it had been lost, within a few years.

English Nature jumped on the bandwagon and said "look once the stock have been removed we will then have all the heather back just like that". Well it hasn't worked like that as you can see. (Hill-farmer8-1)

With hindsight, returning SSSIs in the uplands back into "favourable condition" has proved extremely challenging, however those involved with introducing the ESA and negotiating the agreements do not concede today that their prescriptions were wrong, indeed they argue today that as the Commons had been managed so unsustainably for a number of years their recovery would take decades. This will be discussed further in chapters 5 and 6.

The following section details a number of the issues identified during the interviews that caused the negotiation of the early ESAs to be so confrontational and conflicted. The introduction of the ESA did not just bring changes to farming methods, it also forced Commoners to agree amongst themselves how stock numbers would be reduced and how the ESA payments were to be distributed amongst themselves. In addition, they had to work within a new culture where their own local knowledge of place and farming practices were trumped by scientific knowledge and the detailed and bureaucratic nature of the prescriptions.

4.9. Changes to hill-farming: cutting numbers and stopping overwintering

Whilst payments from the ESA scheme had the potential to mitigate financial losses for hill-farmers by replacing the headage payments for the animals removed from the Common, it also significantly changed farming practices. In many cases hill-farmers reported having to remove 50% (and in some cases 75%) of their stock – both sheep and cattle overnight.

We were down to 25% of what we had before and we have lost a lot of small graziers and along with that we have lost their skills and their ability to help commoning. (Hill-farmer1-1)

In addition, as they were no longer able to overwinter their cattle on the Common they had to make alternative arrangements. This often meant using their ESA payments to build sheds to house their cattle over the winter months.

Whilst most of the hill-farmers interviewed accepted that cuts were necessary they argued that the cuts in animal numbers set out in the prescriptions were too steep and introduced too quickly meaning that farmers were unable to plan to introduce the changes. For example, a hill-farmer interviewed said a 10% should have been introduced and then monitored and then increased again if needed. Another said, introducing three changes at once i.e. cuts to sheep numbers, reductions in cattle and the cessation of overwintering, meant that it was not possible to identify which changes were effective and which might be proving detrimental.

They changed, they came in and they changed, they stopped winter feeding cattle, they reduced some cattle numbers and they reduced sheep numberswell if ever you are trying to change something and you want to monitor how you are changing it, you don't change three big things at the same time ... in my mind they should have come in saying right we are going to stop wintering cattle, the winter feeding. We will do that for the first 5 years of your agreement, at the break clause if we are not getting, if we still consider we need to do more we will then be doing stock reductions overall. (Hill-farmer7-1)

Another common hill-farmer criticism about the stocking levels put forward for Dartmoor were that they were based on research conducted in the north of England and Scotland. They argued that as Dartmoor was in the south west, experienced a milder climate and was not as high in altitude, it required more animals to graze the vegetation effectively than was permitted in the prescriptions. These criticisms appear to be valid as one of the EN interviewees acknowledged that stocking levels were increased after a few years to reflect this.

I used to work in the North Peak, so I had quite a lot of experience on moorland commons and heathery commons; I soon came to think Dartmoor's commons were completely different to the northern moors, and I challenged my own ecologists at that time saying look you have heather stocking levels at 0.225 [Live Stock Unit LSU] this summer and 0.17 [LSU] in the winter, which are northern figures, this is quite a south-westerly climate, vegetation, you do need to up these levels (Cons16)

Looking back to the days when the ESAs were introduced, most hill-farmers interviewed still believe today that EN got their prescriptions wrong and this quote typifies that attitude.

They've just mucked it up, it was just too drastic. They're not going to admit "we've made a big mistake in the way we cut the stock numbers so quickly" are they? (Hill-farmer12-1)

4.10. Cutting the cake: arguing about the money

ESA agreements were negotiated on a Common by Common basis. This meant that all those Commoners who have grazing rights for that particular Common need to agree about who will put stock on the Common, how many animals each, who will not put stock out (and become "non-active graziers") and how will the money be split up amongst all the Commoners and the landowner. This caused and still causes huge resentment and conflict amongst Commoners. These two quotes represent the views of the vast majority of hill-farmers interviewed.

One big problem I think is that English Nature didn't stipulate how the money they were giving should be allocated, because that is what has led to an awful lot of the arguments. (Hill-farmer19-1)

There are villages here that farmers won't help when they used to calf a cow or anything, because the environmental agreements has caused such a rift between the haves and the have-nots. (Hill-farmer1-1)

Agreeing these issues were set against the backdrop of 50% and sometimes greater reductions in stock numbers. In some cases, Commoners concluded that the stocking cuts imposed on them meant that it was no longer viable to put stock on the Common, such situations led to other farmers attempting to take up any short fall. This whole process led to considerable inter hill-farmer conflict where family feuds flared up as attempts were made to allocate the ESA money to all the active and non-active graziers.

.... a man with 100 sheep taking off 50% he'll probably say it isn't worth turning out 50, so that's another man lost, his management structure and learing his animals, (Hill-farmer14-1)

Other non-active graziers argued that because they have removed their stock from the Common and placed them on their in-bye land they should be paid the bulk of the ESA money as they were firstly helping EN reduce stocking levels and secondly were losing the ability to grow hay on their in-bye as it was now grazed.

I think the non-graziers should be paid the bulk of the money because we are having to use our own grass when all our neighbours are out using the common's grass and they can then grow hay on their own ground which we can't do because we are having to graze our own ground. And Natural England seem to favour reducing gazing levels so if we are reducing

grazing levels on the common by not putting stock out we should be rewarded. (Hill-farmer19-3⁴²)

Without a doubt the issue of negotiating an agreement proved to be very divisive, creating conflict between neighbours where previously none had occurred and exacerbating feuds between families where they already existed. In many cases it undermined and made the collective act of Commoning much more difficult and in some cases impossible. These themes came up in all the hill-farmer interviews, in informal conversations with hill-farmers, and was something I experienced as a practitioner with the NT.

On some Commons, the Commoners were unable to agree on how the stock numbers and the money was allocated and as a result the agreement could not be signed, as some Commoners felt that other Commoners would exceed the agreed stocking rates and all parties to the agreement would then be fined.

We are non-grazing commoners at this moment in time. The common is not in any agreements at the moment and that was because we weren't able to achieve consensus - just down to two individuals being bloody-minded and bloody greedy. They pushed their luck, pushed their luck, pushed their luck, and they were told where to go. And that was the end of that. (Hill-farmer25-3)

4.11. The clashing of cultures: scientific knowledge and local knowledge

The changing of farming systems and the issues emanating from allocating ESA money led to highly charged meetings and difficult personal relationships between the conservationists and the hill-farmers. The government conservationists were all University educated scientists working in an era when conservation was in the ascendancy and was well funded. By contrast the hill-farmers were very often multi-generational farmers who had learnt their skills from their parents opposed to formal education at time when hill-farming was an attractive business as a result of the subsidy payments that were in place to encourage production. It was a clash of cultures as well as a clash of ideas.

They were very reluctant to see our point of view at the beginning. They would go away to their universities, get their degrees and come back and be hard-school ecologists thinking "this is the way to do it" and they'd impose their views, they would have the power because they had the payment structure which gave us the incentive to do it. (Hill-farmer14-1)

⁴² A minority view as only four non-active graziers were interviewed.

As the ESA was first introduced on Dartmoor it was clear that there was little trust between either party. Staff from NE were in the stronger position as they either had the powers to reduce grazing pressures via headage payments reductions or they could reduce the grazing pressures by offering agreements under the ESA – a scheme which had nationally set prescriptions which those signing up to the scheme had to follow or face fines. The nationally agreed prescriptions could not in the early days of the ESA be changed locally.

Many of the hill-farmers interviewed considered that the conservationists blamed them for the damage that had occurred on the Commons even though at the time they had been following conflicting Government advice. This was a typical response.

.... so it was probably farmer's response to policy that said "keep more we'll pay you more"..... farmers have got inappropriately blamed for actually responding to policies put in front on them. (Hill-farmer22-1)

As a result, levels of trust and understanding between the two sides were very low

when we started off the attitude was never quite right, they were always against the farmer, the farmer was the bad guy and they were the right guys. (Hill-farmer8-1)

The hill-farmers interviewed generally felt that the conservationists were reluctant to see the hill-farmers point of view as they had been University educated and come back as "hard-school ecologists" saying that "this is the way to do it". There was a deep resentment that EN appeared to be uninterested in any local knowledge that the hill-farmers had.

there is still that we are to blame for everything and until the actual sea change of how the government people look at a farmer ... we are highly educated people nowadays, we aren't chewing straw with smocks on, we are highly educated, we have to be, and I think we are just ignored. (Hill-farmer001-1)

I mean the most annoying thing is twenty years on from when all this started we were just peasant farmers who didn't know bugger all, we were looked down on by the ecologists but we've been there for generations and we've learnt from generations about how to manage the moor, but we were not listened to. (Hill-farmer12-1)

Many hill-farmers also lamented the fact that the majority of the conservationists were poorly educated when it came to farming matters and there was deep frustration when prescriptions were promoted which the hill-farming community were sceptical about their effectiveness. It is clear talking to both the conservationists and

the hill-farmers that the beginning of the ESA was very fraught, characterised by mistrust, conflict and the threat of fines if rules were not followed. This quote perhaps captures the moment well.

... once upon a time they were hammer and nails “you do what we tell you otherwise you’ll be penalised”, that was the beginning. (Hill-farmer8-1)

4.12. Concluding remarks

It is also apparent that in the 25 years which have now passed tensions are now greatly reduced. The conservationists involved on Dartmoor today are adamant that without a certain level of robustness, detailed prescriptions and a system which deterred non-compliance to the rules reducing the grazing pressures and unsustainable burning regimes which were prevalent during the 1980s and 1990s would not have proven possible. Whilst many of the hill-farmers to this day are still resentful that they were not listened to, angry about the state that their Commons are in today and frustrated by the agricultural consequences of the changes to farming practices which the ESA forced (both of which will be covered in chapter 5), they also concede things had to change and change involving groups of Commoners all vying for position and funding was never going to be easy, without conflict or high levels of emotion.

The over-grazing counter narrative emerged in the latter days of the headage era before the ESA schemes were brought in. It was a narrative which effectively described the ecological issues created by high stock number, all year round grazing and unregulated swaling. It extinguished the post-war policy narrative that agriculture and environmental protection were compatible. The next two chapters will look at the agricultural impacts of the restrictions which accompanied the ESA’s detailed prescriptions and will look at some of the unintended ecological consequences of the agri-environment schemes.

Whilst very few of the stakeholders would argue that the over-grazing narrative was true in the 1980s and mid 1990s, no hill-farmers now would say it is was still relevant today. However, it is a narrative with deep strong roots and despite much evidence to counter its relevance today it is still widely quoted as the reason that upland habitats are not in favourable condition and are not delivering the appropriate biodiversity outcomes, see Cox et al (2018), Helm (2019) and Smith (2018) for

examples which clearly state that over-grazing is the priority problem that needs to be addressed if nature is to be restored. The following chapters will argue that the situation, at least on Dartmoor, is more complex and nuanced and that if progress is to be made other narratives need to be explored.

5. The agricultural impacts of the agri-environment schemes: 1994 to present

5.1. Introduction

As discussed in Chapter 4, by the early 1990s it was evident to the conservationists of EN and many hill-farmers that the impacts of the intensified upland farming practices, encouraged by headage payments, were taking their toll on the natural environment and habitats generally on the Commons of Dartmoor. Encouraging hill-farmers to sign up to the ESA and follow the detailed prescriptions designed to reduce stock numbers on the Commons and introduce more sustainable swaling practices was thought to be the way to restore habitats generally and see a return in particular of heather. The ESA paid hill-farmers to reduce their cattle and sheep numbers, cease the overwintering of cattle and reduce the size and frequency of burns. The widely held view of conservationists was that such an approach would be successful, however the introduction of the ESA as well as creating conflict amongst hill-farmers and EN (as described in chapter 4) also led to a series of agricultural consequences for farming practices along with unexpected and unintended impacts for the ecology of Dartmoor. This chapter details both the agricultural and ecological consequences as described by the hill-farmers and those working for EN/NE at the time. As the over-grazing counter narrative begins to dominate a profound change to the hill-farmers' narrative occurs – the entrepreneurial nature of their lives largely ends, their traditional farming practices are altered significantly and regulation and rules following become the new norm.

5.2. Broken and disrupted lears

In order to limit the damage caused by over-grazing, EN reduced stocking numbers. Some of the hill-farmers I interviewed reported cuts of over 50% and several reported cuts of 75% to their sheep and cattle although no attempts were made by me to validate these claims. All those interviewed had seen some reduction in stocking rates. These quotes also show that the cuts were deep and immediate.

Right from the start they cut us from over 50% of our stock overall, just overnight, take it off the Commons if you want to end up in the scheme. (Hill-farmer10-1)

Many of the hill-farmers were also bitter that EN was not aware of what the consequences of these cuts would be on their lears.

Most environmental people that come to tell us what to do, do not understand what a heft is and how important it is and the fact it is their one and only stock tool they have, and most hefts on Dartmoor are now damaged. (Hill-farmer1-1)

I was told by most of the hill-farmers that the lears for both sheep and cattle were maintained by the sheer numbers of animals on the Commons. The stock had initially been shepherded to an area and they remained there because there were flocks or herds in the adjacent parts of the Common which stopped animals from straying. This example from a hill-farmer who has a lear in the Forest of Dartmoor (the remote and central Common which is surrounded by all the Home Commons) illustrates that the reduction in stock numbers on the Home Commons has made it much more difficult to ensure that stock in the Forest, which is often much higher more exposed ground, stays there and doesn't drift back down to the lower Home Commons.

our lears are mainly in the Forest but it takes a lot of commoning, time and effort to get those animals into the Forest because there are no physical boundaries, it's just the pressure of other animals that keep those animals out. And also the amount of time that you frequently go out there to keep those animals in those places so it is time consuming, a lot of effort to keep those lears maintained within the Forest. (Hill-farmer 014-1)

During my visits to the various Commons on Dartmoor during 2018 and 2019 I had repeatedly noticed how few animals there were in the Forest of Dartmoor and how much more stock there often was on the Home Commons. During an interview I asked a hill-farmer where all the Forest stock was.

Well I think you've just seen them, on Okehampton Common. Trouble is you haven't got any fences. So, what's happened is you've got the Forest in the middle, you've got the Home Commons, everybody has had to reduce, what kept the Forest stock up there was the pressure from down here. You've reduced the pressure down here so they've just come back. And you can be up there day in day out driving them onto the Forest and they will follow you home. (Hill-farmer7-1)

The cessation of the overwintering of cattle has had a number of consequences (see section 5.2) but it has also impacted on their ability of lear to a specific area. As the cattle were removed from the Commons at the end of October until the spring these animals were no longer leared to a specific area and as a result, particularly in the Forest of Dartmoor the cattle were no longer willing to stay in these remote and often exposed parts of the moor. This is how a hill-farmer responded to the question that there appeared to be very few cattle in the Forest.

The reason being, all these animals that are used to their lear, majority haven't got a lear anymore because they are taken away from November until 15th April and then they've been indoors and they aren't hill animals anymore. (Hill-farmer8-2⁴³)

The reduction in stock numbers caused by the introduction of the ESA meant that for some hill-farmers the numbers of sheep or cattle they were entitled now to pasture on the Commons were so small that it was no longer worth their time or effort to do so.

I'm talking about the open Commons, the big areas, because you can't, it's not viable to carry on farming - we were cut back on one area to 23 sheep or something (Hill-farmer5-2)

We always joke in the hill-farming project that we're going to end up with six or eight farmers on Dartmoor within the next thirty years. Within one generation. (Hill-farmer1-2)

I asked one hill-farmer why, when he only had rights to pasture 15 cattle in the Forest which would take him well over an hour to reach his lear on a quad bike, did he continue to try and graze his cattle.

I reckon I've put a third of the hours or miles on my quadbike just looking for those 15. Somebody to the South who I get on very well with, trying to get stock to live there, started molasses feeding, my animals found it. They know where that is now, they are legging it down there all the time and now I have 3 things to battle; the weather, the horrendous Molinia, and someone feeding lovely sweet stuff on the edge of the Molinia in the wrong place. And I am looking at it saying this is real touch and go, we are at this time in politics, the time of these agreements, they are all going to run out together, why am I doing it? And that would be a shame especially as I have really pushed to get those cattle to stay there, I have spent a lot of time, and I am younger - not young but younger - but I am nearly abandoning it. (Hill-farmer24-3)

With reduced stock numbers and the increasing difficulties of physically getting around the Commons a number of hill-farmers have stopped putting out stocking or are seriously considering doing so in the future.

5.3. The overwintering of cattle

The majority of cattle being overwintered on the Commons during the headage days were hardy cattle such as Galloways and Belted Galloways. So, when the ESA began hill-farmers who signed up to the Scheme had to remove their cattle from the Common by the end of October and were not allowed to take them back to the moor

⁴³ This has been marked as a mixed view because only around half of those interviewed previously kept over-wintering Galloways. All Galloway hill-farmers would concur with these comments.

until the middle of April. This meant that the cattle had to be wintered on the in-bye land or off the moor. This had major implications financially and agriculturally for those hill-farmers who kept hardy cattle - the modern traditional hill-farmers (see section 4.4). For those hill-farmers who kept breeds such as South Devon cattle, animals which were only summered on the Commons (the historic, modern/historic traditional hill-farmers), the implications resulting from this aspect of the ESA were far less serious as they already had much of the infra-structure which was needed to overwinter their animals on their Home Farms.

5.3.1. New infrastructure

Those with herds of Galloways had to build new cattle sheds, install slurry pits and acquire the necessary machinery such as tractors to conduct the overwintering process, assuming they could get planning permission from the DNPA. From my own personal experiences whilst working on Dartmoor from 2004, it is clear that many new sheds and slurry pits have been built. There are also a number of examples where planning permission for such facilities has not been granted, resulting in an intensification of the in-bye or an abandonment of cattle rearing (see section 5.4.1.).

Well in the past we used to do a lot of winter feeding out on the common, it's only in the last 15 years we have had this infrastructure of building sheds and slurry pits and tractors and all the rest of it. (Hill-farmer14-1).

The building of new cattle sheds, the installation of slurry facilities and the acquisition of new equipment to overwinter and feed cattle was a costly exercise which was funded via the use of the ESA payments and additional bank loans.

But the amount of money we have spent on sheds to actually be in that scheme has probably eaten up all the money we get for the scheme. (Hill-farmer12-1)

5.3.2. The economics of Galloway cattle

As discussed in Chapter 4, Galloway cattle were considered the animal of the “headage era” as they could be outwintered and as each animal attracted a payment the more that were kept the more income and profit was accrued. The reduction in cattle numbers and the cessation of overwintering on the Commons changed the economics of Galloway cattle farming greatly.

During the 1950s to the mid 1980s Galloways were kept until they were 5 years old, by which time they were big animals (Willing 2018), but as a result of BSE (from 1986 – 2001, peaking in 1993) cattle could not be sold after 30 months. Being hill animals their growth rates are less than lowland animals so younger Galloways sell for less than similarly aged larger breeds. During the era of headage this could be accommodated via the subsidy payments but once the ESA commenced and animals had to be housed and fed for up to six months and at least part of the subsidy payments were now used to provide for the newly needed infrastructure or service the loans for these, as a result the economics of keeping Galloways became very poor. As this hill-farmer states, and this is a very typical view of all of those hill-farmers keeping Galloway cattle,

Years ago people would keep Galloway steers until they were 5, 6 years old, quite big animals then, but obviously in this day and age you don't want to keep them too long and pump in too much food, otherwise they are going to start costing you money (Hill-farmer16-2⁴⁴).

I have been told by Dartmoor's hill-farmers that overwintering cattle on the Commons costs in between a quarter and a third of what it costs to overwinter in sheds and feed them. The quotes from the following three hill-farmers who keep both Galloways and South Devon cattle illustrates the economic pressure of keeping the smaller hill cattle.

But the way we've got to farm the cattle at the minute, bringing them in all winter, they say it takes £400 to keep a cow through the year; well we farm South Devon Cows, we have a good spring calf, that calf in 6-7 months' time, say November, we go to market and if it's a good calf it could make anything up to £800 pound, whereas a Galloway calf won't make more than about £100, now that speaks for itself doesn't it (Hill-farmer10-2)

.... it costs as much to put straw under the belly of an autumn calving Galloway as it does a South Devon, but I'm 100, 150, 200, 250 quid down in the sale. They are not wintering cheap so unfortunately, they are going. (Hill-farmer024-2)

.. the environmental schemes virtually force you into autumn calving cows and it costs us upwards of £400 to over winter them with a calf at foot, so we were putting Galloway cows indoors because it was the only way and it's just not economic, so people look at the cheque that comes from these schemes but they don't look at what it is costing them, and we did the costings and we said it just won't add up. (Hill-farmer004-2)

⁴⁴ All the hill-farmer quotes are marked mixed views all the comments would be shared by Galloway keepers.

However, a payment is made if the hill-farmer keeps a pure-bred Galloway – this is the “Native Breed at Risk” (NBAR) payment and at the current time this ensures that it is just still economically feasible to keep Galloways.

so yeah, if it wasn't for us getting the payments for the purebred Galloways running on the moor I don't think they would be worth keeping. Yes, so we get paid for the pedigree Galloways. (Hill-farmer16-2)

To keep the traditional type of stock, the stock on the moor, we need some sort of payment, no doubt about that. ...years ago when my father was farming we had the old hill payment which I've seen it in writing many times, it described it as “this payment is for the overwintering of hill beasts”. (Hill-farmer10-2).

5.3.3. The impact of overwintering on the hardiness of the cattle

Whilst the issues of providing new infrastructure and the challenges of hill cattle economics were (and are) clearly important to the hill-farmers interviewed, the issue of greatest concern to the 16 Galloway cattle hill-farmers I spoke to, was the impact that overwintering in sheds has had on the overall hardiness of the individual cattle.

In the “headage day era” Galloway cattle would stay out on the moor in the winter and receive some supplementary feeding and would only return to the Home Farms for January, February and March before returning to the moor in April. When at the Home Farms they would outwinter in the in-bye fields. As a result, they were tough animals and I have been told many times that they preferred outwintering than to being confined in sheds. However, in the 18-23⁴⁵ years since the ban on overwintering was introduced the Galloways have become less hardy. This has had a number of implications for farming and for the ecological management of the moor.

So, prior to the introduction of the ESA the Galloway cattle were hardy enough to withstand Dartmoor’s winters and were leared to particular areas of their Common, the sheer numbers of stock in adjacent lears ensured that the cattle remained in their own lear and grazed there throughout the year.

So once the ESA commenced cattle were removed from the Commons at the end of October and were not returned until the middle of April – this combined with the reduced numbers of stock generally on the Commons meant that many of

⁴⁵ The date range occurs as different Commons entered the ESA in different years.

Dartmoor's lears were broken and as a result the series of unintended consequences occurred.

1. Cattle could not be enticed to remain in the higher remote areas of the Forest of Dartmoor.

they've been brainwashed into being indoors and to expect them then to go out on Hangingstone ⁴⁶ and live out there well that's not going to happen. (Hill-farmer8-2⁴⁷)

2. As many of the lears were broken due to the lower stock numbers and reduced numbers of hill-farmers grazing the Common cattle and sheep would drift down from higher ground to find better grazing (as discussed in 5.2.)

3. The Galloways are now used to wintering in sheds so instead of returning back to the Home Farms at the end of October when they were gathered in they began to journey back on their own.

... the animals have got very soft because they know they can run home and there will be a shed they can go in. You've got to think of the cows would you stand up there all winter with just bread to eat? Or would you go down the hill with a roof over your head and perhaps a little bit of bread and jam? (Hill-farmer12-2)

4. At the first sign of deteriorating weather the cattle would return to their Home Common's (or an adjacent Common's) moor gates where they would overgraze or poach the area.

*... the Forest cattle would come back to *** Common and then you'd be in a holy mess really and they won't stay... (Hill-farmer12-2)*

*I can't now keep cattle on the Forest as they are not as hardy as they once were, the Forest by its nature is in the middle so all the Home Commons all the way around it and they would, they are bound to come back to shelter in the rough weather, and in my instance that would mean they would come back to *** Common which I haven't actually got any rights on and that will cause me a load of hassle. (Hill-farmer21-2)*

5.3.4. The issues of cross bred Galloways

In the search for making incomes more profitable from Galloway cattle some hill-farmers began cross breeding their Galloways with breeds such as Herefords. This produced larger and heavier animals which sold for higher prices at market.

However, such a strategy was not without its consequences, firstly the hill-farmer lost

⁴⁶ Hangingstone Hill is the third highest part of Dartmoor at 603m after Yes Tor and High Willhays (619m 621m respectively)

⁴⁷ Marked as mixed views but shared by all Galloway farmers

their premium payment for breeding pedigree Galloways – the Native Breed at Risk payment and secondly the cross breeding made the animals even less hardy than the now “softer” shed overwintered pure-bred Galloways.

because the cattle are removed so early, farmers have changed their type of cow, rather than a pure Galloway they cross breed it, that means the cow is not quite so hardy so therefore they don't turn them out quite so early in the spring or they don't leave them out quite so long and they don't venture as far so they only target the sweeter grasses so parts of the common then become inaccessible and under grazed. (Hill-farmer14-2)

people have gone away from the Galloway because we've had to take them off so it's all cross-bred cattle now and they will not stick the weather, they won't stay out there, as soon as you get the first rough weather in they come and they'll be coming back to the walls all the time, whereas the old Galloways up there kept on. (Hill-farmer10-2)

The cross-bred Galloways are less inclined to return to the Commons in mid-April as they often find the weather too inclement, and as a result some will not return until mid-May. This can prove significant as the *Molinia* often begins growing in early May and is only palatable to cattle between May and July – as a result cross bred Galloways miss the early part of the growing season. The significance and importance of this is covered in much more detail in Chapter 6.

5.4. Impacts on swaling practices

5.4.1. Introduction

When the ESA was introduced, the way that swaling was allowed to be conducted on the Commons of Dartmoor was considered by all hill-farmers to be much more restrictive than it had been before (see chapter 4.2.3.). The prescriptions that set out how swaling was to be carried out included maximum burn area (no more than 2ha), the timing of burns was regulated by the Moorland Burning Code ⁴⁸ (no burning on Dartmoor beyond the end of March) and swaling on blanket bog was prohibited. These restrictions combined with the reduced stocking levels and the overwintering of cattle restrictions led to substantial vegetational changes across many of Dartmoor's Commons including the Forest of Dartmoor. The drier heath areas saw major increases in the growth of Western Gorse as can be witnessed on Gidleigh and Holne Commons for example, whilst on the wet heaths and the drier areas of blanket bog there were major expansions of *Molinia*. These two issues will be

⁴⁸ https://www.dartmoorcommonerscouncil.org.uk/menu_page.php?id=56

discussed in further detail in Chapter 6 but their significance with regards to swaling leads to what all hill-farmers interviewed refer to as a major increase in the “fuel load”. Fuel load is basically the dried leaves of last year’s *Molinia* and extensive stands of gorse, which in a dry early spring or a dry hot summer this is very flammable and the general concern is that large areas of moorland could catch fire, either as a controlled burn which gets out of control or as an accidental wildfire. The remainder of this section on swaling looks at the way that the prescriptions from the ESA and subsequent schemes have impacted on swaling practices and these need to be seen against the backdrop of this increased fuel load.

The following comment perhaps summarises how the vast majority of hill-farmers interviewed feel about swaling.

It becomes almost impossible to burn on the Commons now there is so much fuel load there, it is frightening, no-one wants to be responsible because we know we’ll be fined if we get it wrong. We’ll probably be fined for not doing it. (Hill-farmer1-1)

The quote gives a good insight that is held by many hill-farmers on Dartmoor as to the power of EN/NE when it comes to policing adherence to their prescriptions, this is despite the repeated assurances from NE officials who I have heard speaking publicly re-assuring hill-farming that fines will not be forthcoming if adequate plans are put in place. That message appears to be being heard by at least some hill-farmers.

.... someone actually got to be brave enough to light it without the worry of “if this does go wrong..” well with the financial risk that was always a worry in the past but it seems to have changed slightly now. (Hill-farmer9-1)

With regard to the size of burns permitted all hill-farmers interviewed considered that the 2ha size restriction was too small. Some still wanted to burn “hillsides” while other were happy to burn smaller areas, although there was some frustration at the arbitrary nature of the 2ha. prescription.

Just one frustration now is with the areas we are allowed to burn, in 15 years of agreements the National Park has mapped the areas we have swaled and the average has been 2.58 hectares. We are now told that the maximum is 2 hectares. (Hill-farmer13-1)

The implications of the area restriction is that in order to achieve a mosaic of uneven ages of dry heath, multiple burns every year are required.

Some days we may have done 8 little burns and sometimes we'll have had 2 days at it but we'll never have done 16. (Hill-farmer13-3)

In order to achieve these multiple burns a number of factors need to come together simultaneously.

1. Although swaling can occur from October through to the end of March it is traditionally carried out in February / March as it is considered for a burn to be successful the wind needs to be dry and from the east which occurs often at that time of the year.

Now to make a successful burn on the moor you need low humidity, not just dry weather. In march the wind swings to the east the humidity drops from 80-90% down to about 30% ... And that's the time to do it. The reason it's done then is it literally works. (Hill-farmer24-1)

2. Unfortunately this window of time coincides with when many hill-farmers are lambing i.e. it is a very busy time of the year.

... we could have gone out and burnt later on, no-one did - why didn't we? Because we got into lambing time and there is just too much to think about so you don't bother. (Hill-farmer3-1)

3. Swaling is a collective activity and requires a number of Commoners to be present in order to ensure that fire brakes are cut, that fire beaters and Fogging machines ⁴⁹ are present in case the fire does not restrict itself to the planned area.

Sometimes I guess it's about cooperation with other commoners on that area, whether everyone is prepared to turn out and help, do a burn that may not necessarily be on their leas, our own particular area there are 4 main graziers, we cooperate really well. So, there's a management plan, there is always an area identified each year that we want to try and swale if the weather conditions are right. If that happens I know I can phone the other 3 commoners and they will come and help me. They know when it's on their side that they can phone me and I'll go and help them. (Hill-farmer18-2)

However, such examples of co-operative commoning are not universal across the Commons of Dartmoor as this quote illustrates.

Yes, in terms of swaling then the two neighbours that do get on, I've got my neighbour here, we will go out and swale it, but I know there are a couple of farmers that won't help me or help us, so you don't even bother asking them. So, you've got guys you can work with, you've got guys you can't; I suppose that's the same in any walk of life. (Hill-farmer21-2)

⁴⁹ A quad bike set up with a water tank and hose

4. Adverse winter weather in February and March can mean that the entire swaling season can be missed. This happened on Dartmoor in 2017 and 2018 when heavy snow fell at the key periods. When this happens two years running it can create a serious back log and overgrown areas of gorse can develop.

5. A small number of hill-farmers interviewed, particularly those who had recently been involved with controlling wildfires on the moor talked about the dangers to themselves and other Commoners of swaling tall European gorse and old growth Western gorse. In some areas hill-farmers would be unwilling to swale such areas as they considered it too dangerous. Such areas then become vulnerable to wildfires themselves as a result of their huge fuel load.

you've got flames shooting up there, 30, 40 feet, you can't communicate unless you happen to have a mobile signal, there's no other way; it's deafening and it's dangerous. (Hill-farmer11-2)

In addition, climate change is meaning that some moorland birds are breeding earlier than they did historically. There are some moorland owners who are concerned that this may be impacting one those breeding species and are not granting the necessary permissions for swaling that the Commoners require. Swaling is at the discretion of the landowner and is not a Common Right on Dartmoor. This has led to conflict and the requirement from the landowner that the swaling is carried out in the autumn opposed to the late winter.

Our most recent trip up there was "no you can't do that" and that's where it ended.... They are making it very difficult.... We've had some really dry weather in January and February, in the past, and the gorse had too much sap for it to burn [in the autumn] We are not against trying autumn burning, we are not against that at all, we will try. (Hill-farmer13-2)

5.4.2. Gathering stock and shepherding

On many Commons there are now extensive areas of unswaled dry heath which have become inaccessible to stock and these quotes illustrate this

.... when dad was here you could ride across them anywhere because we had like I say 100 black cattle out running all winter. Now you can't ride hardly anywhere it's turned into a jungle [of gorse] So that was cut from 100 Galloways down to 16. (Hill-farmer26-1)

It's all covered in gorse. We can't, our stock can't get into it, if there are a few in there we can't get them out as our common is becoming impenetrable [with gorse] for the first bit, that cannot continue. (Hill-farmer13-1)

A number of hill-farmers described that because of the extensive areas of gorse in the dry heath areas it was becoming progressively difficult to gather their stock and that their sheep dogs find it very tiring to work those areas. In this first quote the hill-farmer is comparing gathering stock from an area which had recently been affected by a wildfire i.e. the gorse had been burnt and as a result the ground was open, to an area which had not recently been swaled and as a result was dominated by gorse.

One thing that sticks in my mind is where the wild fire was this spring, the difference in the gathering for us and the dogs and the quad bikes, to where it hasn't been burnt for a long time is unbelievable and the further we got towards home and some go up the wrong path and the dog can't pass them because of the height of the gorse and it's not easy working. (Hill-farmer9-1)

This example comes from a Common where one of the owners had insisted swaling was conducted before March to protect any early nesting birds, as a result of this, combined with inclement weather conditions in the previous years, the areas of dry heath dominated by gorse were in places very extensive and in the view of the Commoners an impediment to their day to day activities.

The other graziers and myself were struggling to gather their animals, the dogs wouldn't run through the gorse, there was a lot of bad temperedness about it, we were frustrated. (Hill-farmer24-3)

Whilst it is clear that smaller areas of gorse are now swaled compared to the pre ESA days there are also other factors involved with the spread of gorse and its potential dominance in the dry heath areas.

5.4.3. Dartmoor ponies and gorse

There has been a major reduction in the number of Dartmoor ponies on the moor, numbers peaked during the 1980s at around 10,000-15,000 animals but now there are less than 1200 (Charlotte Faulkner⁵⁰ pers comm). These semi-wild populations stay out on the moor for 12 months a year and whilst they are owned by individual hill-farmers they are not fed supplementary food. In the winter months a substantial proportion of their diet comes from eating gorse. Whilst the reasons for the decline in numbers of Dartmoor ponies on the Commons are numerous and complex, one

⁵⁰ There are no published figures for historic numbers of hill ponies on Dartmoor, however Charlotte Faulkner is a leading expert on Dartmoor ponies and is the founder of The Friends of the Dartmoor Hill Pony. The peak figure of 10,000-15,000 ponies is the widely accepted number.

important reason is linked to the prescriptions of the ESA. Permitted stocking densities on individual Commons are based on the numbers of sheep, cattle and ponies and are calculated and monitored as “Livestock Units per ha. per Year”. A suckler cow and a Dartmoor pony are both considered to be one livestock unit each, however a Galloway cow would also generate a payment as a NBAR and its offspring would ultimately be sold at market. On the other hand, a Dartmoor pony does not receive the NBAR because although there are pedigree Dartmoor ponies in existence they are kept in the in-bye fields to avoid being mated by “rogue” non-pedigree stallions on the Commons. So, the Dartmoor ponies on the Commons are not pedigrees and attract no subsidy, additionally the market for Dartmoor ponies is very poor and most animals are currently considered to be worthless. Whilst conservation practices might favour ponies, market forces back cattle. This quote succinctly sums up the dilemma.

... to have more ponies out there from the conservation side of things, of course that is going to help, definitely a lot of people would rather take off the ponies and put cattle up there because financially that is the better way forward, but I certainly think that the ponies do a great job of eating the gorse. (Hill-farmer16-2)

This hill-farmer also details the importance of ponies in keeping gorse under some form of control.

I mean sheep will eat gorse, you will see them very carefully eating the flowers, they love them, but it's very carefully, whereas a horse will make much more of an impact and they are allowed to be out all winter so they have a bigger impact. (Hill-farmer15-1)

The issue of ponies and the role they can play in reducing *Molinia* is further discussed in chapter 6.

5.4.4. Gorse, nitrogen, climate change and severe weather

As discussed in section 2.3., atmospheric pollution, particularly from nitrogen deposition and climate change are impacting on upland habitats and species. The issue of nitrogen deposition is not well understood by most hill-farmers or conservationists but a number of the hill-farmers did implicate nitrogen deposition in the spread and growth rate of gorse. This first quote is from a hill-farmer in his thirties describing the changes he has observed over the past 20 years or so.

As a kid I can remember we used to go up with a pickup up on Higher Down and you could look down into part of Doe Tor marsh and see the cows through a pair of binoculars and it

was always clear, you never had this diesel haze, whereas now you can hardly ever, you can't look down to Bude [40 miles away] you used to be able to look down to Bude from here and you could just see the coast, very rare you can ever do that the amount of nitrogen that is being put down in the rain yes, it is bound to make a difference. (Hill-farmer23-3)

This hill-farmer may not be specifically aware of the processes involved but is linking nitrogen deposition to the expansion of gorse.

Well they say it's the extra nitrogen is causing an awful lot of gorse (Hill-farmer3-2)

This hill-farmer has also noticed a difference in the growth of gorse but isn't sure what is causing the changes.

for instance gorse I think definitely loves it, when I was little gorse would die off in the winter and go brown, a stale colour and wouldn't thrive. It seems to thrive so much more now, and whether that is because of the atmosphere I'm not really sure but I get the feeling that sort of thing does thrive more now than it used to. (Hill-farmer9-2)

The next two quotes specifically link the changes in weather patterns, particularly the decline in severe winter weather to the vigour of gorse.

we aren't getting the frosts and I think that is affecting the gorse on the Common, I suspect the frost always checked the gorse and would in a very severe winter - '63 and times like that - it killed a lot of the gorse and some of the freezes didn't last as long, in the mid 70s you could see it was all burnt off, but even this past winter [several weeks of snow on the Commons] it is a tiny bit [burnt off] but it was nothing really compared to that and that's having a big effect. (Hill-farmer4-2)

I think also another factor on Dartmoor, which I don't know is ever mentioned, but we vary rarely get any prolonged severity in the winter, we may get the odd week or two but it is not enough and my stepfather used to say way back, that is why the gorse isn't being killed off, it needs a really sustained damage from frost or cold weather. (Hill-farmer15-2)

In 2019 whilst out on a walk with a DNPA Ranger I was told that over his career the height at which gorse grows on Hay Tor has increased and it is now found at higher altitudes and new areas, he speculated that this might have occurred as a result of milder winters and increasing temperatures (Rob Steemson DNPA Ranger pers comm).

A minority however do not believe that either atmospheric pollution and changes to winter weather as a result of climate change have impacted on the growth of gorse, they are adamant that the problems are caused by reduced stocking levels, the cessation of overwintering cattle and the scaling back of swaling regimes.

Noooooo it's more like because it's not flipping well grazed or burnt off enough (Hill-farmer26-3)

and

I would say it's more to do with the lack of stock up there, we've got half the stock up there we had (Hill-farmer16-3)

5.4.5. *Molinia* swaling on peat and the blanket bog

As discussed in chapter 4 the swaling of coarse grasses, particularly *Molinia*, to remove rank vegetation and produce a fresh bite for stock was a common practice during the “headage” days. *However*, following the commencement of the ESA any burning on peat soils deeper than 40cm was prohibited and as a result the burning of *Molinia* ceased as the majority of the *Molinia* dominated areas occurred on these deeper peats.

The rise to dominance of *Molinia* on many of Dartmoor's Common including the Forest of Dartmoor has had profound impacts for the ecology of the moor and for farming practices, as such it is the main topic in chapter 6.

5.4.6. Monbiot and swaling

Although swaling has been practiced on Dartmoor for centuries, if not millennia, as a way to improve farming productivity, in the past decade or so it has been criticised as an inappropriate management tool. The journalist and environmental campaigner George Monbiot has written a number of pieces in the Guardian criticising the practice, such as “Meet the conservationists who believe that burning is good for wildlife”(Monbiot 2016a). The particular concerns regarding this issue will be covered in chapter 6, but as it specifically relates to swaling and farming practices it is perhaps useful to finish this section on swaling with this quote.

fire is almost a dirty word for the last 20 years and it needs to be brought back in now as a management tool. We've all been frightened to use it whereas the old men in the past would have used it more regularly, but it's got to a stage now where we are almost too frightened to light that match because of how much could go. (Hill-farmer14-1)

Monbiot may have philosophical objections to the use of fire as a wildlife management tool as it, in his view, prejudices his “rewilding” agenda, it is also clear that one of the unintended consequences of the ESA scheme has been the enormous rise on the Common of Dartmoor of the “fuel load” as a result of the

spread of *Molinia* and the expansion in area and age of gorse. This issue will be addressed in more detail in chapter 6.

5.5. Impacts on the in-bye land

Prior to the ESA the in-bye land would have been predominantly used to produce fodder for stock when they were not on the Commons. The introduction of the ESA did not just impact on the Commons where the big changes were implemented – it has led to 2 major adjustments on the in-bye land. These can be summarised as follows: there was an intensification of the agricultural use of the in-bye and there was a major shift in the way that hill-farmers allocated their time between the in-bye and the Commons. The following sections look at these issues and their implications in more detail.

5.5.1. The intensification of in-bye land

Signing up to an ESA scheme meant that individual hill-farmers had to reduce stock number on the Commons, in many cases by 50% and in some case by 75%. Some hill-farmers ceased grazing the Commons at all and instead became non-active graziers – as such they were still eligible for payments under the ESA as they had helped to facilitate the overall reductions in stocking that the ESA prescriptions demanded and acting as such allowed other hill-farmers to maintain higher numbers on the Commons than would have otherwise been possible. However, sheep numbers across Dartmoor changed from 250,000 animals in 1996 to 240,000 by 2000 - a drop of 4% and by this point 80% of the Commons were in the ESA (Cons016). The vast majority of animals removed from the Commons were therefore taken to the in-bye areas (which were not in the ESA) and the land use there was intensified accordingly. This hill-farmer explains that animal numbers overall were cut but the way that the in-bye was farmed changed.

.... we had to cut big numbers, well, we had to change how we farmed, so I don't think we actually cut numbers but we had to start keeping things in, in the winter, we weren't allowed to have so many out on the common in the winter, which meant that we had to change how we farmed, so we were encouraged to change our calving times so they would be kept in in the winter, have their calves and then be put out in the spring (Hill-farmer15-1)

This hill-farmer describes the impact of this switch from the Commons to the in-bye and interestingly uses the word “over-grazing” which is unusual as normally,

Dartmoor hill-farmers flatly refuse to use the word because of its negative connotations with the peak grazing numbers.

... you just stay in your farmhouse and look after all the thousands of animals you've got over-grazing your in-bye ... (Hill-farmer24-3)

Here are the robust comments from a representative of the Dartmoor Commoners Council detailing how the prescriptions from the ESA on the Commons forced unintended and unfortunate consequences on the majority of Dartmoor's in-bye.

It's cheap farming, but the in-bye land is intensive, I mean our [meaning Dartmoor's] in-bye land is knackered, it's of very little ecological value and we've allowed that to happen at the expense of the Commons. So, the system that we have imposed on the Commons [i.e. the cessation of overwintering cattle on the Commons] requires a lot of grass to be cut and kept fed in the winter so they are hammering the land, they are putting tons of nitrogen on it, they are trying to get second cuts, possibly third cuts some of them, now that was unheard of 20 years ago, one cut was absolutely the thing. The system has completely destroyed hay meadows on Dartmoor. (Stat-body1)

In a Dartmoor context the intensification of the in-bye along with the reduction in its biodiversity is rarely debated and it has not been identified as an area of conservation concern. The focus has been exclusively on the Commons and their condition. Here, the same representative is questioning whether future policy ought to focus on restoring the in-bye. The clear implication of that notion is that changes to the way that the Commons are managed would need to be made which would allow the de-intensification of hay / silage making in the in-bye, i.e. a review of the cattle overwintering restrictions.

So, for me, the future benefit would be to address that, the in-bye land, not the Common land. That's where the ecological benefits could be accrued, that surrounding land, its completely screwed. The Commons are pretty robust and they could almost be left to their own devices and some of them might end up being slightly more overgrazed and some would be abandoned. (Stat-body1)

Not all of the in-bye fields on the Home Farms are used to produce fodder today. It is now not uncommon to find large flocks and herds of non-hill sheep and cattle on the farms around Dartmoor's Commons – I viewed this often on my Dartmoor walks for this research. The hill-sheep which were on the Commons pre-ESA days and have now had to be removed as a result of stock number reductions were initially kept on

the in-bye but these have now been replaced by faster growing lowland breeds. Again, such practices have intensified the land-use on the in-bye.

5.5.2. Allocation of time between the in-bye and the Commons

The intensification of the way that the in-bye is now managed has impacted on the way that hill-farmers allocate their time between the in-bye and the Commons. The following quote sums up the changes well.

For me with Dartmoor - and it's the same with most other people - pre-ESA all my farming, 80% of my farming enterprise was on Dartmoor so most of my time could be spent up there. Now it's more like 30% of my enterprise is on Dartmoor and the rest is here because we've had to drastically reduce what was up on the Commons we've changed what we've got to a more in-land system, so that's where their time and energy is going. (Hill-farmer7-1)

This hill-farmer, as well as detailing how his time has shifted from the Commons to the Home Farm also comments on how the pace of work has also now intensified, as there is now so much more to do.

going back 20 years ... there was more time, all the time now we're going 100mph, all the time trying to get everything done, time is a big factor these days. I love it on the moor, love it out there, spent the greater part of my life out there and I'd hate to have to give it up but it is time and the pressure of everything home here ... you're trying to keep pace with everything all the time. (Hill-farmer010)

This major reduction in time that hill-farmers are now spending on the Commons has implications for the way that the Commons are managed. Many, if not all of the basic shepherding tasks that need to be carried out will take the same amount of time to conduct whether there is a full quota of animals on the Common or just 50% of that number. The quote from this hill-farmer squarely blames the commonly seen phenomena of heavily grazed / overgrazed areas around many of the moor gates on a lack of appropriate shepherding.

... it is heavily grazed because it's easily accessible, most farmers will have a moor gate so they can turn stuff out. They've also got other pressures from farming in the in-bye land, so they don't spend so much time on the Common, so it's just put outside the moor gate and that's where it stays for the summer, and then they'll bring it back in again ready for the winter. (Hill-farmer14-2)

During my 80 or so visits to Dartmoor's Commons I was surprised at how few hill-farmers I saw during my walks – 6 encounters from over 500 hours on the Commons. During my interview with this hill-farmer we established that he was one

of the people that I had seen when he was checking his cattle with a colleague on their quad bikes. I asked him how much time a week he spent visiting his Commons when his stock was out.

Probably 10 hours and once we start calving in September it's a couple of hours a day I spend out there (Hill-farmer023-3)

When I asked him why he thought I had seen so few hill-farmers on the Commons he said this.

... they expect the money [from the agri-environment scheme] but they don't really want to go out and do anything for it, that's a lot of what it is ... (Hill-farmer023-3)

Such sentiments do apply to some hill-farmers but time is also a clear factor too.

We are all time poor and so Dartmoor [the Commons] actually starts to become a much lower priority and people are not going to spend the time out there keeping the animals in the right place. (Hill-farmer007)

The lack of time available to hill-farmers today compared to 20 years ago is having an impact on the maintenance of effective lears (referred to as hefts in the following quote).

I was talking to somebody this morning and they said about the hefting, the sheep and the cattle, I said it doesn't happen overnight, you got to go every day 2-3 times a day for 2-3 months and I'm afraid we just haven't got the time to put to it... we've got to at some stage but we haven't got the time to put to it. There's a time factor. (Hill-farmer10-1)

There are however clearly hill-farmers who are effectively shepherding their animals and as this quote indicates there are benefits regarding the condition of their animals. The implication here is that if you leave your stock on the overgrazed areas near the moor gates they will be in worse condition come the end of the season than the ones that have been pushed out to lears with better grazing.

.. every spring when we put the sheep and hoggs back out on the moor we just don't open the gate and expect them to go back to their lears and stay there, we have to physically go up there with the horses and drive those sheep or those hoggs back to their lears. Some days maybe 2 or 3 times a day go back up there and push those sheep back to their lears and the ones that come in from further out over are certainly the fitter, healthier sheep, so it is in our interests to push them out. (Hill-farmer016-3)

This official from NE also stresses the importance of effective shepherding to avoid over-grazing in some areas and under-grazing in others but there is clear uncertainty in his mind as to whether this is effectively being carried out.

... which is why there are areas that are over-grazed and areas which are under-grazed on the moors. Which comes back to shepherding, these animals need to be pushed around, they need to be moved around. I wouldn't like to comment on whether they are not there or they are up on the hill or not. I honestly don't know, you know, you assume that they are, that people are going to look at their animals and move them around on a regular basis.
(Cons008)

The effective monitoring of the agri-environment schemes will be discussed in chapter 7.4.5. and the issues of under-grazing and over-grazing will be covered in chapter 6.

5.6. The implications and impacts for Commons not in the ESA or other agri-environment schemes

The overwhelming reason that a Common has not signed up to an agri-environment scheme has been and is because the Commoners who have rights on that Common have been unable or unwilling to strike a compromise which will benefit them all collectively. In such circumstances the relationships between many of the Commoners becomes very bitter, acrimonious and intractable. The following quotes use examples from two different Commons and two hill-farmers, they have been anonymised in a different way from that used elsewhere as these issues are on-going as well as historic.

The following quote sets out that one individual is demanding an inequitable split of the agri-environment scheme monies. In addition, they have sufficient stock to be in a position to break the legally binding agri-environment scheme stocking levels even though they do not have the necessary rights to do this. The Schemes are administered on a Common-wide basis so that all the Commoners who have signed the agreement would be fined and might also lose some of their Basic Payment Scheme money as well, if the stocking levels were exceeded albeit by only one individual.

So we don't have an agri-environment agreement on our home Common because the Commoners can't reach agreement, as one person wants over 80% of the money even

though they only have 10% of the rights, but they have enough stock that it would jeopardize the agreement so we can't go into an agreement (Hill-farmer A)

As no agreement has been reached on this Common all the Commoners with rights are entitled to put stock on the Common but must ensure the overall stocking levels initially prescribed by EN are not breached. Such a position is open to bullying tactics as the following sets out.

... we put some sheep out last year with the lambs, the lambs were wormed they were treated for ticks and they were treated for fly and we had over a 50% loss, and that's not due to them not being looked after or looked at, they were lost by other things and that's probably other farmers coming and taking them. I won't be putting my stock out again because I can't afford those losses and we are getting dominance of a couple of Commoners in this area and they basically want to squeeze out everybody else and use the rights in full. (Hill-farmer A)

It is the fact that you have these few families and they are families, we know who they are, that are pushing out all the little people all the time, and they are seen as being these traditional families with these traditional skills, but, to me with rights come responsibilities, it's not using the Common as a shared place it's using it as an extension of their own farms and they are just pushing everyone out. (Hill-farmer A)

In this second example the quotes explain why an agreement cannot be reached in this case.

We are non-grazing commoners at this moment in time... The common is not in any agreements at the moment and that was because we weren't able to achieve consensus, just down to two individuals being bloody-minded and bloody greedy.

They pushed their luck, pushed their luck, pushed their luck, and they were told where to go. And that was the end of that. But unfortunately, you have got to do that, for next time when there is negotiation, if someone says no they mean no, and there is no sneaky deal behind closed doors, which I would suggest probably goes on and has gone on elsewhere.

I think greed is a terrible thing, and unfortunately economics will drive the change. And farmers react to the economic situation of the day. If those farmers can't make any money out of anywhere else they will comply with whatever is required to do that.

The financial situation ... if you can afford to turn down an agreement, farming can't be as bad as people are making out (Hill-farmer B)

One of the main reasons that some Commoners are in a position to turn down funding from the agri-environment schemes is that currently agricultural subsidy money is paid in two different ways – the Pillars 1 and 2 of the Common Agricultural Policy. The agri-environment schemes are in Pillar 2 whilst the Basic Payment

Scheme (which is calculated on the area of land you occupy) is in Pillar 1. Pillar 1 funding forms a greater proportion of an average hill-farmer's income accounting for high percentage of the Farm Business Income (Colston 2019). The recently enacted Agriculture Act 2020, sets out how BPS will be phased out incrementally over a 7 year period commencing in 2021 (Defra 2020) to be replaced by the "public money for public goods" principle. In order to qualify for these payments Commons currently not in a scheme will have to enter one or risk losing their entire subsidy payment which would make their businesses financially unviable. This is what hill-farmer B is alluding to in the last two paragraphs above.

5.7. Concluding remarks

The introduction of the prescriptions associated with the ESA have led to some significant changes to hill-farming practices. The reduction in stock numbers has led to lears being disrupted, the cessation of the overwintering of cattle, has made animals less hardy and in some cases has led to changes in stock type which are even less hardy, it has led to the construction of new cattle sheds and other farm infrastructure. Restrictions on swaling patterns has seen the encroachment of gorse on the drier areas of the moor and the expansion of *Molinia* in the wetter areas both of which have made shepherding more demanding. The introduction of strict stocking budgets has seen a reduction in the number of ponies on the moor. The changes have also led to profound changes in the way that the in-bye fields are managed, farming practices have become more intensive and as a result much more time is now spent managing these areas at the expense of high moor and the Commons. On some Commons the introduction of the ESA has intensified and driven hill-farmer conflicts as individuals argue and disagree about the allocation of the available funding. In some cases individual hill-farmers have abandoned their Commons and concentrated on their in-bye fields.

Whilst the changes in stocking numbers, spatially and temporarily have stopped the serious over-grazing issues described in chapter 4, there have been a series of unintended consequences to both farming practices and the habitats and ecology of the moor. The next chapter which focuses predominantly on the *Molinia* situation, discusses further some of the ecological changes and questions whether the agri-environment schemes of the last couple of decades have now produced an under-grazing issue which has seen the spatial increase of *Molinia* and gorse.

6. Attitudes towards *Molinia*: towards an under-grazing narrative

6.1. Introduction

When the ESA was introduced on Dartmoor in 1994, the focus for conservationists was on the decline of heather, particularly *Calluna vulgaris*. The restrictions on the overwintering of cattle and the general reduction in stock numbers were introduced to halt the declines of heather and the poaching of the peaty soils that was observed on the moor at the time. However, by the early 2000s the spread of rank areas of what appeared to be monocultures of *Molinia* was beginning to be of equal concern. *Molinia* appeared to be spreading into the wet heath and blanket bog areas on the Commons of Dartmoor. Today *Molinia* is a controversial species and this chapter looks at the various stakeholder attitudes to this upland grass. The chapter looks at various ideas as to why the species has spread so widely, why it is proving so difficult in certain areas to manage, the under-grazing narrative is introduced and a discussion is held to review what the future might hold as a result of the spread of *Molinia*. The under-grazing narrative is another counter narrative, this time challenging the over-grazing narrative. As will become apparent in this chapter and the rest of the thesis, the under-grazing narrative has not replaced the over-grazing narrative and is somewhat contested. Two examples are given where the spread of *Molinia* has been effectively halted and the moorland is returning to its former desired state.

Molinia is a perennial grass that occurs in a wide range of upland habitats particularly on moorland. It is an integral component of blanket and valley bogs and upland wet heath. In recent years it has been reported that the species is becoming “over-dominant” and as a result is having a detrimental impact on other plant species within the various plant communities where it occurs (Taylor et al 2001). Moorlands on Exmoor and Dartmoor have a very high *Molinia* frequency (95% and 75% respectively of total sward cover) and cover (85% and 53% of samples) when compared to moorlands in the Midlands and the North of England according to monitoring work carried out by Nature England (Glaves 2015).

Whereas the issues described in the previous chapter with the spread of gorse were predictable given that burning regimes restricted the areas that could be burnt at any one time, the emergence of *Molinia* as a dominant component of various plant

communities was unexpected. The next section examines the hill-farmers reaction to the spread of *Molinia* and the impact that this had on their farming practices.

6.2. Hill-farmers' attitudes towards *Molinia*

All the hill-farmers interviewed considered that the spread of *Molinia* since the mid 1990s was a bad thing and all of them blamed its rise on the stocking reductions, cessation of overwintering of cattle and the revised swaling prescriptions. This quote is typical of the views held by Dartmoor's hill-farmers.

*I think when the environmentalists came in and said stop grazing it should have been a managed withdraw, not that we stopped overnight, because the *Molinia* and everything has taken over and it has drowned out more than we had lost, the environmentalists have lost more than we ever did. (Hill-farmer1-1)*

This quote gives an indication of the extent of the areas affected, for example, it is 4.5km from Hanginstone Hill to Flat Tor.

*It is a mat, a colossal mat, especially from Hangingstone to Flat Tor Pan, all that Teignhead Valley, up the top of the Dart, that is just a mess of *Molinia*, (Hill-farmer14-1)*

This hill-farmer is strongly of the view that the problems developed during the first 10 years of the ESA.

*And after about 10 years of the ESA, a lot of the Commons were, in most farmers view, just a mess: *Molinia* and gorse - the heather we were promised was going to come back didn't really come back ... (Hill-farmer5-1)*

By the early 2000s all the hill-farmers interviewed considered that the ESA prescriptions were having an undesirable impact, particularly as it related to the *Molinia* growth. As a result, the hill-farmers' narrative altered again, the ESA prescriptions had not only impacted on their traditional management practices but they were responsible for the deterioration of the environmental conditions on the moor.

Molinia is only palatable to stock and cattle in particular between May and the end of July/ beginning of August (Taylor et al 2001). During that period, it is nutritious grazing as this ecologist from EN points out.

Molinia when it is fresh is almost as palatable as perennial rye grass [a high yielding, nutritious and palatable grass bred for grazing stock (Hubbard 1984)] ... and in fact, if you keep grazing the stuff you'll be able to keep it palatable right up to the middle of July and longer, (Cons3).

From the Medieval period up to the middle of the 20th century, the huge transhumance herds of summer grazing cattle, predominantly South Devon and Ruby Red Cattle, known as the Red Tides (Fox 2012) would have effectively grazed the vegetation including the *Molinia* which was a component of the various plant communities. As discussed in Chapter 5, the reduction in stock numbers and overwintering cattle led to areas of the moor which were under-grazed. The general impacts of these changes are discussed in section 2.2.3.3. but the following section highlights some of the impacts of these changes on the agricultural management of *Molinia*.

6.2.1. *Molinia*, cattle and sheep

The reduction in cattle numbers and the cessation of overwintering cattle on the Commons under the ESA was one of the factors which allowed the *Molinia* to increase into a “colossal mat” in many parts of the moor.

Today, it is evident that the cattle numbers available on the various home Commons and in the Forest of Dartmoor are only able to keep on top of the *Molinia* in certain areas. Many home Commons, particularly away from the moor gates, often have areas of under-grazed *Molinia* grassland alongside areas of *Molinia* grassland which have been adequately grazed. In the areas which have been grazed by cattle, sheep are able to get into the grassland and graze which reduced the grazing pressure on areas of sweet grass elsewhere on the Common. In the areas dominated by *Molinia* it is very unusual to see anything other than a handful of sheep.

Even though the *Molinia* is unpalatable by mid-summer, if cattle are present in the area they will graze the other grasses present and as a result break down the *Molinia* tussocks and open it up so that sheep can also access the non *Molinia* grazing as well. Where cattle are being kept on the Commons into the autumn their impact on the *Molinia* can be even more dramatic.

... having the cattle out in the late autumn, that's the only place they can go in, that's when they will go in the Purple Moor Grass and start pulling it around because cattle are non-selective graziers, they have to pull off the rubbish Purple Moor Grass to get at the protected shoots in underneath..... if the cattle don't go in there and open it up the sheep can't get in there (Hill-farmer7-3)

6.2.2. Gathering stock and *Molinia*

Throughout the hill-farming year cattle and sheep are taken off the moor and brought back to the in-bye land on a number of occasions so that, for example with regards to the sheep, ewes can be put to the ram, known as tugging, in the autumn; many flocks are brought into the in-bye land in late winter / early spring so that they can lamb; sheep need be shorn (have their fleeces removed) in the summer; sheep have to be removed by law from the moor for two weeks, as a means of reducing the tick born disease issues in the late autumn and of course lambs and ewes are removed from the Common so that they can be sent to market (usually in the autumn).

Cattle need to be collected from the Common to be mated with a bull, to calf and to be T.B. tested (sometimes every six months) and brought back to the home farms so that they can be overwintered in sheds.

This process of collecting herd and flocks of animals from the moor and bringing them back to their home farm in-bye land is known as gathering. Gathering is either carried out by individual hill-farmers or by a number of hill-farmers who have collective rights on that Common. Historically gathering was carried out on horseback assisted by sheep dogs but is now more commonly achieved using quad bikes and sheep dogs.

The gathering of flocks and herds of animals is one of the spectacles of moorland life but it is also an arduous task which requires considerable local knowledge and expertise so that safe river crossings for example can be utilised and all the stock out on the Commons can be successfully located.

Many of the Home Commons are close to the home farms and therefore the journeys are less extensive but for those who have stock in the Forest of Dartmoor long journeys are required. These quotes indicates the nature of the physical and mental challenges involved.

My brother does over 100miles on a quad bike one day, to gather one flock of our sheep, 100miles on a quad bike takes it out of you (Hill-farmer14-1)

It is just a mess of Molinia, and yes, we can only go certain directions now when we gather our sheep across that patch to try and get them through it (Hill-farmer14-1)

6.2.3. Quad bikes and Molinia

In addition to the physical challenges of riding quad bikes across *Molinia* dominated moorland it can be dangerous and very time consuming. There are many stories of hill-farmers having accidents in such terrain as these two quotes demonstrate.

... of course that's getting dangerous, riding quad bikes there; you don't stick to the same tracks and if you stick to the same tracks then you get erosion to cross it is quite treacherous, there have been a few people, broken legs, quad bike accidents; they've just jolly well been lucky to be alive really (Hill-farmer1-12)

there he was going through and the Molinia was up level with the carriers on the bike. Well you know what it is like. And he was shouting to the dog, took his eye off where he was going, but in amongst that Molinia was a rock and over he went. Anyway, he got back here and we were sorting out sheep and this arm he might as well not had it and it was about 4 or 5 days before it would do anything like normal. (Hill-farmer27-1)

This hill-farmer is talking about his small herd of Galloway cattle which he has rights for in the Forest of Dartmoor – once he has crossed his Home Common to get to the Forest he has to search a large area to simply find and then gather his stock. He is suggesting that the time spent dealing with just 15 animals is wholly disproportionate.

15 Galloway cattle, over that about 500 acres, you've seen what it's like, bouncing around. I reckon I've put a third of the hours or miles on my quad bike just looking for those 15. (Hill-farmer24-2)

Later in the interview he questions whether this is a sustainable activity and speculates whether he will continue to graze the Forest in the future as a result of the *Molinia* dominated nature of his land.

And I am looking at it saying "this is real touch and go, we are at this time in politics, the time of these agreements, they are all going to run out together, why am I doing it?" And that would be a shame especially as I have really pushed to get those cattle to stay there, I have spent a lot of time, and I am younger - not young but younger - but I am nearly abandoning it. And that's not a bluff, that's just me being businessman. (Hill-farmer24-2)

The reference to age is also important, the hill-farmer024 is in his late thirties whilst the hill-farmer14 is a man in his fifties. The *Molinia* dominated areas of moorland are making gathering very difficult on a quad bike and if the average age of farmers is currently 59 (Lobley et al 2019 p68) continues to rise it may become unsustainable in the more remote areas of Dartmoor.

6.2.4. Gathering stock on horseback and *Molinia*

Interestingly this hill-farmer is one of the few who, on occasion but not exclusively, uses a horse to gather stock and he comments how riding *Molinia* dominated Commons is easier on horseback.

A horse, you know in my mind in that rough terrain is a lot easier to ride than obviously a quad bike, the horse feels its way. They work hard but it is a lot easier on a horse (Hill-farmer16-3)

However, it takes longer to gather stock on horseback than it does using a quad bike and as discussed in chapter 5.4.2, time is now at a premium as hill-farmer efforts have focused more on work on the in-bye activities than on the Commons. This hill-farmer is keen to continue, at least on some occasions, using a horse to gather stock as it maintains the “tradition” but also notes that many of the younger generation of Dartmoor hill-farmers never learnt to ride and therefore cannot use horses.

6.2.5. Condition of sheep in *Molinia*

The increased areas of *Molinia* in some parts of the moor is impacting on the condition and productivity of the sheep that attempt to utilise those areas.

*... on those higher moorlands you'd have a lot more *Molinia*, whether it's due to all the nitrogen falling out the air, whether it is due to a higher temperature, I don't know, but it is definitely a problem and I find now we've got significantly less sheep on the Common than we used to have and those sheep are looking worse than the ones we had 15-20 years ago because these sheep have got less area to graze, sheep graze the short grass. The areas of short grass have just gotten less, the areas of long grass have gotten more, so you just have this massive thatch all over the moor that is not really generating anything (Hill-farmer21-1)*

6.2.6. Galloway crosses and the timing of grazing *Molinia*

Chapter 5.2.4. discussed how a number of Dartmoor hill-farmers have started crossing their Galloway cattle with larger breeds in an attempt to increase productivity and profit, but this has also impacted on the growth of the *Molinia*, as the cross-bred Galloways are less inclined to return to the Commons in mid-April as they often find the weather too inclement, and as a result some will not return until mid-May. This can prove significant as *Molinia* often begins growing in early May and is only palatable to cattle between May and July – as a result cross-bred Galloways miss the early part of the growing season and the areas of moorland dominated by *Molinia* deteriorate further.

6.2.7. Bovine TB and its impact on *Molinia*

Dartmoor falls within the “high risk” area for Bovine Tb in England ⁵¹ and therefore all cattle have to be tested every 12 months. In a Dartmoor context this usually occurs in January. However, if any cattle in a herd react to the test (i.e. they are deemed to have Bovine Tb) they are removed from the herd and slaughtered. Bovine Tb is frequently encountered within Dartmoor as this hill-farmer explains.

There are random outbreaks, no particular pattern, very, very few farms would not have had an outbreak of TB now. (Hill-farmer018)

However, the remainder of the herd (which did not react to the Tb test) needs to be re-tested within 60 days. In many cases but not all, the veterinary advice is that non-reactor cattle from an infected herd can return to the Common. However, they then need to be gathered and re-tested within 60 days. In some cases, these non-reactor cattle may be kept on the in-bye land instead of being returned to the Common so as to save time in gathering.

If herds repeatedly contain reactor cattle the unaffected cattle need to be re-tested every 60 days. My observations during my Commons’ visit did find lears where cattle would have been expected to be present, unoccupied as the herd in question was back at the home farm. On a number of occasions this occurred during the *Molinia* growing season when the grass was palatable. It seemed likely to me that Tb and the testing regime was impacting on some cattle herds’ ability to graze *Molinia* when it was palatable. As a result, the prevalence of Tb on Dartmoor was in some areas exacerbating the *Molinia* problem as instead of grazing the Commons and their *Molinia* the cattle were in sheds or the in-bye being fed silage.

This hill-farmer sums up the frustration of being not being able to put out cattle at the correct time to counter the *Molinia* growth because of TB restrictions.

If everyone turned out, but you can't do that anyway because you have TB restrictions and movements (Hill-farmer3-1)

6.2.8. Cattle in the Forest and lears

As discussed in Chapter 5.1 the reduction in stock numbers following the introduction of the ESA led to many lears being disrupted or broken. The sheer

⁵¹ <https://tbhub.co.uk/preventing-tb-breakdowns/bovine-tb-risk-map/>

numbers of animals in the various flocks and herds ensured that the lears were maintained and that animals didn't wander into other stock's lears. Once the overall number of animals reduced, there was no longer the pressure from the various flocks and herds to hold all the animals in their lears. This issue has proved to be particularly problematic for the Forest of Dartmoor. Whilst many of Dartmoor's Home Commons have large areas of *Molinia* dominated moorland the problem is most acute in the Forest where in places the *Molinia* community is very extensive.

These very extensive areas of *Molinia*, whilst palatable in May, June and July are nevertheless unappealing to cattle as they also include the un-grazed leaves of the grass from previous growing seasons. Historically the unbroken and well stocked lears would have held cattle herds in the *Molinia* areas in the Forest but now it is difficult to get the cattle to remain in these sub-optimal grazing areas so they drift down from the Forest back to the Home Commons where the grazing is more palatable. This quote from this hill-farmer which would be typical of all Forest Commoners explains the problem precisely.

...you've got the Forest in the middle, you've got the Home Commons [around the edges], everybody has had to reduce, what kept the Forest stock up there was the pressure from down here. You've reduced the pressure down here so they've just come back. And you can be up there day in day out driving them [back] onto the Forest and they will follow you home (Hill-farmer7-1)

This phenomenon is widespread around the higher parts of the Forest and is causing already under-grazed areas of *Molinia* dominated moorland to become even more rank, unpalatable and unappealing to cattle. In addition, with the cattle herds drifting from the Forest back to the Home Commons it is in places leading to the areas of sweeter grass on the Home Commons becoming overgrazed.

This has led to NE to call for the Commoners involved to increase their shepherding (which they are paid to do under the latest agri-environment scheme).

... are the animals being moved around enough to actually go and make sure they are grazing the Commons consistently, and are all the areas that should be, being grazed? So, are the right stock getting to the right places? Because they have signed up, the Commoners have signed up, to take that payment and manage this whole landscape, so that comes back to my comment, about whether animals are being shepherded around enough, and whether they are being moved around enough, to make sure that they go off and even if they are in that area for a day, they are trampling it, they are pushed back up into that area. (Cons008)

Such views are frequently countered by hill-farmers raising the implications for the welfare of their stock. This hill-farmer states the points passionately and these comments are shared by the majority of those grazing animals in the Forest.

... and you get this - you've got to go up every day and drive them off... what on earth do they think the welfare implications of doing that are? You cannot keep driving stock every day, its cruelty. Especially when you tell them you could kill them. There is no consideration of that when they tell you what you've got to do. But also, they'll tell you in the winter you've got to keep driving the sheep out into the middle. Those ewes are heavy in lamb, they're struggling, they are on a knife edge of survival, and you're saying you've got to run them every day, day in day out? It's totally no understanding of the animals. (Hill-farmer7-1)

These contrasting positions mean that it is difficult to see how this unsatisfactory situation (for both hill-farmers and NE) can be reconciled without further management interventions (this will be discussed in sections 7.3 & 7.4).

6.2.9. The 10 Tors Expedition and *Molinia*

Finally, in this section, the impact of the 10 Tors Expedition on the management of the *Molinia* dominated areas of the moor is discussed. 10 Tors is a 2-day navigation and endurance event organised by the British Army in early May for 2400 young people, aged between 13 and 19. The participants spend two days on the north moor visiting 10 different specified Tors, camp overnight and depending on age cover between 35 to 55 miles. The event begins and ends at Okehampton camp. The event also attracts many spectators / parents on the moor during the weekend. It has been suggested that because of the large number of participants along with the spectators (and their dogs) some Commoners in the north of the moor in areas where the event takes place are reticent about putting their animals out on the moor until after the event has taken place as they are concerned about potential disturbance incidents where cattle and sheep are driven from their lears accidentally to other parts of the Common / moor, stock worrying issues from free running dogs and potential accidents occurring when cattle interact with the participants.

These are the views of conservationist working on the moor.

It appears to me every year they put them back later and later and a lot don't put them back now until after Ten Tors so they have already missed a month or two of grazing because of that. (Cons013)

The implications of this are that stock is being held back from the Commons and kept on the in-bye land for longer to ensure that potential conflicts between moorland users and animals are minimised, as a result of the later release of cattle to the Commons a valuable part of the palatable *Molinia* grazing season is being missed, which is perhaps making the *Molinia* problem more acute.

6.3. Fuel load and wildfires

The reduction in stocking rates, the lack of cattle trampling in the autumn and winter and the prohibition of swaling on the deeper peats has meant that the season's new growth of *Molinia* is rarely grazed off effectively on extensive areas of the moor. Once into August the leaves of *Molinia* are no longer grazed by cattle and by the autumn they have turned to dried out light brown leaves – described as “raffia” by Mercer (2009). By the next spring the now dead leaves pose a serious combustion risk as they are now highly flammable. These areas of dense, un-grazed *Molinia* become progressively impenetrable to stock (and to people) as the years go by. It is this un-grazed *Molinia* that is then described by all Dartmoor's hill-farmers as an enormous “fuel load”.

All hill-farmers expressed considerable concerns that the fuel load would inevitably lead to wildfires. In 2018 an extensive wildfire occurred on Gidleigh Common on the north moor and in 2019 a very large wildfire took place on the south moor centred around Naker's Hill and Crane Hill and extended to over 500ha. Large wildfires like these cause a number of issues and problems. In the first instance a wildfire means that Commoners from across the moor need to be mobilised to work alongside the Fire Service to try and control and contain it, this is often very problematic as the location of wildfires are often remote and difficult to get to.

In the following spring on a *Molinia* dominated wildfire area there is an immediate flush of new vigorous nutritious growth which contrasts markedly with *Molinia* dominated areas which have not been burnt. As a result, cattle are drawn into the newly burnt area and avoid the unburnt stands of *Molinia*. Cattle herds can be drawn in from many miles away. For example, after the Gidleigh Common fires which took place in April 2018, I observed 5 different herds of Galloway cattle on the burnt area in addition to the herd of Galloways which were leared to Gidleigh Common. Such a large influx of several hundred cattle has various implications.

1. NE have concerns that the area in question will become over-grazed, poached and damaged.
2. As a result they request that the hill-farmers on whose Common the wildfire has occurred to shepherd the cattle who are not supposed to be there off their Common. However, this is not easy to achieve because almost as soon as they have been pushed off the Common (and back into rank unburnt *Molinia*) they repeatedly return to the burnt area.

Interviewer: There seem to be a lot of cattle on the Common, but you were telling me that they're not all yours?

Hill-farmer: Yes. Because we've got some coming in for the last month, and somebody in the family has been up most days to just try and keep it at bay.

Interviewer: But isn't that a bit soul destroying because you are just pushing them away and when you turn your back they are all going to come back in again?

B: Yes. But what else do you do? I don't know. (Hill-farmer8-1)

And this from another hill-farmer familiar with the problem of trying to drive cattle from palatable fresh growth *Molinia* back into unburnt under-grazed areas.

Well the animals won't go up there, there's nothing.. you can drive them up 'til your hearts content but they won't stay. (Hill-farmer7-1)

Not only is this shepherding / driving time consuming for the hill-farmer and ineffective concerns have been raised about animal welfare implications for the cattle.

and you've got to go up every day and drive them off... what on earth do they [NE] think the welfare implications of doing that are? You cannot keep driving stock every day, its cruelty, especially in summer, in this hot weather you could kill them. (Hill-farmer7-1)

3. The herds of cattle which are attracted to the newly burnt area are of course not then grazing on the Common where they are supposed to be. Whilst the cattle are leared to their Home Common or area of the Forest of Dartmoor the attraction of the new fresh growth *Molinia* in the newly burnt area is too great and draws them from their lear. That area therefore receives no grazing during the spring and early summer and as a result another season's un-grazed growth of *Molinia* occurs there and of course further increases the fire load.

4. There are also implications for several years after a wildfire as the cattle drawn into the area to graze it in the first year often produce grazing which is suitable for several years. As a result, cattle are drawn into the area for several years potentially exacerbating over-grazing problems in the burnt area, creating additional shepherding problems for the home Commoners and further under-grazing on the Commons where the drawn-in cattle are supposed to be.

Many of the hill-farmers interviewed said that to counter these problems small areas adjacent to wildfire sites need to be swaled in future years to provide new areas of fresh palatable grass in order to take the pressure off the initial area. However as many of the areas adjacent to wildfire sites are themselves dominated by many years of *Molinia* growth the fuel load is high and there is a reluctance and fear of burning in such areas in case the intended small burn accidentally gets out of control and leads to another much larger burnt area.

The following spring, it needs another patch [burnt], otherwise they will go back to that Gidleigh patch again, but then you got the logistics of trying to burn a patch on the Commons, it's a nightmare nowadays, especially on the Forest because everybody is afraid to light that match because if they can't control it, it could easily go from Okehampton down to Tavistock, so it is frightening to think of who wants to light that match, especially trying to get the right weather conditions and all the rest of it, it's not easy to try and get all this together. (Hill-farmer14-1)

Their fear in such situations is that if such a scenario was to occur NE would fine them even if the extra burns were accidental in nature.

It becomes almost impossible to burn on the Commons now there's so much fuel load there it is frightening, no-one wants to be responsible because we know we'll be fined if we get it wrong. (Hill-farmer1-1)

The situation is further complicated as much of the extensive areas of dominant *Molinia* occur on peat soils which are deeper than 40cm. NE (NE 2019) have issued guidance stating that restoration burning will only be consented “*where the bog has been successfully rewetted, Sphagnum is absent to occasional, and heather (or other species such as purple moor grass) are dominant (all these conditions would need to be met)*”. These are very difficult criteria to meet as hydrologically only 3.6 km² of Dartmoor's blanket bog is considered to be functionally intact out of a total of 315km² (Luscombe et al 2017), this represents less than 1.2% of the total. The

hydrological and rewetting issues and attitudes will be discussed further in section 8.2.

This inability to actively manage the *Molinia* in ways that hill-farmers would like to has led to frustrations and many of them feel that NE do not understand the practicalities of farming, as one hill-farmer said

the only way you keep them up there [cattle in the dense Molinia areas] is make that grazing as palatable as what's lower down (Hill-farmer7-1)

The prohibition of burning on areas where the peat is deeper than 40cm means that it is difficult, if not impossible to get cattle to graze in the ranker vegetation where there are areas of better grazing nearby, thus exacerbating the problems on over-grazing the areas of sweet grass and under-grazing the *Molinia* areas.

A number of hill-farmers who were interviewed and others with whom more casual conversations occurred have suggested “off the record” that perhaps some of the wildfires that have occurred over the past 25 years were in fact not “wild” and were started deliberately in order to try and improve the moorland grazing and reduce the *Molinia* areas. Indeed, there have been examples which I am aware of where EN withheld ESA payments because they considered that a specific fire had been started deliberately. In such cases it is all the signatories to the agreement, including the land owner who are docked payments.

6.4. Conservationists' attitudes to *Molinia*

An EN / NE Project Officer with many years' experience working on Dartmoor provided me with his detailed and nuanced perspective on the rise of *Molinia* following the introduction of the ESA. This is a summary of his account.

He gives a long term and historic perspective starting during the Medieval period when Dartmoor was very heavily grazed during the summer months by what he called “Widdicombe Sheep”, South Devon and Ruby Red cattle. This was the era of transhumance on Dartmoor which lasted until the end of the 19th century. The stock involved were able to graze off all the current year's growth by the sheer volume of animals involved. Vancouver (1808) described the moors of Dartmoor as the “best in the kingdom” and commented on the very large numbers of sheep and cattle grazing the Commons. The *Molinia* was present in the various plant communities but each

year it was grazed off as the transhumance animals arrived in May and left in September and ate it down.

This transhumance system was then replaced during the 20th century by the Galloways and Scotch black-faced sheep which were kept on the Commons all year round. This system which as has been discussed already was ideally suited to the prevailing subsidy system at the time, in addition this system also provided the necessary grazing pressure and trampling pressure to keep the *Molinia* under control.

He also suggests that *Molinia* is very well adapted to heavy grazing and swaling regimes, so when the era of headage came to an end the *Molinia* was already there having been suppressed by the grazing animals, with the dramatic reduction in grazing and burning pressure he suggested that

Being a graminoid it can respond within season whereas a dwarf shrub isn't going to be able to do that, so within a couple of years you had an enormous generation of purple moor grass.
(Cons002)

Heavy summer transhumance grazing controlled the *Molinia* historically and all-year round Galloway / Scotch black faces controlled the *Molinia* as well but also caused damage to the peat, plant communities and heather.

It is now not possible to go back to the transhumance days as people don't have the right type of stock in the correct numbers.

it's all very well to say - ok our management will be thousands of cows for three months in the summer when Molinia is at its peak, no-one wants to do that anymore, you simply can't expect them to do it. (Cons003)

Interestingly the interviewee goes on to suggest that the rise of *Molinia* is part of a cycle.

On the other hand I think that Molinia dominance, it's just part of a longer term cycle anyway, I don't believe that you would end up in some kind of stasis where you just have Molinia dominance forever and ever, I think it will take time for the habitat, new habitat, new vegetation communities, to evolve in response to the new management regimes and new farming practices, but they will; we don't know how long it will take but I'm sure they will.
(Cons003)

He then gives the example of the blanket bog to develop his argument further.

The Blanket bog is probably the best example, they've become very much drier as a result of all sorts of practices but burning and grazing would be chief among them. We stop doing that, it becomes very Molinia dominated, but I think over time I think that it will rewet itself, become more sphagnum dominated, but the sphagnum and the acidity and the wetness will suppress the Molinia. And that might take fifty years, might take even longer than that.

(Cons003)

He concludes by giving an insight into the discussions which took place between EN and the hill-farmers regarding the burning of *Molinia* on the blanket bog.

in response to pressure that I had put on them essentially, saying if the moor continues to burn like this then you'll end up with something that's not worth public investment. The agreement on the Forest which was where the blanket was, was worth a million pounds a year. Why should the public invest a million pounds a year in something that is declining and continuing to decline and without the management to stop it declining? And to be fair the farmers really took that on board and they've set up systems which mean that not only do they not burn themselves, when they used to, they also turn out to fight fires started by other people to protect that environment which earns them a lot of money at the end of the day.

(Cons003)

I also interviewed one of NE's ecologists who has worked nationally on upland habitats, including Dartmoor, in England for many years on his perspective on the *Molinia* "problem". He, of course, also acknowledged the reduction in grazing pressure had led to the increase in *Molinia* but he also suggested there were other drivers such as atmospheric nitrogen deposition which disproportionately favoured the *Molinia* as well.

He also shared a discussion he had recently been having with Dr. Richard Lindsay, a former peatland expert with the Chief Scientist's Directorate in the old Nature Conservancy Council and now an academic at East London University which can be summarised as follows.

The impact of regular burning on deep peat (the blanket bog) and shallower peat (the wet heath) and heavy grazing had changed the soil / peat structure through compaction and drying out.

so we have got a changed peat layer and usually Molinia is associated with lateral movement of water which is what you don't normally get a lot of that in more stable blanket bog situations, Richard Lindsey's views is that it's a temporary phase, that it's [Molinia] been released to attain high cover if not dominance, and that over time that dominance will decline and provided it's wet enough and Sphagnum species are present and other mire species

which I think they are on Dartmoor albeit not in the abundance we would like, but it will change back into more blanket mire type vegetation. (Cons005)

Both these conservationists are taking a long-term perspective on the *Molinia* issue and this differs somewhat from the day-to-day concerns that are currently expressed by the hill-farmers themselves, conservationists and others. It may take many years for the peat to recover from the previous management regimes and its recovery will perhaps be aided as it is shrouded in *Molinia*. As Conservationist 003 stated, the Forest of Dartmoor ESA agreements (along with the subsequent schemes) are paying for the restoration of the peat as much as for the restoration of the surface vegetation which may take decades to recover. Such an approach contrasts with the concerns around “favourable condition” and the Biodiversity 2020 targets. This longer-term perspective will also be important as conservation policy moves more towards an outcomes / payment by results approach as will be discussed in Chapter 12. The longer-term perspective allows many of the areas of the *Molinia* dominated areas to remain un/under-managed. The views of Conservationist 003 also suggest that in due course these areas will become wetter and develop into restored areas of blanket bog which will not need to be managed via grazing animals. It implies that those grazing animals which do remain can then focus on less remote areas where restoration is more effective and possible.

6.5. Hydrologists’ views on *Molinia*

Two professional hydrologists were interviewed as part of this research to determine their views on the rise of *Molinia* and how it might be managed in the future. Their perspectives add new dimensions to the overall debate. The rise of *Molinia* according to one hydrologist is not simply a function of excessive grazing and swaling followed by the severe curtailing of such practices, it an issue associated with the drying of the peat as a result of anthropogenic activities over the centuries

*... for hundreds of years we have altered the structure and function of the hydrology which has supported unfortunately, the increase in the dominance of this plant [*Molinia*] that likes to keep its feet a bit drier than the *Sphagnum* mosses (Hydrologist2)*

and

I think the underlying problem which we have to deal with is the structural functioning and change in hydrology that happened quite a long time ago, it hasn't happened overnight that we

have had Molinia dominance, it has no doubt accelerated since the vegetation hasn't been suppressed as much by swaling and grazing, (Hydrologist1)

The work carried out by this academic has shown a strong link between historic drainage activities and the current distribution of *Molinia* dominated landscapes.

if you look at our maps of where the linear ditches and the peat cuttings were, it seems to me there is a strong correlation with where the Molinia dominates, there is a strong correlation between where that is and where there is drainage. (Hydrologist1)

Commenting on the mapping work of Hydrologist 1 the other hydrologist notes

... it sets out where the peatland is damaged through gulleys, through ditches, through peat cutting, through erosion features; that exactly tells you the state of the peatland. It's not hydrologically functioning peatland as we recognise it, very, very far from it actually. (Hydrologist2)

In addition, this hydrologist refers to the role of post 1947 agricultural practices and atmospheric pollution.

So, the sheep have eaten the heather out which has led to Molinia, the burning has effectively damaged the vegetation which again leads to Molinia, and the nitrogen deposition favours Molinia, so the three together I would say, would be significant (Hydrologist2)

With regard to the future management of the *Molinia* dominated areas and attempts to reduce its dominance both the hydrologists focus on water table levels ahead of potential future grazing regimes.

if we don't want the very tussocky Molinia dominated landscape then the best thing we can do is bring those water tables up (Hydrologist1)

and

I think blocking the ditches up could solve some of the Molinia domination problems because Molinia doesn't like having permanent saturation, it just dies off effectively. (Hydrologist2)

It is important to try to understand why *Molinia* has become so dominant on some parts of the moor, the hydrologists, ecologists and hill-farmers clearly have views on this matter – the next section gives an overview of a range of the factors which may have been responsible, rather than attributing the issues to one or two factors.

6.6. What factors have led to the rise of *Molinia* on Dartmoor's Commons?

6.7.1. Introduction

As has already been set out in detail earlier in this chapter, the spread of *Molinia* has been caused by changes to the hydrological functioning of the peat, increased stocking levels and unsustainable swaling along with the reduction in sheep and cattle numbers. However, there are other factors which have also played a role in its spread and these are set out sections 6.7.2. to 6.7.5.

6.7.2. B.S.E. related issues

Bovine spongiform encephalopathy (BSE), frequently described as “mad cow disease”, affected British cattle herds between 1986 and 2001, peaking in 1993⁵². This disease of cattle led to policy changes and the introduction of the 30-month rule, whereby young animals had to be sold to market within 30 months of birth.

Historically cattle such as Galloways may have grazed the Commons for up to five years (Willing 2018), becoming larger and heavier animals capable of grazing higher quantities of vegetation as well as exerting a higher trampling pressure. These changes also reduced the grazing pressure on the *Molinia* dominated areas, particularly after the ESA had been introduced (Naomi Oakley pers comm).

This hill-farmer explains how the changes brought about by BSE led to them ultimately ceasing to farm cattle and led to an overall moorland wide reduction in the number of cattle.

I think the other big change for us as a moorland farm was BSE. So, we used to be able to keep our youngsters on to over 2.5 years [30 months] so, it's not like you fattened them but you allowed them to be slow growing. So, we not only had the 45 head of cows but we had their followers as well which sometimes would be 3 or 4years old before you sold them. BSE meant, they had to be finished before 2.5years, so that changed the industry really. If you are having moorland calves they are very slow growing and there is no way you can finish them in time, in 2.5years, in a place like this. So, you are forced to sell them as store calves, so we would have to sell anything we had in the autumn so that a lowland farm could basically fatten them up on cake. So that changed the industry a lot and I'm sure that has had an effect on cattle numbers on the moor (Hill-farmer15-2)

⁵² BSE Inquiry Report <https://webarchive.nationalarchives.gov.uk/20060802142310/http://www.bseinquiry.gov.uk/>

6.7.3. Foot and Mouth outbreak in 2001

The Foot and Mouth outbreak in 2001 impacted on the management of the moor in a number of ways. Firstly, many thousands of Dartmoor's animals were slaughtered and those that were not affected were removed from the Commons and as a result two years growth of vegetation was not grazed at all which allowed the *Molinia* to dominate further. This hill-farmer, affected by the Foot and Mouth crisis on Dartmoor explains the impact of the disease on the subsequent growth of *Molinia* on his Common.

After Foot and Mouth we lost all our stock so Molinia and the gorse got a real hold here on this farm. Molinia is a very insidious plant, if you give it an inch, it's off, it'll take a mile, and it takes a lot of winning back. (Hill-farmer17-1)

This hill-farmer from a different part of the moor also comments on the rapid changes in vegetation structure.

... we saw what happened during Foot and Mouth, with nobody walking up there and no stock up there, it was rapidly very overgrown. (Hill-farmer19-1)

Secondly, those hill-farmers who had lost their entire herds and flocks had to re-build and that took time. Here is the view of a conservationist who was intimately involved with the outbreak and its aftermath, concluding that stocking numbers on the moor after the Foot and Mouth outbreak were lower than before it.

I think also Foot and Mouth had quite an impact, but all those animals that were taken off the Commons, a lot of them never came back (Cons018)

This hill-farmer describes how the Foot and Mouth outbreak led to a neighbour losing their cattle herd – one which was never replaced.

.... they had cattle but Foot and Mouth did it for them ... so they couldn't manage the cattle. (Hill-farmer11-2)

This conservationist reflects on the Foot and Mouth crisis and its impact on the moorland vegetation after I had asked him whether he considered that the rise in *Molinia* dominance was caused by incorrect management prescriptions or the Foot and Mouth outbreak.

I think it's very difficult to separate that from Foot and Mouth, was that a consequence of Foot and Mouth rather than a consequence of agri-environment policy? I'm not sure really and I'm not sure when it happened, certainly Molinia was an issue when we were English Nature pre-Foot and Mouth, but it has expanded dramatically since hasn't it, no question. (Cons003)

6.7.4. The end of Headage payments in 2006

Whilst the policy domination of Headage Payments came to an end with the introduction of the ESA in 1995, headage payments for those animals still permitted on the moor continued until 2006. So, in effect between 1995 and 2006 hill-farmers on Dartmoor received agri-environmental money to reduce their stocking rates but also received a headage payment for the remaining stock. When headage payments ended and an area-based scheme (initially the Single Payment Scheme and more latterly the Basic Payment Scheme) was introduced many farmers took this opportunity to reduce their herds and flocks as keeping higher stocking numbers no longer attracted additional payments, thereby reducing the stocking rates further at a time when the *Molinia* dominance was increasing. This conservationist gives his perception of the situation.

They got rid of headage payment in 2006. There was a massive change after that because they weren't paid to put their stock up anymore so a lot of farmers took their stock off, and that's when you see that swing, I think between 2001 to 2006, we were at a good level, a balance for both the farmers and stock, there were enough out there to manage it and it wasn't being overgrazed, then suddenly in 2006 a lot of farmers have gone the other way, they've taken stock off and we had a situation between 2006 and 2011 where we were saying you've got to keep these numbers out because you are under-grazing (Cons016)

6.7.5. Atmospheric pollution and climate change

NE (2015) published a document entitled "Atmospheric nitrogen theme plan – developing a strategic approach for England's Natura 2000 sites". The plan reported that in England 80% of sensitive Special Areas of Conservation (SAC) and 70% of sensitive Special Protection Areas (SPA) are estimated to exceed the critical load for one or more of their protected features. This included the two moorland SACs on Dartmoor. Kirkham (2001) conducted a study on eight moorland sites including one on Dartmoor and found that the accumulation of nitrogen had changed a substantial proportion of the *Calluna* dominated uplands from nitrogen limited ecosystems into phosphorus limited ones. He suggested that this favoured *Molinia* as it was a species that was better adapted to phosphorus limitation.

Atmospheric carbon dioxide levels have risen from 320 ppm in 1960 to just over 400 ppm by 2015 (Carbon dioxide Information Analysis Centre, 2015). The history of research on photosynthesis and carbon dioxide suggests that these changes in

carbon dioxide levels would cause an immediate and significant stimulation of photosynthesis. Little is known about how *Molinia* responds to carbon dioxide but it is reasonable to speculate that the long-term growth response will be increased when nitrogen availability is enhanced (Franzaring et al., 2008).

Here are a couple of hill-farmer comments speculating on the connection between nitrogen deposition and *Molinia* growth.

I see fields that we don't fertilise and that we haven't fertilised for 15-20 years that are noticeably greener on the predominantly windward side of the hill which is the south west facing side. (Hill-farmer2-3)

*I think there is a *Molinia* / nitrogen thing, I think there is a relationship I am sure that extra nitrogen is something that favours *Molinia* because it is such an aggressive species dominating out everything else. (Hill-farmer2-2)*

Along with these comments from a professional hydrologist.

I would speculate that post-47 damage has been through over-stocking, significant overstocking and significant agri-burning. And atmospheric climate change as well (Hydrologist002)

The rise to dominance of *Molinia* in significant areas of Dartmoor is a complex issue and there are a number of factors involved. The weighting given to the factors involved depends to an extent on the support given by individuals to either the over-grazing or under-grazing narratives.

6.8. Getting to grips with the *Molinia* issue: two projects where progress is being made.

The *Molinia* issue on Dartmoor's Commons is very significant and this chapter has highlighted some of the reasons for the species' emergence as a dominant grass, it has also illustrated some of the challenges facing hill-farmers who are faced with a partially under-grazed landscape and trying to reduce its dominance. This section details two projects where progress is being made in reducing the dominance of *Molinia* so that a more diverse set of habitats including those with recovering heather populations can re-emerge. It should be noted that neither of these sites are Commons and are managed by sole tenants, the significance of this will also be discussed. One site is on Exmoor at Molland Moor and the other is a new-take at Bellever on Dartmoor.

6.8.1. Molland Moor

When I was working for the NT on Dartmoor I was aware of the Molland Moor project and how it was appearing to make progress with its *Molinia* “problem” and as result I visited the site as part of a management seminar organised by the Heather Trust on behalf of the owner, tenant and NE. I was at this point still firmly in the “over-grazing / over-swaling camp” i.e. these issues were the root of the problems in the uplands. Nevertheless, my visit to Molland undoubtedly was one of the key events that led me to research these issues further as it was clear to me that I didn’t really understand why Dartmoor’s Commons were in the state that they were. As part of this research I interviewed the owners of Molland Moor, their tenants and another Exmoor hill-farmer involved with the project. The following account of the Molland Moor experiment is based on those interviews.

Molland Moor which is enclosed and is 690ha in extent, was predominantly managed as a sheep moor with around 3000 animals and 100 cattle during the headage days. At the height of the headage era ring feeders were not used on the Moor and it was described as “extremely beautiful at the time”, (Exmoor1) - the beauty referring to the extensive areas of heather.

Prior to the introduction of the ESA there was a modest decline in heather populations but after the stock numbers were reduced, over-wintering was prohibited and the size of swaled areas was substantially reduced there was a “catastrophic decline in heather” (Exmoor1). For example, cattle were only allowed to graze the Moor between 15th May and the 15th July and swaled areas dropped from 25ha blocks to 2ha areas and as a result

The Molinia suddenly completely takes off but visibly to the eye, it's become a very Molinia dominated Moor and the heather is in decline. I think it was just a reduction of management both by match and by mouth really. (Exmoor1)

As a result of the decline in the condition of the Moor, the owner, together with the Heather Trust, Exmoor National Park Authority and NE worked to agree a new management regime for the area.

Well I think when I learnt that the stocking densities had all been determined by research up north, and you could visibly see that vegetation getting knee thigh high, I was quite grumpy really, I just felt that it was no good applying stuff from up north down here, it's very mild here,

probably a 30 day longer growing season and I kept saying well why can't we find out what's suitable for here rather than beating our head against the wall?

I mean I never believed the over-grazing on Exmoor story, I mean going back 20 years when everything Natural England were talking about was over-grazing, over-grazing, over-grazing and there were 2 or 3 holdings on Exmoor which were being over-grazed but I think I was very early to see farmers beginning to retreat from the moorland. (Exmoor1)

The plan was drawn up in 2010 and has been running ever since.

At the beginning it was really just putting cattle out in the winter at the beginning they were only out during the day and in at night, a lot of poaching around the field gates and very quickly Natural England decided that we didn't need to bring them in and out at night. (Exmoor001)

In 2018 there were 100 Galloway cattle with followers on the Moor and around 700 sheep. Additionally, some of the coarse areas of *Molinia* were treated with glyphosate and burning plots of up to 9ha were granted permission.

So, in effect your management regime is putting the Galloways up there, putting cobs where you want them to go, running alongside that doing some work with glyphosate and burning and grazing. And we've been given derogations to do 8-9 acre burns.

*So, we know how to get the heather back, you burn 3 bigish blocks in different parts of the Moor so they are not all close together and then the cattle will come in and they will hit the *Molinia* hard and the heather comes back really well*

*So, one of the important things about the burning is you germinate the heather seed, but also you clean all that *Molinia* thatch so the seedlings actually have some light and air to get away because that thatch, places it is 8 inches thick, no heather can layer or seed in that.*

So, one of the other misconceptions that people kept saying is that we can't have cattle out there in winter because they will pull the heather. I've been up there a lot, well, there is hardly any heather pulling, I watch these animals grazing there is hardly any heather pulling, so I think that the heather that they are nibbling away at, they don't kill it they just prune it. (Exmoor1)

The tenant farmers were also happy with the regime and the way that their cattle responded to the conditions.

*We have the cows out there all year round as such, that the cows do more good in the winter than they do in the summer. We've been doing some burning and just having the cows out in the winter that's when they hammer it hard we think and we go out with the quad bike with the stacker on the back and we feed them cow cob every day, 3 or 4 kilos a head a day roughly, try and feed that on the *Molinia* to try and get them rooting around*

We just use the cobs as a management tool really, just to help us move the cows around, try and keep them where we want them, where we want to graze fairly hard, it just helps us keep a good eye on them, gives a reason to be out there every day checking them. (Exmoor2)

One of the concerns raised in a Dartmoor context was that the cattle try to return home when bad weather sets in. The Molland experiment appears to demonstrate that the cattle can be re-trained to become hardy again in a relatively short period of time.

The moor cows want to be out there now they don't like coming in the shed. Well because they are out there all year around they haven't got a home. They don't know where home is. Well that is their home isn't it, they don't think. They are more happy up there than they would be in the sheds - 100%. (Exmoor2)

Molland Moor demonstrates that with the necessary derogations in place to allow the over-wintering of cattle and with swaling areas of around 10 acres and other interventions along with a committed owner and tenant farmers a *Molinia* dominated moor which had undergone a “catastrophic” decline in heather can be restored. I have seen it with my own eyes and the results have been monitored by Heather Trust (2020).

However, Molland Moor is not a Common with multiple commoners. It is also a completely enclosed area of moor, so stock cannot stray in from elsewhere or leave to graze other holdings. Additionally, the home farm is close to the moor so journey times to feed cattle cobs and check stock are in the desired area is less time consuming than if the moor was further afield and required travelling across other areas of moor to access it.

I asked the tenants at Molland whether they considered their regime could be conducted on a Dartmoor Common. The reputation of some of Dartmoor's Commoners go before them!

The big difference for us is there is only us on there, so there is no fighting and whatnot going on. In the winter if you can get the cows, where it's not overgrazed, that's when they will really do the good. It's being able to manage them and know where you got to be, and you know where they got to be. It goes back to just us I guess, it's not loads of different people up there moving animals around.

That's the only problem with Dartmoor isn't it - the people! You don't want to be feeding next door's cows. (Exmoor2)

Molland's tenants did concede that if a group of Commoners on Dartmoor were able to work together and co-ordinate their activities (such as winter cattle cob feeding),

whilst it would be more difficult than on an enclosed single occupancy site it would be possible to achieve.

Whilst what has been achieved at Molland Moor is hailed as a success by the Exmoor National Park Authority, NE and the Heather Trust, this view is not universal. In particular this hydrologist argues that the restoration of habitats back to a series of plant communities that were present when the area was designated as an SSSI is somewhat misleading.

... it doesn't ask the question- is this a functioning peatland system? It says does it look like a nice bit of dry heath or wet heath, and I do think there is a difference and that's part of the ongoing problem, unless you have learned what mires are, how they function and what makes a good quality mire for example, you just don't have that knowledge therefore you can't take that more objective view about... heather is good but actually what we are after is not heather, and certainly not Calluna, but cross leaved heath, you know. So, there's a much more nuanced story there than the Heather Trust would have you believe for example, saying Molland worked great, we got more heather, job done. (Hydrologist2)

6.8.2. Pony grazing at Bellever

The Dartmoor Pony Heritage Trust (DPHT), a charity which promotes the conservation of the Dartmoor Pony, leases 82ha of moorland known as Lakehead Hill from Forestry England adjacent to Bellever Forest in the middle of Dartmoor. The moorland is a new-take and as such it is fenced off from the adjacent common land and as a result the DPHT are the sole occupiers of the land. Since 2017, the DPHT in conjunction with researchers from the University of Plymouth have been studying the role that Dartmoor ponies can play in managing the moorland vegetation which at the start of the study was dominated by *Molinia*. Over the three-year study period an average of 20 ponies have grazed the Lakehead Hill new-take, 10 survey plots were sited in the area and in each an equine Himalayan Rock Salt block was located (Dartmoor Society 2020). The preliminary results indicated that the use of the salt blocks altered the behaviour of the ponies by attracting them into the survey plots where they grazed and trampled the vegetation. The sward height of the *Molinia* within these treatment plots were significantly shorter after three years of grazing than control areas where the salt blocks were absent. Additionally, the treatment areas had higher frequency of bare ground and a higher abundance of heather seedlings (Lunt et al in press).

Whilst this research has been on a limited scale in a controlled environment the results are encouraging and NE commented that the results “provide good evidence of the positive impact of pony grazing on *Molinia*”⁵³. These results support the findings of a literature review conducted on pony grazing on Dartmoor for the Dartmoor Pony Action Group which suggested that ponies may make a valuable contribution to cattle and sheep grazing especially in areas of wet heath, valley mire, gorse brakes and bracken dominated communities (Lake 2016)

Additionally, as “Dartmoor” ponies were used in this project they attracted the Higher Level Stewardship Native Breeds at Risk (NBAR) supplement, thereby countering the issues discussed in 5.3.3. where the number of ponies on the open moor have declined in recent years as they are considered of no economic value.

The issue of ponies on Dartmoor is a vexed one. It is important to note that “Dartmoor ponies” were used in this study because the area was fenced and therefore excluded other pony stallions which might have mated with them and therefore undermined the Dartmoor Pony breed specifications. Not all ponies on Dartmoor are pedigree Dartmoor Ponies, the vast majority of ponies found on the open moor on the Commons are Dartmoor Hill Ponies – they come in many colour types and are not pedigree animals and therefore do not attract the NBAR supplement. Ironically, the pedigree Dartmoor Pony, overseen by the Dartmoor Pony Society, was created in 1925 by crossing a “Dartmoor” pony with an Arab stallion. This cross is now considered the pedigree animal and the owners of such ponies keep them in their in-by fields or on new-takes to ensure that the pedigree breed standards are not tainted by non-pedigree animals. The Dartmoor Pony Heritage Trust ponies used in the Lakehead Hill research, even more confusingly, are not pedigree ponies either but are ponies selected from the moor which have the appearance, in size, colour and shape of the 1925 pedigree, despite this they do attract the NBAR supplement but are only allowed to breed with animals of similar looks (Joss Hibbs and Charlotte Faulkner pers comm).

This research indicates that ponies could have a positive role to play in reversing the dominance of *Molinia* on Dartmoor. However, at the present time the vast majority of ponies on the Commons of Dartmoor, where the *Molinia* problem is most acute do not attract a NBAR supplement and their numbers are declining. There are now less than

⁵³ <https://www.plymouth.ac.uk/news/research-suggests-dartmoors-ponies-could-play-a-critical-role-in-its-future-health>

1200 ponies on the Commons. The number of ponies on the moor at their peak is a contested figure, it has been claimed that there may have been 30,000 animals, but a figure of 10-15,000 ponies is probably more accurate (Charlotte Faulkner pers comm).

Recent research on Dartmoor Hill Ponies (the ones that live on Commons all year round) indicates that they can be distinguished genetically from the pedigrees, that they are genetically very diverse and that all the free-living ponies share a common genetic signature. They suggest therefore that the Dartmoor Hill Ponies are descendants of the original moorland animals who have lived on Dartmoor for thousands of years (Hegarty et al 2018). The Friends of the Dartmoor Hill Pony charity (FDHP) who commissioned this research assert therefore that the Dartmoor Hill Pony should be seen as a breed in its own right and they have been lobbying to ensure that these ponies are eligible for “public goods” payment in the forthcoming Environmental Land Management scheme currently being developed by Defra (FDHP 2018). At the time of writing the outcome of this submission is not known, however if there was a financial incentive for keeping Dartmoor Hill Ponies then it is possible that their numbers on the Commons might increase and using the research finding from the Lakehead Hill study might be encouraged via the use of salt blocks to target areas of over dominant *Molinia*.

6.9. Concluding remarks

This chapter has looked at the stakeholder attitudes, particularly those of hill-farmers, conservationists and hydrologists) towards the dramatic increase of *Molinia* in recent years. It shows how the spread of *Molinia* has impacted detrimentally on hill-farming practices and has increased the risk of wild fires. The conservationists suggest that the spread of *Molinia* was an inevitable consequence of previous eras of over-grazing and over burning, that the current *Molinia* situation is part of the healing process which in due course will be replaced by different moorland plant communities. The hydrologists argue that the *Molinia* dominance is the symptom of a deeper malaise on the moor – without addressing the issue of hydrological function which has been damaged by previous activities such as peat digging and unsustainable farming practices, then true restoration cannot occur.

The factors involved with the spread of *Molinia* in recent years are discussed and involve many factors such as hydrological damage, former unsustainable agricultural

practices and more recently the decline in cattle grazing, the impacts of the B.S.E. and Foot and Mouth outbreaks along with atmospheric pollution and climate change.

The final section looks at two separate projects where specific management interventions appear to have reduced the dominance of *Molinia* and benefitted other species. Whilst the over-grazing narrative, as typified by the era of headage payments, may have played a role in creating conditions suitable for the emergence of *Molinia* as the dominant vegetation type on many areas of the moor, today an under-grazing narrative dominates large areas of the Commons on Dartmoor. The next chapter looks at the various steps that are being taken to overcome the *Molinia* and other vegetational issues on the Commons as well as looking at some of the impediments to progress such as hill-farmer behaviours.

7. The Good, the Bad and the Ugly – the search for consensus

7.1. Introduction

As discussed in chapters 4 & 5, the first few years of the new agri-environment schemes on Dartmoor's Commons were dominated by conflict and contested policy decisions. By the mid-2000s great efforts were being made to find a consensus between hill-farmers and the conservation bodies. This chapter sets out and critiques the attitudes of the key stakeholders to these initiatives – it is a complex and nuanced period which exhibits positive developments alongside difficulties and downright bad practices – the good, the bad and the ugly.

The search for consensus was underpinned by three evolving DNPA led policy initiatives: The Moorland Vision, Dartmoor Farming Futures and the Our Common Cause project, these are described in section 7.2. These three initiatives aimed to provide clarity and empowerment to the hill-farming community whilst also facilitating the improvement of Dartmoor's landscape, wildlife and historic environment. These three pieces of work can be described as the “good”.

Implementing these projects, particularly Dartmoor Farming Futures, has proved complex, frustrating and, on occasion, counterproductive and disempowering to the hill-farmers involved. Additionally, I was told by some hill-farmers of various negative practices, such as failures to make serious attempts to implement the prescriptions set out in their agri-environmental schemes, by others within their community. These two issues constitute the “bad”.

Finally, I was told by a number of interviewees about serious cases of bullying amongst the hill-farming community along with a significant number of sheep rustling incidents: the “ugly”.

7.2. The Moorland Vision, Dartmoor Farming Futures and Our Common Cause

7.2.1. The Moorland Vision

Work carried out by the DNPA in 2005 investigated the problems that hill-farmers on Dartmoor's Commons felt they were facing. Concerns were expressed that the statutory bodies, specifically EN (now NE) and English Heritage (now named Historic England) did not have a shared vision of what Dartmoor should look like and as a result there was confusion amongst some hill-farmers about what land management

actions were required as they often received conflicting advice from the two bodies (DNPA 2020a).

This led to the development of the Dartmoor Moorland Vision (Waldon 2006). An initiative facilitated by the DNPA which involved a number of the relevant statutory bodies⁵⁴ interested in the management of moor. After much discussion a map was produced which detailed the desired natural habitats on the moor along with the creation of 14 Premier Archaeological Landscapes (PALs) - in the PALs management for the historic environment would take precedence. This initiative also gave clarity to the hill-farming community as it set out a pastoral vision for the moor – one which was underpinned by stock grazing (DNPA 2005). This National Park official reflected on the discussions that took place as the Vision was developed.

..... it was a frustration that we were hearing from the farming community about the way that things were being dealt with on the Commons. Differing organisations giving a different view about what it was they wanted to see delivered on the Commons, or that was the perception of the Commoners, and hence why we pulled together the Vision, so that there would be some clarity about what it was that all of the organisations wanted to see delivered so that they would be speaking with one voice. So yes, it was a frustration but I think it was more of a frustration being expressed by the Commoners and it was perhaps more of a perception than a reality in some ways. (Stat-body3)

This approach has been welcomed and implemented by the Statutory Bodies mentioned above. However, this too has created controversy, for example the landowners of the PAL Commons concerned were not consulted on these proposals and were not consulted either when the grazing pressures were increased to benefit the historic landscape. In the case of the NT's Willing Walls and Hen Tor property the PAL covers less than 20% of the Common but the increased grazing pressure applies to the entirety (my own experience). There are other Commons on Dartmoor with PALs where the owners are particularly concerned about the impact on wildlife of the increased grazing pressures (Kevin Cox – owner of part of Holne Moor and Richard Hurrell – owner of Ugborough Common pers comm).

Ecologists talked of over-grazing in the uplands whilst archaeologists were concerned about under-grazing - it all depends on what exactly you want a given landscape to look like and why. The PAL designation was an attempt to provide

⁵⁴ Dartmoor Commoners Council, English Nature (now Natural England), English Heritage (now Historic England), The Defence Estates, The Duchy of Cornwall and the Rural Development Service

clarity but it was a blunt instrument which some key non-statutory stakeholders have yet to fully embrace.

Following the introduction of the agri-environment schemes in the 1990s stocking numbers on the Commons began to decrease, restrictions were put on overall numbers and in many cases winter grazing was stopped. Unfortunately, despite the detailed management prescriptions from the scientists at NE the Commons failed to recover – the heather continued to decline and unpalatable purple moor grass spread. Relations between the hill-farmers and ecologists dropped to an all-time low, stocking numbers had decreased but it appeared the science wasn't to be trusted. A new approach was needed to rebuild trust between the various disgruntled parties.

7.2.2. Dartmoor Farming Futures

This new approach was known as Dartmoor Farming Futures (DFF) (Waldon 2011). The DNPA summarises the project as follows (Manning 2017 p6).

Dartmoor Farming Futures is an experimental pilot project aimed at developing a new approach to the management of the public and environmental benefits associated with Dartmoor's moorland that:

- *Offers farmers and landowners more responsibility for the design and delivery of agri-environment schemes;*
- *Focuses on the complete range of public benefits (ecosystem services) that are associated with upland farming (from food production to carbon sequestration) and identifies priorities for particular spatial areas; and*
- *Facilitates a collaborative approach to agreeing the outcomes sought, delivering the management required and assisting with the monitoring of the process.*

The initiative was developed by Dartmoor National Park Authority and Dartmoor Commoners' Council with support from the Duchy of Cornwall, Natural England, Royal Society for Protection of Birds, South West Water and the Ministry of Defence. The pilot resulted from a proposal to Defra in 2010 and is being run on two areas of common land: Haytor and Bagtor and the Forest of Dartmoor.

Farming Futures links into and complements the Dartmoor Vision, a shared vision developed with landowners and users which sets out what the moorland will look like in 2030. As part of the work on Farming Futures the original Dartmoor Vision was updated to include valued access, stored carbon and water resources.

An evaluation of the pilot was undertaken which looks at the impact of DFF on hill-farmers' behaviours, perceptions and farm businesses (Manning 2017). The Forest

of Dartmoor pilot covers 11,170ha and the agri-environment scheme which involves 80 active Commoners focuses on the ecological elements of the area. Manning (2017 p31) concluded that the evaluation has provided evidence that DFF

... is resulting in commoners having a greater understanding of what agri-environment schemes are looking to achieve and the outcomes that they are delivering. Commoners are showing an increased awareness and knowledge of the key species, habitats and archaeological features that can be found on their common. Participation with training and monitoring plays an important role in increasing their understanding and the subsequent empowerment to take control of the management. Commoners are increasingly recognising their role as land managers, not only for livestock production but for the production of ecosystem services and have a better understanding of the impacts that their management decisions have for the production of these services.

The DNPA are concluding here that by empowering hill-farmers and encouraging their local knowledge the chances of achieving sustainable management on the Commons are enhanced.

7.2.3. Our Common Cause

Our Common Cause: Our Upland Commons, was set up by the Foundation for Common Land (FCL) and the NT. It is part-funded by the Heritage Lottery Fund. The project aims to

“conserve and enhance the heritage of Commons and commoning in upland England, working in the Lake District, Dartmoor, the Yorkshire Dales and Shropshire Hills.

It will directly improve the management of almost 30,000ha of upland common, including many fragile ecosystems, and will bring people together.

The project has four central aims:

- Secure and support collaborative management of Common Land;
- Ensure that the health of commons is secured by supporting resilient commoning in a fast-changing world;
- Reconnect the public with the natural and cultural heritage of Common Land;
- Enhance the environmental and ecological benefits offered by Common Land”

(FCL 2018)

On Dartmoor, the DNPA is the lead co-ordinator and three Commons were selected for inclusion in the project; these are Holne Common, Harford and Ugborough Common, and Bridestowe and Sourton Common. This project began whilst I was conducting my interviews and is currently ongoing but has now been halted as a

result of the Covid-19 pandemic. One of the key outcomes from the project is the production of stakeholder-led collaborative management plans for the three Commons which aim to deliver environmental benefits such as biodiversity conservation and enhancement along with the preservation of the historic landscape whilst also promoting and protecting the hill-farming culture of the Commons.

7.2.4. The Dominant Policy Narrative for Dartmoor's Commons – Pastoralism: hill-farmers at the core

The Moorland Vision places pastoralism at the heart of the management regime for Dartmoor's Commons and defines how the needs of wildlife and the historic landscape can be balanced, Dartmoor Farming Futures empowers the hill-farming community by encouraging them to experiment with different management prescriptions, urging them to use their local knowledge to improve the condition of the Commons, compared to the ones set out by NE and Our Common Cause brings the visioning and management prescriptions down to a local Commons wide scale, by using a collaborative stakeholder approach.

These three policy / project initiatives led by the DNPA form the Dominant Policy Narrative with regards to the management of Dartmoor's Commons. As we will see in the Re-wilding chapter, this Narrative is being challenged both by re-wilding conservationists and by Defra, nevertheless, despite pressures appearing which require some flexibility to this approach it is still the dominant narrative – a grazed landscape with hill-farmers at its core.

The remainder of this chapter explores how this Dominant Policy Narrative has been received by the various stakeholder groups and how it has developed and been enacted in practice.

7.3. The search for consensus: the good

7.3.1. Policy makers and landowner views

Asked whether the Moorland Vision approach was being changed in light of the problems that had been encountered over the past decade or so and detailed in detailed in section 7.4, this senior Officer in the DNPA stated

I think what we are doing with the Vision at the moment is looking at reviewing it, seeing what impact it has had, what evidence we have that it is actually delivering, and the Vision has provided a framework for other initiatives; so its provided a framework for Farming Futures,

and it also provides a framework for the Common Cause work, bringing interested parties together to see if you can get to that common ground, at a common level. I think the vision is still very much there. (Stat-body3)

The Moorland Vision had been welcomed by hill-farmers, as the following quote illustrates but it was becoming clear even by 2010 that on its own it was not going to deliver the changes needed.

So, the genesis for the Farming Futures came from a “thank you” event for the farming community to celebrate the Moorland Vision work and the time they had put into that. So it was an evening meeting, and I was relatively new in post at the time, and we had a group of farmers who had been heavily engaged in the Moorland Vision, and it was an informal discussion, and then they started to say well, the Moorland Vision is great because actually we have clarity, but what we are not getting is the tools to deliver it, because the agri-environment schemes are still telling us what to do, they are not giving us any flexibility, they are very prescriptive.

So you are disenfranchising people and Farming Futures was an attempt to bring back local knowledge and skills that are really important, we want you to apply that in delivering environmental outcomes. And take a pride in doing that, and over time try and build a bit of that competitive spirit that often exists in commoners; their lea is better, their stock is better, well maybe some of the outcomes they are delivering in this area are better. (Stat-body2)

Haytor and Bagtor Common is one of the two Commons in the DFF Trial. It is one of Dartmoor’s Home Commons, is 554 ha. in extent and the majority of it is owned by the DNPA. In my opinion, having visited the site many times, it is in good condition, for example, it has varied habitats and does not contain extensive areas of under-grazed *Molinia*. This DNPA Officer commented that the change in behaviour and management practices implemented had not changed a great deal after the Common entered the DFF Trial.

If I'm being honest on Haytor, I'm not convinced that they have really bought into it as much as we wanted. And that might be because actually on Haytor the perception was that they were already doing some of this, maybe because of us as landowner we had already worked with them so they didn't see it as dramatic change, they had those flexibilities. (Stat-body2)

And asked whether the DNPA considered that DFF was seeing practical and demonstrable improvements on the ground on Haytor and Bagtor Common and the Forest of Dartmoor, this was the reply.

I mean Farming Futures is now in 5th year? Would we really see a big change on the ground? (Stat-body002)

For the DNPA, the process of empowering hill-farmers and instilling trust was as important as practical outcomes on the ground which in all likelihood would take many years to be delivered.

In a similar vein, this major landowner welcomed and supported the DFF initiative, especially with regards to building better relationships with hill-farmers. He also pointed out that both pilot Commons were relying on pre-existing Higher Level Stewardship agri-environmental schemes opposed to specific DFF arrangements.

I think it is going well in terms of regaining trust among the farmers and gleaning their ideas in terms of what they would like to see and how they would like to deliver on it, I think the big gaps are in the fact that effectively on both pilot areas they are relying on existing HLS agreements as being the platform and there is no formal contract around the Farming Futures project or the principles that are attached to it.

I felt with Farming Futures it is a good example of how through a bit more empowerment you can encourage and incentivise people and it's not just about putting more money in their pocket because they are getting that buy in, that mental stimulation about thinking about how they can have a positive impact through their farming on the environment, where we went through a period where Natural England had been pretty bad at their communication and looking at what is going wrong, not what is going well. (DoC1)

7.3.2. Positive hill-farmer views on Farming Futures

The Dartmoor Farming Futures Trial applies to two specific Commons, no Commoners were interviewed for this research who were involved with Haytor and Bagtor Common but around half of those interviewed had had some involvement with the Forest of Dartmoor trial, either as active graziers or non-active graziers. The following two sets of hill-farmer comments relate to their novel approaches to attempting to manage the dense areas of ungrazed *Molinia*. It should be noted that both these hill-farmers on account of the geography of their farms had main roads running through their lears on the Common which made access with machinery possible, this situation is not the norm as most lears are remote and access to them is only possible by traversing Home Commons which makes vehicular access other than by quad bike challenging.

If we could lead the stock into it [the Molinia] they probably would graze it. What we've done under Farming Futures, I have looked at this and thought well I need to be on the lear where

my cows stay, they are pretty good, they stay quite close to home so they are quite easy to attend to. They are probably running on about 300 acres so we've created cattle tracks, mechanically cut, which also double up as firebreaks.

So, concerned about the amount of vegetation, non-penetration of it, we tried increasing the cattle numbers to see if they would push in but they still weren't, so now we have flailed it down, created paths that are about 30ft wide so we aren't expecting everything to follow the same 3ft width of path and make erosion issues, but by creating a wider path you also create a little bit of fresh growth and an enticement for the animals to follow that and go into the heart of it. And what I've found is that where they are able to go off those cattle tracks we have made into the wider vegetation they do. Otherwise they wouldn't have got that far because they wouldn't be able to, but because there is effectively a road – it's a defined place they can follow

And they will look for exits off that where there is less vegetation to lead them into other areas where there is more vegetation, so we've noticed the grazing is much better, much more uniform. For the first year we put in the tracks and some firebreaks, the second phase of that is there is another area that we just intend to mechanically clear, an area that was burnt previously, swaled off around 15 years but the growth has continually come back to the point now the animals don't find it sweet, they won't eat that. And I don't want to burn that again, I don't think swaling is necessarily the best measure.

We are talking about Molinia and gorse mixed with a small amount of heather but very small, being stifled out all the time by the Molinia. So rather than swale it and take it right down to black ground again I just want to take it down to what would be a sward height really, maybe 2 or 3 inches, 4 inches, something like that, and see if that takes the cattle back onto it and if they will graze that. (Hill-farmer18-3⁵⁵)

Historically (i.e. during the Headage Days) areas of rank grass such as *Molinia* would have been burnt off via widespread swaling operations, but such practices have been prohibited and where they are permitted are conducted on much smaller areas. Hill-farmer18 has attempted to resolve the problems of *Molinia* via mechanical cutting and grazing opposed to swaling but as will be seen in the next section there are those who still want to experiment with burning *Molinia*.

Another hill-farmer commenting on the experiments described above, said that the cutting worked but also noted that the cattle were being left out longer into the autumn than would have been permitted if the Common was not part of the DFF trial.

⁵⁵ I have ascribed all the hill-farmer comments in this section as 3- minority view, simply because they describe one off experiments. Their views might be more widely held but I have no evidence of that.

*I don't know if you've been through the *** area over there on ** part of the forest, [the hill-farmer] was over there doing that, he was leaving his South Devons out longer, and he's also cutting patches so he can encourage animals to graze the Molinia but that's an accessible part of the forest, you have a main road right through it, other parts it's not quite so easy to do that policy, but hopefully those cattle, leaving them out longer will have an effect on that vegetation. (Hill-farmer14-3)*

This hill-farmer has swaled areas of *Molinia* on shallow peat (<40cm), he has burnt two areas on different parts of his lea.

But the beauty of having those two areas burnt was the cattle wandered from one to the other, and when they wander from one to other, they graze, they trample and they grazed and opened it all up. And far from that being it - my sheep got a whole lot better because all of a sudden, they weren't thrust to the bare bits around the outside, they followed the cows and they opened it up more.

*Well if we throw our hands up in horror and say "well nothing can be done about it", we are doing a great disservice to the old guys that ran it before us. So, I've seen *** go down and I've seen it improved, and I know that I got the technology and the ability to do it, and so have the other people that you've spoken to. (Hill-farmer17-3)*

Interestingly, these three examples and one other (small fenced enclosures to encourage heather regrowth) were the only successful experiments that I was told about during my interviews apart from the more generic ones I detail in the next section.

7.4. The Search for Consensus: the bad

This section looks at the theory of what DFF potentially offers compared to the actual practices experienced on the ground by hill-farmers- the interviews were conducted around 5 years into the trial period and the majority of what is written applied especially to the Forest of Dartmoor, unless otherwise stated. The following subsections will discuss hill-farmer ambition, hill-farmers' local knowledge, the bureaucracy around getting new initiatives approved, and complexities arising because the land in question is a Common with multiple "occupiers" along with issues of some hill-farmers not delivering what is expected of them.

7.4.1. Hill-farmer ambition

The following series of quotes express a frustration at the lack of ambition and new initiatives put forward by the hill-farmers involved, flowing from the freedoms potentially offered by the DFF's approach.

So, on the Forest they've had the shackles removed, what have they done? Bugger all. If anything, they have probably done less, there hasn't been this massive rush to increase stock as it doesn't pay. At the moment they are running stock at 10% below what they are allowed to...why aren't they stocking up to their absolute limit? Because they don't make any money on it. Nobody has really put in for a big massive increase in animals. Nobody has experimented with cobs in the winter. So, it is interesting and these were things that before we got the consents to do this, these farmers were telling us that this is what they intended to do. So, I would say I am very disappointed by the lack of any real new initiative. ... and what they are doing is they are applying to do things that are tinkering with it rather than adopting a completely revolutionary new stance and that is really disappointing and is that because they are scared to do it because there might be a financial penalty if they get it wrong. The times we've had to write letters saying "there is no penalty this is a trial", Defra will not penalise you if you screw up (Stat-body1)

This account of the situation and lack of ambition differs markedly from the accounts of the bureaucratic challenges and consent refusals outlined in 7.4.3. These issues will be discussed in that section.

This hill-farmer comments on the marketing of DFF along with the choice of Commons included in the trial.

I think it's a triumph of publicity over substance. I think it could have been great, I would have expected them to be an awful lot more inventive. Some people have tried it and they've tried pushing the envelope and seeing what they could do. I think that it is all down to a couple of people, charismatic people, showing leadership and I think that's fantastic.

I think that Haytor and Bagtor is a vanity project personally because its owned by the National Park and they wanted a National Park Common so that they could have that involvement but they didn't choose Holne because that's contentious and its difficult. Holne would have been a much better Common to choose because it's got so many more issues. (Hill-farmer2-3)

The implication here is that the DNPA were not being ambitious enough as they choose a Common they owned where issues were minimal opposed to the other Common they owned where there were more problems and conflict.

7.4.2. Local knowledge

A number of hill-farmers commented on how after being "told what to do" for 25 years some either didn't feel empowered or were unsure what to actually do.

Since, we've had this, since the 90s, so that is coming up for 30 years, that is a whole generation. So, the new generation have lost some of the old ways because were not allowed to do it, we have been stopped from doing so many things so the next generation

hasn't really got the knowledge unfortunately, even under the Farming Futures in the Forest because for so many years we have been stopped doing things, people just aren't coming out with what they want to do. They can't seem to grasp that we can come forward with things it's been so long. They just haven't grasped that there is some empowerment there for the farmer (Hill-farmer1-3)

Some farmers have been a bit slow with actually getting on board with it, with Farming Futures, 20 years of prescriptions being banged at them, to have a completely blank bit of paper has been a bit of a shock really so they've been a bit slow at coming forward with ideas. (Hill-farmer14-3)

But some of the guys that you are talking to, if you actually look at what their grandfathers might have done, but their fathers and them have never had to face anything that's like this ...they're in a mess and they don't know where to start. (Hill-farmer017-3)

7.4.3. Bureaucracy and getting schemes approved

Within the Forest, two key restoration issues (along with the re-wetting of the blanket bog which is discussed in Chapter 9) which DFF schemes are trying to address are

1. modifying the extensive areas of ungrazed or under-grazed *Molinia* stands so that they are accessible and palatable to cattle
2. ensuring sufficient numbers of cattle are attracted into these areas to graze them thereby allowing sheep access to these pastures thus reducing the sheep's impact on the diminishing and therefore often over-grazed areas of "sweet grass".

As discussed in chapter 6, getting cattle to graze in extensive areas of rank grassland is difficult as the animals much prefer to feed in areas of better grazing and as a result the DFF trial in the Forest has looked at various ways to make these areas more attractive to cattle. One of the big issues is that many of the areas of extensive *Molinia* are on areas of deep peat (>40cm). According to a number of hill-farmers interviewed it has become increasingly difficult to get consent to burn off areas of old *Molinia* so that new fresh growth is accessible. Part of the problem appears to be a perception by a number of hill-farmers that key NE officers are unwilling to grant consent for new swaling schemes when in the past under different NE staff they would have been granted, this, despite the fact that NE have a national policy which restricts burning on peat soils greater than 40cm in depth unless a number of restoration conditions are met (NE 2019), as previously discussed in chapter 6.4. and discussed again in the following paragraphs.

... so that burn has now been turned down, we aren't allowed to do it anymore... it's everything I put in basically gets turned down and I've then got to really argue it to get it agreed, yes, I can argue it and get it allowed but it's what I've got to put into doing it and that's not what it's supposed to be about, this is supposed to be trust. But I'm afraid we've gone back to the start of the ESA with no trust, I'm finding it really frustrating (Hill-farmer7-2)

This is a difficult problem - the widespread burning on blanket bog caused damage and many of the problems which led to the introduction of the ESA. In Chapter 6, I argue that partly as a result of the reductions in cattle numbers and the cessation of autumnal grazing by cattle on the Commons this has allowed the extensive areas of *Molinia* now seen to develop. The frustrations caused by this under-grazing, the emergence of the *Molinia* “jungle” with its enhanced fire load was one of the key reasons for the development of the DFF project. The hill-farmers find themselves in a Catch 22 situation, in order to restore the *Molinia* “jungle” they need to remove the previous years of tussocky growth and “raffia” so it can be accessed by cattle and can be effectively grazed, however the practical means of removing previous years of growth, i.e. burning, is no longer permitted. NE’s position statement on “Burning as a tool for the restoration of upland blanket bog” states

“burning for restoration may be effective where the bog has been successfully rewetted, Sphagnum is absent to occasional and heather (or other species such as purple moor grass) are dominant (all these conditions would need to be met.” (NE 2019 p1)

Burning on blanket bog on SSSIs had become more contested in recent years as it is associated with grouse moor management in the north of England and NE is doing what it can to reduce its prevalence and its impact, thus the publication of the new NE Position Statement has potentially impacted on its localized use on Dartmoor to reduce the *Molinia* thatch (M. Winter pers comm)

As will be discussed in the chapter on re-wetting, restoring blanket bog is expensive and as a result will have to be targeted with perhaps as little as 20% ultimately being restored. The sense of this conundrum is further deepened as the hill-farmers perceive that DFF was supposed to free them up and empower them to carry out restorative management.

But with the Farming Futures we are supposed to be able to manage it how we want to, to deliver the outcomes but the trouble is so much up on the Forest where the Molinia is that it's also on deep peat so they don't want you to burn on deep peat. With Farming Futures we're supposed to be able to, I mean the HLS was brought in, that was meant to be far more

flexible, but actually it's ended up equally as bad as the ESA and far more complex, people have got a lot less understanding of what they are supposed to be doing. (Hill-farmer7-1)

Despite the frustrations caused by the rejected consents to burn on the deeper peat areas, hill-farmers are aware of the possible damage that such activities might cause and as a result have been exploring “cold day / frost burn days” but this too has not been consented.

... what I wanted to try was burning when it's really cold, when everything, the ground is frozen. Bit dry, tops are dry, and just burn along the top so you burn the dead off. I went out one time and the MoD who had caught a piece [of Moor] on fire and I went over and looked at it and you had that depth of vegetation all green still and just the tops were burnt off because it was frozen when they did it, but what I wanted to do with trials up on the blanket bog is not going to happen (Hill-farmer7-1)

Another method of managing the areas of rank ungrazed grassland is now being explored by the Forest Commoners, that is cutting the vegetation. As discussed earlier much of the Forest is remote and only accessible by foot or quad bike.

so I'm now looking at whether we can find what we need: the only other way of reducing it is mechanically with some sort of flail...But we've got pasture toppers that work on quad bikes, so can we get somebody to alter a pasture topper that works from a quad bike into one that's more robust and so would cope with that sort of vegetation, that we could actually go up and cut fire breaks or even just pathways. To try and encourage the stock in. Because if you can get the cattle to come in and thomp about then you are going to get sheep to come in and you are going to break it up. (Hill-farmer7-1)

It was clear talking to hill-farmer7 who is co-ordinating much of the work in the Forest related to DFF that a great deal of effort and ingenuity had been attempted to make DFF work. The comments regarding lack of ambition in section 7.3.1. seem somewhat harsh and would appear to stem from the fact that agreeing a theoretical approach to this problem is considerably easier than implementing it.

I have subsequently discussed this issue with NE's national upland advisor who has been involved with these decisions who re-emphasised that it is not possible for NE to consent to swaling on deep peat sites on account of the damage that may occur. I was also told that a number of discussions were held and assistance was offered to identify areas on shallow peat where *Molinia* was abundant so that trial burns could be carried out there instead, these offers were not followed up (Naomi Oakley per comms).

The next section looks at how working across a very large Common with multiple Commoners has caused problems in their right own, highlighting again that managing Common is considerably more challenging than managing land with a single occupier.

7.4.4. The challenges of increasing stock numbers

One way to graze more of the under-grazed *Molinia* would be to increase the stocking rate of cattle but as discussed in 7.4.1. this has not occurred as it was suggested there that it might not be economically viable for hill-farmers to increase their cattle numbers. According to this hill-farmer the reasons that cattle numbers have not increased are more complex and involve whether the stock would be adequately herded, where they would be housed in the winter when they were not on the Common and the logistics of encouraging the cattle to eat in the areas where the need is greatest.

It's a very difficult one because you've got various people saying "well I'd like to increase my stock numbers" and some have said "I'd really like to increase my stock numbers because I really feel that on the area where my stock are I could do this, this and this" but the majority of people who want to increase stock numbers just want more animals and they really don't care where they graze so it's very difficult to tell one person they can increase and not their neighbours. So, we've actually said no we are not going to increase stock numbers as an overall thing. (Hill-farmer7-2)

In effect, there needs to be an overall consensus amongst all the Commoners involved with the Forest of Dartmoor Common. The current consensus is underpinned by a very large HLS scheme which totals over £1m. The agreement has been signed by the 80 active Commoners along with the 170 non-graziers (who have rights on the Forest but have agreed not to utilize them. Getting the Forest into the HLS was an extremely complex process of negotiation and proposing to increase stocking numbers threatens the current consensus. For example, some non-graziers might want to have the opportunity to commence grazing again whilst some active graziers might want to up their own numbers. Whilst the current situation with the HLS agreement is strong, any tinkering with what has been agreed is considered to be risky as some will be seen to have gained whilst others will feel they have been disadvantaged. As discussed in chapter 4, the whole issue of "cutting the cake" regarding the equitable distribution of HLS funding amongst all interested parties is

fraught with difficulty and therefore something that the majority of commoners in the Forest agreement would be unwilling re-open.

It is also interesting to note that it is suggested that there are some hill-farmers who would not take their responsibilities seriously regarding the shepherding of their stock to areas where they are needed, whilst there are others would ensure their cattle were shepherded into the areas of under-grazed *Molinia*. Again, the Forest of Dartmoor Commoners Association have concluded that internally policing such issues is too problematic and risks triggering the re-emergence of older inter-Commoner feuds. Such an arrangement would need to be internally policed as any infringements of the legal agreement can lead to fines imposed on all (see 7.4.5 for an example).

So rather than increasing stock numbers per se, the Commoners Association have been granted a derogation which allows them to keep their cattle on the Forest until December (rather than end of October).

....we're letting the cattle stay out until the end of December on some areas. (Hill-farmer7-1)

Whilst this new initiative has been welcomed by the Commoners it has highlighted some new issues and problems.

So, we are leaving these animals out now until gone Christmas, but under the ESA they had to be in by the 1st November, but 80% were already outside the moor gate looking to come in anyway. It's the other 20% that under this Farming Futures scheme we are saying yes, we can leave them there and we will breed from those animals because they still have the mindset to stay out, but it's going to take a long time to get the numbers up again, because they were quickly educated to come back. So yes, we've extended the winter grazing period for cattle and that's been a big help for those cattle that actually stay out there, but I think if you went out there first week of December you would struggle to find any big numbers of cattle because they are all coming back to the moor gate, but it has given us chance to re-educate those cows but it's going to take years. (Hill-farmer14-1)

So, we've got this derogation that the cattle can stay out up to the end of December and the principle that we work on is if your cows come back to the moor gate because they want to come in, you take them in, but if they are happy to stay out you leave them out. And if you get 3 rough days and they all come back to the moor gate you can then drive them back out but they have to stay, you can't be driving them out every day or other day, you mustn't do damage and you mustn't cause problems to the Home Commons. (Hill-farmer7-1)

The second issue with leaving the cattle out for longer revolves around where they are actually grazing. It is important that they do not congregate on areas which have already been well grazed as there is a danger that these areas will then become over-grazed. The cattle being kept out longer need to be encouraged to graze in the under-utilised areas of grass.

You've got to do something to get them into the Molinia and you've got to really encourage them in, otherwise all they'll do is graze more heavily on the bits they can get to. (Hill-farmer7-1)

Getting cattle to graze in the areas where you want them to graze is an issue in the summer as well as the winter. As discussed in 7.4.3. the option of burning *Molinia* to create areas of new fresh and sweet growth has not been permitted by NE because of its potential impact of the peat. Another alternative is the use of cobs – cobs are supplementary cattle feed, they do not constitute a major part of the cattle's diet but can be used as a sweetener to encourage animals into a certain area. This is the approach adopted on Molland Moor discussed in chapter 6.81.

If you've got somebody who's got quite a large proportion of their herd on the Common then they potentially would have the time to go up there, it's a very thorny issue, but if you could provide the payment that would cover the cost of feeding them, cows will come for cobs 12 months of the year, its sweeties, so if you actually could pay somebody to every couple of days go out there and basically with the quad bike find the cattle, rattle the bag, get the cattle to follow you up these paths and then into a certain place you then scatter your cobs around so they are then looking for these and they will pull the vegetation off to get at them and you leave them there; they won't just turn around and all traipse back down the path, they'll graze their way out. They'll look around and especially, say you had a track going up to an area and then you had some tracks going off, they would explore, wander up them and see where they went. (Hill-farmer7-2).

However, the Forest HLS Agreement between the Commoners and NE has already been amended to include additional payments for shepherding. The use of cobs would be another derogation permitted by the DFF project and the Commoners argue that they need additional payments to initiate the “cob shepherding” and without it this new initiative cannot go ahead.

We've got no money to do it. Natural England have stepped in and said “no, that's what that extra money is for, that's why we gave them that supplement for the whole agreement” Natural England countered anything like that with “but we're already paying you 50 thousand a year”. If I could turn around to some fairly specific commoners who I know, they would be

probably prepared to do it and do it properly, and if I could turn around to them and say right now this is what we want to do, we've got the machine to do this we will pay you x amount of money to go out with your quad bike ... I think I might be able to get somewhere with some of this but I haven't got that tool. The trouble is if you talk to Natural England they would start saying "oh well yeah if we pay a Commoner - we could pay them £5 an hour to go out and do this and few quid for some food", I'm sorry if you want them to do it you need to be paying them £25, £30 an hour to do this. This is the sort of thing that really causes tremendous bad feeling. (Hill-farmer007)

NE clearly have a duty to protect the SSSI which the vast majority of the Forest of Dartmoor Common is designated as. DFF has offered the Commoners an opportunity to come up with new ideas to ensure that the Common is managed effectively for its wildlife and archaeological interests. Despite much effort it has so far proved difficult to find ways of improving the grazing in areas of rank under-utilised grassland without increasing the grazing in areas which are already adequately grazed. The fact that the Forest of Dartmoor Common is remote – lears are often 5 miles and sometime 10 miles from the Commoners' Home Farms and that much of the Common consists of deep peat where swaling is not permitted has exacerbated the problems. Despite all the frustrations and lack of progress this Commoner who has been actively involved in trying resolve these issues had this to say.

I think Farming Futures is a great idea, but I think it would work far, far better on the Home Commons [where lears are much closer to the Home Farms and there is much less deep peat] (Hill-farmer7-2)

This section perhaps has given the impression that the Forest of Dartmoor Commoners are trying their best to come up with innovative solutions to the problems that are faced but are being thwarted by NE. However, the next two sections explore whether all Commoners in the Forest and on the other Commons on Dartmoor are keeping to their side of the bargain.

7.4.5. Are all the Commoners doing what is expected of them?

7.4.5.1. Actual cattle numbers in the Forest of Dartmoor.

In August 2019 I was copied into an email by NE's Team Leader for Dartmoor, which forthrightly pointed out that some hill-farmers in the Forest had not put their cattle onto the Common, that in some cases animals were being removed before they

should be and that the levels of shepherding required (which had been funded by NE) was not being enacted adequately by everyone.

*.... following my various summers visits and my Team's surveys on Dartmoor, the Forest of Dartmoor is completely under-grazed and the Commoners are anywhere between 30-50% under the supposed cattle numbers that should be evident and grazing on the high moor. In fact on one day I was up near **** at the end of July I saw 100 cattle being driven off the moor for bulling management issues. These cattle should have been grazing the Molinia when it was at its highest palatability. There is a complete lack of shepherding that is paid for under the agreement by the Commoners and instead I suspect these cattle are grazing the Home Commons where they shouldn't be and causing localised over grazing issues. (NE email 27/8/19)*

These are serious allegations and if upheld there could be consequences, such as a fine or the non-renewal of the agreement during 2021. The only tried and tested method currently of reducing the *Molinia* growth is grazing by cattle between May and July, the fact that up to 50% of the permitted cattle were absent from the Forest indicates that some hill-farmers are not trying their best to reduce the growth. Additionally, due to the lack of appropriate shepherding animals were drifting out of the Forest and grazing on the Home Commons. This lack of shepherding chimes with the comments at the beginning of 7.4.4. where the Commoners Association decided not to allow an increase in cattle numbers as they were concerned that some hill-farmers would just turn animals out and then not shepherd them to their correct leas.

I have not been privy to any discussions following the sending of the email of the 27/8/19 and it is conceivable that a response has been made by hill-farmers arguing that as they had not been allowed to burn off areas of ungrazed *Molinia* or agree a financial settlement to shepherd using cobs as an incentive, it had proved impossible to hold the cattle in those ungrazed parts of the Forest.

7.4.5.2. Slipper farmers

A number of hill-farmers interviewed alluded to the notion that some hill-farmers were able to make a reasonable living from the Basic Payment Scheme without actually having to do much in return or fulfil their commitments to the obligations they are signed up to in the agri-environment schemes. Such hill-farmers were known as "slipper farmers".

*There has been a problem with slipper farmers, but as I spoke to *** - virtually doesn't farm now but sits on a farm, not saying that nastily but I am frustrated on a 120acre farm he keeps 5 cows, not far from here, and I'd love to farm it... there's never been such a good time to be a slipper farmer. You fill a form in you get your single farm payment, you fill your HLS in and that comes in, you wander round you look out the window, your 5 cows are still alive, you go back to your fire, go back to doing something else. If you want animals on the middle of the moor you've got to have flexibility to do the stuff. (Hill-farmer24-2)*

This hill-farmer bemoans the fact that many hill-farmers today do not know the moor as well as their grandfathers did and some do not follow the traditional practices of shepherding.

but the traditional ways of knowing the moor is disappearing, there's not very many people who know the moor very well now, know where the crossings are and where the stock should be, where they should be leared.

.... You have got to go out there and push those sheep back to their lears. If you just opened the farm gate they would just hang around the gate and the walls.

... yes you probably get one or two that perhaps open the farm gate and just kick them out, and those sheep will be hanging around the gate and the farm and that sort of thing. That might be okay for some farmers but certainly for us here, the better grazing is further out the ones that come in from further out over are certainly the fitter, healthier sheep, so it is in our interests to push them out

I think probably it's easier to farm the Home Commons as opposed to pushing the stock further out [into the Forest], perhaps it is easier for people to jump on the quad bike and go and get those animals, but some of the cattle should be out on the Forest and that I don't think perhaps they're leared as they should be (Hill-farmer16-2)

7.5. The Search for Consensus: the ugly

This section describes very poor and often illegal behaviours by some hill-farmers to other hill-farmers. These accounts and examples have all been provided by a number of the hill-farmers interviewed.

7.5.1. Bullying

As described in Chapter 5.5. a number of hill-farmers have been bullied from their Commons by others so that they can up their own stocking numbers and therefore benefit financially. These behaviours go above and beyond the infighting between neighbouring farmers described here.

... ultimately you have a common surrounded by farmsteads and 4 or 5 generations they've been fighting over that bit of grass. And still it goes on. (Hill-farmer21-2)

Here is an account of an attempt to bully a hill-farmer off a Common which gives an indication of the tenacity and robustness required to survive.

*We have tried to take land, we have taken a farm up near *** and the farmer next door has actively dogged our sheep off, let them back on our fields to try and stop us establishing a lea of sheep on that common, so it still goes on. It's been quite a battle but we won't be beaten ... but it always depends out how much you can stick really if you look romantically at it we all work together ... but we don't. Dartmoor farmers, farmers who graze the commons all want to get one up on their neighbour. (Hill-farmer21-2)*

Here is a hill-farmer who no longer puts stock on the Common they have rights on.

It is the fact that you have these few families and they are families, we know who they are, that are pushing out all the little people all the time, and they are seen as being these traditional families with these traditional skills, but, to me with rights come responsibilities, it's not using the Common as a shared place it's using it as an extension of their own farms and they are just pushing everyone out (Hill-farmer2-2)

7.5.2. Rustling

During the course of my interviews with hill-farmers I was very surprised how many times I was told about rustling – particularly of sheep. Over 20 hill-farmers gave me accounts of how they had had sheep stolen. This example is the most serious one I was told.

*We've just gathered our animals off ** up towards *** and **** [a very large lea of around 2000ha], this weekend just gone. It's been quite disastrous really because we usually shear about 1500 sheep off that area on 2 gathers, well we only sheared 1000 this time but the animals still went out in January and February after going to the ram, but they just haven't turned back up again, so we have lost a lot for rustling and the rest of it, because those animals don't die out there, because there would be wool everywhere.*

Last year we lost over 600 animals that went out the gate and never came back in again; that's one of our worst ever losses and I think this year is looking like the same again. The young ones we turned out - we turned out over 500 young ones and we're down to about 120 missing still.

It's a specialised job, so it's somebody local that's doing it or someone within our circles that knows how to do the job, so it is a worry. But that has a big impact then on the animals that stay out there because those sheep are leared, it's not easy to put those sheep back again. (Hill-farmer14-3)

Here is another example, again the claim is made that a Dartmoor hill-farmer is responsible.

Had 60 sheep stolen that winter I've had a lot stolen It's one of our own that's doing it. It's not somebody coming in from away, it's one of our own doing it. And that is the saddest thing about all of it yeah, I know where they are going. But knowing and proving is two different things isn't it? (Hill-farmer27-3)

There is even a plea for information on the scale and extent of the problem on the Dartmoor Commoners Council website ⁵⁶. However, despite the apparent scale of the problem it would appear that there have been no prosecutions and no cases reported to the Police.

I've heard this story for 15 years, every year, so last year we contacted the police... and at a Council last year with the police, we decided what we really needed to know was: what is the situation? We hear these rumours, people say "I came to gather my sheep in the autumn and I had 20 missing or I had 10 missing", we heard this a lot, so we asked every Commons Association to report any missing animals at every opportunity, even if those animals turned up again it wasn't a problem, we would record it but we wouldn't pass the data to the police until there had been sufficient time to confirm that those animals truly were missing and they hadn't just wandered. After 12 months we've not had one report.

*So where is the evidence? I mean animals go missing because of what we've just been saying about the low density, there's good feed somewhere else and nothing to stop them wandering, people like ** up in the North, he occasionally gets animals from here, and it's unusual but it happens, so if it's half a dozen sheep just wandering they might not get picked up until the next clear day which is October then suddenly in October everybody shuts up again because they've suddenly been told "oh your sheep are up in **". It may be a real issue and I would have huge sympathy if it was, but we have no evidence to support it. (Stat-body1)*

Whilst I have no reason not to believe the hill-farmers who gave me detailed accounts of stock loss and rustling, it is unclear why the official channels for reporting and investigating such matters are not being utilized.

7.6. Conclusions

This chapter details the trials and tribulations associated with trying to deliver the Dominant Policy Narrative – a pastoral form of agriculture produced by hill-farmers is required if wildlife, archaeology, landscape, access, carbon storage and water supply are to be conserved and enhanced. The policy levers of the moorland vision, DFF

⁵⁶ Loss of Livestock https://www.dartmoorcommonerscouncil.org.uk/news_details2.php?id=84 (accessed 21/7/21)

and the Common Cause approach have been put in place and are largely welcomed, however turning agreed policies into co-ordinated action on the ground has proven to be difficult. In part this has been caused by an inability to determine what actions on the moor are practical and permitted. This chapter has detailed the frustrations felt by many hill-farmers with regard to managing the now extensive areas of under-utilised *Molinia* and chapter 5 provided details of how managing extensive areas of gorse has also proven to be problematic. On the other hand, the chapter has also provided a number of examples where hill-farmer behaviours by some individuals has caused significant issues and tensions. For example, ineffective shepherding regimes and significantly reduced cattle numbers have exacerbated the problems. Additionally, inter-commoner bullying on the Commons along with numerous stories of sheep rustling further diminish achievements.

The search of solutions to the farming and conservation issues need to continue with improved dialogue and relationships. It is also very important that the negative and deleterious hill-farmer behaviours described in this chapter cease.

Hill-farming remains in a difficult economic position but the changes to how agriculture is funded following our departure from the EU are already beginning to come in. Within 7 years all Pillar 1 Basic Payment Scheme payments will have ended and the Pillar 2 agri-environment scheme monies will be replaced by the forthcoming Environmental Land Management Scheme. This chapter suggests that there is still much to be done to find a consensus and modus operandi which will actually deliver the public goods in return for the public money.

8. Re-wetting and re-grazing – two counter narratives to complicate the search for consensus

8.1. Introduction

This chapter considers two further counter-narratives: re-wetting the mires and reinstating sufficient grazing to protect and enhance the historic landscape.

With regard to the re-wetting counter-narrative we need to step back to the emergence of the first ESA agreements as discussed in chapter 5. The detailed prescriptions put forward by EN addressed issues around stocking numbers and grazing timescales as well as restricting the extent and frequency of vegetation burning i.e. swaling. The aspiration was that if the prescriptions were adequately followed then moorland restoration would occur and species of wildlife which were considered under threat would be conserved and enhanced. The Commons of Dartmoor had not undergone the extensive 20th century drainage works that had been seen in other upland areas in the UK and as a result it was not considered necessary on Dartmoor to block drainage channels as few have been installed. Nevertheless, for many centuries Dartmoor had been subject to various human activities such as peat digging and tin streaming (Newman 2011) which had detrimentally impacted the moor's hydrology.

The re-wetting narrative was a response to that situation – in order for moorland wildlife to function ecologically, attempts also needed to be made to ensure the peat on the moor functioned hydrologically as well. Section 8.2. details the stakeholder and policy responses to the calls to re-wet Dartmoor's mires and blanket bog.

The re-grazing narrative is basically an attempt to refute the dominant narrative at the time, that Dartmoor's Commons were over-grazed and unsustainably burnt. Instead the re-grazing narrative argues that cattle and sheep numbers need to be increased to graze off the excess vegetation to benefit the historical landscape and cultural environment. If one is strictly following the classification of narrative types this re-grazing narrative should be termed a non-story as all it does is refutes the widely held over-grazing argument. However, I find the term "non-story" rather pejorative, and in the context of a highly contested and heated series of discussions this is unhelpful. I will therefore describe it here as a "rebuttal counter-narrative" which will be discussed further in 8.3.

8.2 Re-wetting: a response to a shifted baseline

Hydrologically functioning peatland are known to deliver a range of important ecosystem services, such as the conservation of biodiversity, the capture and storage of carbon and the provision of clean water (Bonn et al 2016a and Charman 2002). As a result, a UK wide strategy has been drawn up to conserve and restore the country's peatlands (IUCN 2018) and for England these aims have been incorporated in the Government's 25 Year Environment Plan (Defra 2018). The extent and state of peatlands on Dartmoor has been mapped and evaluated, the conclusion being that 29km² of the peatland resource was ecohydrologically damaged and only 3.6km² was functionally intact bog (Luscombe et al 2016 & 2017). In 2010 the Dartmoor Mires pilot project was established to conduct peat restoration works on the north moor to assess their feasibility, desirability and potential for success. Work was carried out at three sites: Winneys Down, South Tavy Heads and Flat Tor Pan. This work was considered successful by the partnership involved (led by the DNPA and South West Water) and following the launch by Defra in 2017 of a new capital grant scheme for the restoration of peatland in England, the Southwest Peatland Partnership's successful bid for additional funds to restore an additional 276ha of blanket bog on Dartmoor (DNPA 2017).

With hindsight, attempts to restore the moorland ecology simply using the grazing and revised swaling prescriptions as set out in the ESA and not addressing the centuries old hydrological degradations, were unlikely to deliver the desired ecological outcomes. It is argued by those involved in the re-wetting initiatives that a functional hydrological regime is as important as the details around the pastoral management.

This re-wetting initiative has not been universally welcomed and this section details the various stakeholder attitudes to the re-wetting narrative.

8.2.1. Purposes and need of the Mires re-wetting initiative

One of the hydrologists involved with the project sets out four potentially different benefits on Dartmoor that could accrue following the restoration of various areas of peat: carbon storage; biodiversity benefits; the reduction of flooding risks and the improvement of drinking water quality.

At Flat Tor Pan the restoration works halted peat erosion and therefore protected the carbon store whilst also maintaining areas of pristine bog where a population of dunlin (*Calidris alpina*) has been conserved.

Flat Tor Pan is a good example, there is some really nice bog, channelled and cut below it, before you get into the East Dart, there is some good nice condition bog there, but all around the margins of it are these quite subtle erosions that are head cutting back into it, so I have a concern that even those small proportions of landscape that you would say are pristine are under threat, over decades [from further erosion]. (Hydrologist1)

On Hangingstone Hill, the restoration work will hold back water in the peat to reduce the possibility of flash flooding downstream as well as bringing biodiversity benefits.

... the top of Hangingstone Hill is damaged in quite a different way to Flat Tor Pan, and it is working in locations which are perhaps of relevance to the flash flooding problem, with communities downstream that have suffered in that way, so it does have a reason which is different to just restoring the biodiversity. (Hydrologist1)

Finally, he discusses the restoration of peat to improve water quality which to date has yet to be trialled on Dartmoor.

... I think people need to be persuaded that the really good strong restoration that could be right up and across the head of Meldon, Avon or Venford reservoirs or others where they could really have an impact on the cost of treating that water, we haven't really got enough support for that from the people whose land it would impact, yet the evidence is believably strong enough to allow us to do that. (Hydrologist1)

Another hydrologist commenting on the Dartmoor mapping project (Lucombe et al 2016) commends the work and concludes that much of the extant peat is in a poor condition.

I've no argument with that report at all, it's actually a series of maps so it sets out where the peatland is damaged through gulleys, through ditches, through peat cutting, through erosion features, that exactly tells you the state of the peatland. So, it shows the state of the peatland body, it doesn't make predictions or forecasts about what that peatland body will do but the implication is that if it is in that state it's not hydrologically functioning peatland as we recognise it, very, very far from it actually (Hydrologist2)

Here he defines what is meant by hydrologically functioning peat.

... hydrologically functioning peatland should have a water table that is at or near to the surface so they will be wetter ... (Hydrologist2)

NE often has pre-conceived ideas about what habitats should develop following on from restoration works and when asked whether he thought we should restore water tables and then see what happens to the plant and animal communities he said this.

That's exactly the right approach and that approach challenges the conceived view in many ways because Natural England and the National Park Authority and others reflect back to past landscapes and say "which period of time are you managing back to?" and we [i.e. hydrologists] very clearly say we don't know and that actually is irrelevant, if you restore the hydrology you then wait and see what comes out of that in terms of communities, and if it is wet woodland then we go with that, we are not trying to manage back to a period in time, it is not a historical perspective we have on this it's a functioning landscape perspective, that's a big difference (Hydrologist2)

These comments reflect his views reported in chapter 6.8.1. regarding Molland Moor and the restoration undertaken there in the absence of a functional hydrological regime.

Peatland restoration is expensive and as a result, areas identified for re-wetting will have to be prioritised

the areas suitable for peatland restoration may be between 10 and 20 percent of the landscape, it is not the whole moorland at any stretch at all. So, the question you are actually asking, what should you do with those other areas that don't lend themselves to cheap and easy restoration, what should you do with those? Should you graze them, should you burn them, should you fence them, should you put trees on them, should you take all the stock off? All those sorts of questions (Hydrologist2)

Here a Dartmoor hill-farmer reflects on the changes in the hydrology which has led to a gradual drying out of the moor that they have noticed over the years.

I know I look at it and, up the peat works which is an area I've known all my life, I can see a difference up there now to 40 years ago; it is drier, I can see a difference, the gulleys. The drains that run down like that haven't changed but the gulleys at the bottom are getting deeper and wider. I used to live out on Dartmoor on the pony, I used to help gather sheep from right down across there and it was a nightmare because you couldn't get through on your pony, there was one route down through that Bill Fogarty knew and unless you could find his route you sunk your horse up to its belly repeatedly. (Hill-farmer7-3)

8.2.2. Farming concerns

Whilst there is now a general consensus amongst hydrologists, conservationists and some hill-farmers that the peatland resource on Dartmoor is in need of restoration that view is not necessarily shared by the majority of hill-farmers who currently graze

the areas involved. However, the reasons behind the partial lack of support from the hill-farming community for re-wetting are complex and often nuanced. The following four sub-sections look at some of the issues involved. These include direct impacts of grazing and stock, the failure to deliver payments for ecosystem services to those hill-farmers affected, the complex politics surrounding the Forest agri-environment scheme agreement and the issue of clearance payments for those hill-farmers affected by military live firing.

8.2.2.1. Direct impacts on hill-farming practices.

All the hill-farmers interviewed had a view on the re-wetting projects whether they were affected by them or not. The following quotes from two hill-farmers who are not impacted by re-wetting schemes, nevertheless represent a view which believes that Dartmoor is a pastoral landscape and that anything which threatens that should be opposed.

it is very controversial. I think as a whole most commoners can't see the point in it. Because if you are going to make it wetter that means that you are going to get even less stock going in there so therefore we are going to have even less grazing, it's going to impact on what we can gather so therefore not a good thing. (Hill-farmer7-2)

and

If anybody thinks that Dartmoor needs re-wetting they should really think again, they should really come and live here for a winter and realise what the rainfall actually is. No, no, complete waste of money I would say, wouldn't you? (Hill-farmer26-2)

This hill-farmer has been directly affected and the following impacts have occurred.

Well I think you know my thoughts on the Mires project, again the farmers have been pushed and shoved, not listened to, and it's costing us money to go round the Mires and extra fluking [parasite treatments] it's cut our lear in half really because you have this Mires Project here. (Hill-farmer12-2)

Others are pragmatic about the Mires Project noting that the limited spatial nature of the works and subtle changes in farming practices mean that farming and restoration works can co-exist.

I first took my cows out there accidentally, it was the end of the peat works track is right up through there and I walked them that way to take them up onto Amicombe Hill instead of going a bit further down and yes they were going down to their bellies I thought I was going to lose a couple of them, they went down bad and it's not the biggest of areas where they are going to rewet really, if they went right the way down through the whole place, down where

the bilberries were, where my cows eat, that would make a difference but if they only do it in that little area that won't make a lot of difference. (Hill-farmer23-2)

A significant number of hill-farmers do appreciate the importance of the peat resource and acknowledge that it needs to be appropriately managed but also point out that there is a cost to that.

I think some of those bogs are probably wet enough, but I see it as a big asset for the nation and we, as Commoners, can look after that asset, you can't just afford to neglect it, it's got to be maintained, but then there is a cost to that maintenance. (Hill-farmer14-2)

There are also others who will become involved if payments are involved even if they don't wholeheartedly support re-wetting.

But they can see that if that is where the money is going to come from and that is an important ecosystem services then they have to buy into it to get future funding. So, I think there's very few commoners that I've spoken to who actually genuinely think that they want to restore the blanket bog, most of them can't see, don't understand... (Hill-farmer7-2)

This view, from a representative of Dartmoor's hill-farming community, talks of the targeted nature and scale of the works along with "baggage" and "impishness" and alludes to one of the real issues around the re-wetting – money, Commoners are being asked to scale back on the use of their "rights" without an associated payment.

I think there are people who don't see rewetting as a problem and I think there are people who do and I think it's more to do with the baggage they are bringing to it than actual evidence on the ground. Because the Rewetting the Mires Project and all the other initiatives that have been going on have never sought to turn the place into a swamp, they have all been relatively targeted, to rewet quite well-defined areas, and I don't think any of the graziers who are affected have really had a problem with that. The most vocal people seem to be the people who don't have animals up on the Forest, they may have Forest Rights but their lear is around the edge not on the high Forest. So, I think there is a lot of impishness. (Stat-body1)

8.2.2.2. The challenges of monetising payments for eco-system services

Prior to the commencement of the pilot Mires Project in 2010, discussions were held between Commoners, South West Water and the National Park Authority to determine whether payments might be made to affected hill-farmers in exchange for allowing peatland to be re-wetted. These discussions have proved to be protracted and unlike the situation on Exmoor where payments have been made, Dartmoor hill-farmers have not received any funding. This situation has caused considerable

resentment amongst hill-farmers – the following quote is typical of many of those affected.

Would you like to farm for water and be paid? We all said we'll listen, that was in 2009. What have we got, nothing. They've got exactly what they want but we've got nothing. (Hill-farmer12-2)

This hill-farmer makes the point that a payment will be required if the restored Mires are to be sustainably managed into the future.

... if you want us to maintain it you need to... not compensate or subsidise us but to help us do that we need a payment to do that. (Hill-farmer14-1)

However, the current position appears to be that South West Water do not consider that there is a business case for them to provide ecosystem service payments on Dartmoor

So, for Dartmoor we've looked at it and said there is no value in us doing that (Stat-body3)

And when questioned about the cost savings made by investing in peatland restoration the reply was as follows.

As low as not to be countable. (Stat-body3)

Whilst there is frustration within the hill-farming community about this situation there is also a hope and expectation that in due course this will change.

It just strikes me that at the moment rewetting peatland is very fashionable and attracts quite a bit of money at the moment and I can see that trend continuing for a little while, I can see South West Water being made to contribute more in the future and I can see that being one of the public goods (Hill-farmer12-2)

The discussion around the provision of eco-system services or indeed the “public money for public goods” debate has broadened the debate with some to consider whether payments should be made to the landowners as well as the Commoners. It is argued by some that Commoners have rights to pasture stock whilst the owners have the mineral rights and therefore it is the latter group who should receive water and carbon related payments.

And I think the other thing that interests me at the moment -and it is human nature - one or two people already starting to warm up the argument about who takes what from future schemes, you know if I, the grazier, only have the right to take the forage but my payment is for carbon or water management then what is the landowner's position and... I mean I have not got involved in those sorts of debates yet, my broad-brush approach has been let's try

and meet this huge challenge that faces us and rise to a better regime of schemes and have some money to debate, let's not worry about arguing about it until we have actually achieved the key card. (DoC1)

The concerns arising from this are two-fold: it could lead to disputes between owners and Commoners about how any future monies should be split, and in the absence of any income for landowners it may make common land valueless.

You wonder in the absence of any agri-environmental scheme and taking a situation there isn't any sporting value what is the incentive to actually own common land unless you are a utility company and you have a direct interest in what flows from it or what is emitted from it. People do need to keep that in mind because very large areas of land could hit the market or be abandoned without. (DoC1)

It will in the future be essential that these issues are resolved for all concerned and work continues to try to ensure the management of the moor for carbon, water, access and the cultural landscape are turned into business opportunities which help to make hill-farming economically viable. This is the view of an official from the National Park.

We are enhancing the environment through the Mires restoration work, and the work on the Moorland Vision, but it also means that actually there are better opportunities for public access, opportunities for a better understanding, they are all part of the enhancement from my perspective along with cultural heritage being visible and interpreted it's important. Those all need to be translated into business opportunities for our hill-farmers (Stat-body2)

This representative of Dartmoor's Commoners sums up the frustrations around the discussions regarding hill-farmer payments and re-wetting.

If I was really thinking back, I think the mires project has been one of those projects that has been seriously damaged by misinformation and poor communication. (Stat-body001)

Whilst the position of South West Water appears to be definitive with respect for payments for re-wetting Dartmoor this may reflect a deeper debate about who pays for such services – should it be the private sector or the public purse? This is undoubtedly a national debate which has yet to be thoroughly discussed.

8.2.2.3. Re-wetting and the Forest agreement

The majority of Dartmoor's deep peat where the re-wetting projects are occurring or are proposed fall within the Forest of Dartmoor Common. It currently benefits from a large (£1.2m per annum) agri-environment scheme which involves around 370 hill-

farmers – both active and non-active graziers. The following gives an indication of the tensions around the agreement which has been caused by the current failure to benefit from payments for water and carbon.

Yes, so there is that opposition there [to re-wetting] but, as I say the Forest is 70 odd graziers but there are also 300 other people who have rights to the Forest but don't use it, and those 300 other people are going "don't shut the door yet" because they might lose their payments, even though they don't physically use the Forest but they do benefit from a cheque through the post for the environmental scheme, so they want to keep the doors open, so it's trying to keep that balance between the two, trying to negotiate with the person actually using it and it has an impact on him every day when he goes up there, to somebody who is sat on the sidelines thinking I still want my payment for not doing anything, so it's that juggling act again. (Hill-farmer14-2)

8.2.2.4. Clearance payments

Three large areas of the moor where the deep peats occur are also used by the Ministry of Defence for live firing and are known the Military Ranges. As a result, there is a system in place whereby Range Clearers (usually hill-farmers) are employed to remove stock from the relevant areas to ensure that animals are not killed or maimed. Additionally, the hill-farmers who have had their stock removed are compensated for their loss of grazing during the firing periods.

A number of hill-farmers interviewed during the course of this research commented on the practices of stocking the blanket bog areas on the hill moor. Those who commented did not put stock out on the blanket bog as they didn't have the "rights" to do so. They did however suggest that the grazing in those areas was very poor and people were only putting stock out there or saying they put stock out there to claim the "clearance" payments. These two quotes are typical.

There's a lot of what I call false stocking because people on top of these mirey areas which is often where the MOD is shooting from, people are being paid to clear their stock off, so they put stock up there to clear it off where normally it wouldn't be up there. (Hill-farmer3-2)

and

You mean the elephant in the room is nobody hardly uses it ... but they get a vast amount from the military ranges because their animals are cleared off from that. (Hill-farmer24-2)

I cannot confirm whether these accusations are true or false, they may simply reflect bitterness from the "have nots" against the "haves", alternatively they could reflect the comments made in section 9.2.1.3. where it is argued that much of the blanket

bog should be unsuitable for grazing on account of its wetness and that current grazing patterns in those areas simply reflect their degraded hydrological state.

8.2.3.1. Dr. Tom Greeves, the Dartmoor Society and re-wetting the mires

Disputes around the Re-wetting the Mires Project have not been confined exclusively to hill-farm concerns and arguments of ecosystem services payments. Perhaps the most vocal opponent of the Dartmoor Mires Project has been the Dartmoor Society led by its former chair Dr. Tom Greeves, a retired and eminent archaeologist who has studied Dartmoor for decades and who now refers to himself as a “cultural environmentalist”. Tom Greeves agreed to waive his anonymity regarding the semi-structured interview I conducted with him and he is therefore cited below accordingly.

The Dartmoor Society take a very different view to that put forward by the hydrologists and many conservationists, rather than wanting to see Dartmoor’s deep peat as hydrologically functional they wish to see evidence that it is damaged and therefore in need of restoration. They have argued that the four sites “restored” in the pilot project between 2010 and 2015 were in fact undisturbed areas of peat which were not in need of any remedial works. The public interactions between Tom Greeves and the Dartmoor Peatland Partnership have often been acrimonious and were often carried out in the public domain. Greeves when he was President of the Devonshire Association used his Presidential Address to set out in detail his concerns – the following quotes are taken from that paper, an update report to the Dartmoor Society and my interview with him.

Nobody could object to restoration of Dartmoor mires if there was a proven need to do so, but no evidence was ever presented to demonstrate that the blanket bog of Dartmoor was under threat, or was eroding in a significant way in recent years or decades compared to its long-term condition. (Greeves 2015 p32)

we have always argued that more work should have been done in understanding the nature of Dartmoor peat, not only how it has behaved over Millennia and understanding whether really any changes that we think have happened in the peat really exist (Tom Greeves interview 2018)

... large tracked machines were taken into some of the wildest parts of Dartmoor and the surface of four previously undisturbed rare, deep, and healthy plateau bogs were subject to machine-digging of surface vegetation. This was then relocated in different orientations to create dams, thus creating numerous small ponds which were claimed to be “rewetting” the mires. (Greeves 2015 p34)

Altogether, this must rank as one of the least prepared and worst pseudo-scientific projects, causing machine interference on four areas of remote blanket bog, at none of which was there previous human intervention through peat cutting or other physical disturbance..... Every one of the four project areas has now been compromised through disturbance. (Greeves 2015 p36)

people have been seduced by money I think really and rushed in where they should have been much more cautious, and we argued that the precautionary principle should have been adopted, (Tom Greeves interview 2018)

Graziers, many of whom were tenants of the Duchy of Cornwall, and who were eligible for subsidy payments, were silenced and threatened if they raised objection to the project, as monies were integrated into the Higher Level Stewardship [scheme] for the Forest of Dartmoor common. (Greeves 2015 p36)

During my interview with Tom Greeves he talked about the impact of re-wetting / restoration works on artificial features in the peatland landscape such as peat cuttings.

You shouldn't disturb, you should observe, find out what is going on, what are the creatures that live there and find these old peat cuttings for example, the human drive, the little ecosystems niches that are created by that, the invertebrates they actually flourish in some of these places. But it's unfortunately driven largely by a combination of fashion and money. (Tom Greeves interview 2018)

And this from an update report to the Dartmoor Society.

I have argued that we need to be very careful about the vocabulary we use, as none of the processes carried out as part of the Dartmoor Mires Project 2010-2015 can be considered as "restoration", but only interference. (Greeves 2017 p4)

In summary, Greeves opposed the Dartmoor Mires Project as it

- impacted on peat areas which had never undergone human interference;
- impacted and affected the hill-farming community;
- consisted of pseudo-science;
- impacted on archaeological features in the landscape and
- consisted of muddled thinking regarding the use of the terms restoration and re-wetting

From a Narrative Policy Analysis perspective, the Dartmoor Society / Tom Greeves opposition to the Dartmoor Mires Project is not a *counter-narrative*, it is termed a

non-story, in that does not conform to the “definition of the story” (Roe 1994 p3). As a result, it forces the partners promoting the Dartmoor Mires Project to respond in detail to each point raised in order to defend their own narrative.

8.2.3.2. Responses to the peat has never undergone human interference

This hydrologist argues that moorland landscape with its peat soil is actually a man-made landscape.

... so Tom says it's a natural landscape and the Dartmoor Society obviously follows his view - or that's the public face anyway, when you speak to individual members they might question it - but as a whole the Society says it's a natural landscape, we don't want it changed with machinery or whatever. We would say, and other stakeholders might agree, look at the evidence look at the science, there is no such thing as a natural moorland landscape in the UK they are all man-made landscapes. (Hydrologist02)

8.2.3.3. Responses to impacts on the farming community

This Official who is actively supporting the re-wetting works suggests that opposition to the project is limited to a small number of individuals and that funding schemes for hill-farmers on Dartmoor have led to better working relationships.

Well, being canny if you look at the history of the Mires Project it was primarily one voice and a few supporters of that one person who would sound off. I honestly think with the agri-environment agreement we started reducing the conflict, actually I think on Dartmoor there is quite a degree of consensus as well and quite a history of joint working between the farming community and the National Park. (Stat-body002)

8.2.3.4. Responses to the accusation of pseudo-science

This hydrologist, after being asked whether he was put out by the comments regarding pseudo-science responded as follows.

No not really, not at all, it's just someone's opinion, I'll do the work and it will get peer-reviewed by people around the world who understand the experimental designs and the like, and what stings me is if those world leading experts in peatland degradation tell me I am talking nonsense, that's what hurts me. With all due respect to the Dartmoor Society or any other interest or self-interest group, those sort of words wash straight over me because I hear where they are coming from and I see where they are coming from that's what motivates those sorts of words, not a deep understanding of the quality of the experimental design (Hydrologist01)

When I asked Tom about his “pseudo-science” comments in light of the peatland mapping reports (Luscombe 2016 &17) he said this.

The University has done wonderful work by Richard Brazier and his team on mapping the peat, brilliant. That should all have been done before 2010, before they began, (Tom Greeves interview 2018)

8.2.3.5. Responses to the impact on archaeological features

The impact of peatland restoration work on existing archaeological sites in the peatland landscape is an issue which has been critically considered by the project partners and great efforts have been made to record existing features but the conservation of such features in situ was considered on a case by case basis with only the most significant being preserved.

... so English Heritage and others would say peat cuttings are an interesting record of human activity, and then peat restoration obviously does change the shape of those peat cuttings to a minor degree because you put blocks in between them, and in the long term new peat growth will start to obliterate peat cutting patterns but I think that's got a 2000 year run before that happens so I think it is safe to set that argument aside, it's been used on Exmoor as well, that ditch blocking would eradicate the ditches from the landscape, again I think they are always going to be there so I don't really accept that as being an argument, in the run of human society I don't think that is ever going to really come to pass. So, this question of do you need, if you record the current peat cutting pattern as we have done is that an historical record, do you then need to maintain it in situ in the landscape as well, is it of enough value to society to keep in on in situ? (Hydrologist2)

8.2.3.6. Responses to muddled terminology

This hydrologist responded to the claims of muddled terminology by suggesting that the goal was not restoration to a former landscape state but instead a restoration to functionality and for a peatland that had undergone centuries of drainage activities this would inevitably involve some level of re-wetting.

I am not trying to learn about a landscape restored to its former state, in the ecosystems theory we have a landscape in this state, some dynamic equilibrium, we drained it so it moved into this drier state and, I'm not talking about putting it back in that place, restoring in that sense, I am talking about restoring some of the structure to get back some of the function, so it's a restoration with functional goals as its objective, and the science around that. (Hydrologist01)

The terminology of restoration is undoubtedly complex and open to personal interpretation as Greeves has also argued that he would favour the restoration of Cranmere Pool on the north moor which today is much reduced in extent as a result

of drainage activities in the area. The difference for Greeves is that the Pool has a historic context.

However, I have also suggested that Cranmere Pool might be considered for genuine restoration as an iconic feature of the high moor and blanket bog, first recorded in the 15th century. (Greeves 2017 p4)

This archaeologist however does suggest his position is rather conflicted.

you'll know Tom Greeves, he's very anti-peat restoration. But if you want to do Cranmere Pool that's fine but I've said it to Tom, he's anti peat restoration but if you want to restore Cranmere Pool that's fine but that's a real conflict I think. As long as it's my pet project that's absolutely fine, I know Tom, I like Tom, but it does make me laugh sometimes. (Arch001)

8.2.3.7. Conclusions

For the hydrologists and conservationists, the intervention of the Dartmoor Society into the Dartmoor Mires Project has been frustrating and often difficult to understand. Whilst the Dartmoor Society campaign has failed to halt the Mires Project its persistence has undoubtedly created extra work for a number of those involved with the planning and execution of the works. Nevertheless, Defra agreed to a second tranche of funding for peat restoration works on Dartmoor in 2018 as it is seen as a core part of the Defra 25-year plan to restore the environment (Defra 2018) and is also an integral part of the Dartmoor Management Plan (DNPA 2020b).

The re-wetting narrative therefore seems now to be accepted as part of the solution to the restoration of Dartmoor's Commons even if its relationship with the hill-farming community with respect to grazing regimes and payments for ecosystem services still requires resolution.

8.3. Re-grazing: a new narrative or a variation on the under-grazing narrative?

8.3.1 Introduction

The re-grazing narrative is another campaign by the Dartmoor Society, again led by Dr. Tom Greeves. In many respects this campaign is similar in its claims to the under-grazing narrative detailed in Chapter 7. The under-grazing of Dartmoor's Commons was first raised in 2006 (Greeves 2006) and articulated in detail later in Greeves' Presidential address to the Devonshire Association (Greeves 2015). Where the re-grazing narrative differs from the under-grazing narrative is with its emphasis on the historic landscape which Greeves considers has been sacrificed and

undervalued in favour of the natural environment. As mentioned in the previous section Greeves has waived his anonymity with regard to his interview with me.

8.3.2. The visibility of archaeological sites

The following section sets out his position in detail with regard to his views on the management of the historic environment and specific archaeological sites and suggests the remedies required.

Writing in 2006 Greeves wrote the following.

If the present situation is allowed to continue, within 10 years or so much of moorland Dartmoor, especially its fringe areas, will be more or less impenetrable, with scrub spreading outwards the bulk of Dartmoor's archaeology will have disappeared from view. (Greeves 2006 p24)

These views clearly reflect the views of many of the hill-farmers interviewed for this study and their views have been detailed in Chapter 7. Perhaps his comments were overly pessimistic and in my view the bulk of Dartmoor archaeology has not disappeared from view in 2019 but there are some notable examples of where its visibility has been compromised by coarse vegetation and gorse scrub (see section 8.3.5. later in this chapter for example).

Also, in 2006 Greeves was calling for more stock to be pastured on the Commons along with calls to allow overwintering of cattle to be re-commenced and larger areas of swaling to be permitted.

The alternative is for the National Park Authority to take the lead and, with hill-farmers, to demand that more animals are allowed on the moor, for a longer season, and that swaling should be much more extensive. (Greeves 2006 p24)

The NE responded to these calls by stating

..... habitats such as blanket bog and upland heath are on the road to recovery and irreplaceable archaeology is no longer being damaged by farmers using baled silage to feed stock on the moor in the winter. (Collins 2007 p30)

But they did concede that there were changes to the vegetation.

The changes we are seeing in the moor's vegetation are complex, the factors contributing to those changes more so. It is undeniable that the climate has changed. There are fewer farmers and therefore less management of vegetation. Of course, the reduction in animal numbers has played a very significant role in reducing the management of the vegetation. (Collins 2007 p31)

With regard to the archaeology on the moor Collins said

Dartmoor is a dynamic place. Change was a feature of the moor even before human influence became a significant factor. That the moor is still changing should be no surprise to us. Some archaeological sites were re-discovered in the 1970s, as Tom Greeves says, due to a period in farming policy that accepted over-grazing as the norm. These sites are not now being lost and damaged, but we accept they are in some cases not as visible as they were in the 1970s. (Collins 2007 p31)

Here Greeves tells me of his views on the state of the Merrivale Stone Rows, one of the most famous and visited archaeological sites on Dartmoor.

.... well, have a look at the Merrivale Stone Rows for example. That's a Premier Archaeological Landscape (PAL) and the cattle were instructed to eat everything to a 10cm height I think but unfortunately cattle and sheep don't understand English. You take animals off they are going to go to other areas which are easier to graze rather than nibbling around the stones of a stone row or something. And in my view the condition of the Merrivale Stone Rows which is not only a Scheduled Site, it's a Guardianship Site, the highest status you can get, it's a PAL, it's right on the road that's the most accessible of all Dartmoor's fine prehistoric sites, it's in a shocking state. The northern rows can hardly be seen because the grass growing over it, but if you go back 30 or 40 years that was closely grazed, everything was beautifully visible. (Tom Greeves interview 2018)

Here he suggests that the grazing pressure on the moor in the 1970s and 1980s produced a landscape which was better for archaeology.

Well there is always a solution and if you look back - I'm not a great believer in choosing a point in time and saying this is how it should be again - but you can learn from the past and clearly in the 1970s and 80s the archaeological landscape of Dartmoor was much more visible and accessible, you could do proper research because it was easy to get out to these sites. (Tom Greeves interview 2018)

This conservationist (who has worked on Dartmoor's Commons for decades trying to gain consensus) has been asked whether hill-farming is integral to the management of the cultural / historic landscape. The answer marks a step away from a consensus around pastoral systems delivering multiple conservation outcomes and moves more towards the need to deliver conservation outcomes by whatever system actually works.

... that question on cultural landscapes, it may not be that you try to deliver those things through grazing, it may be that you have to keep them through mechanical means or spraying, or really targeted focused grazing which has nothing to do with Common Rights anymore but is focused on delivering conservation outcomes. (Cons012)

8.3.3. Impacts on the cultural landscape: archaeology and hill-farming

In the early days of the ESA one of the key drivers for reducing stock numbers and smaller swaled areas was the restoration of heather which has reduced substantially during the headage days era. Here Greeves comments on that policy as it impacts the vegetation and the hill-farming community.

Little did we realise that pursuit of “heather” as the optimum vegetation cover was to have the most deleterious effect, not only on moorland, but also on the community of farmers and their families.

Within a few years, reductions in stocking levels for sheep and cattle in order to boost heather were already causing problems. By 2000, some farmers were saying they had difficulty in gathering animals owing to vegetation growth (mostly gorse and Molinia grass), and tensions were arising between Commoner and Commoner where none existed before.⁵⁷

Despite more than twenty years of continuous reduction in stocking levels on most of Dartmoor’s Commons, the policy has been a failure for Natural England, even according to their own criteria. (Greeves 2015 pp29-31)

8.3.4. A call for eco-culturalism

Greeves describes himself as a “Cultural Environmentalist” and has called for “eco-cultural zones” which reflect landscapes rich in wildlife and historic features. Here, he laments the fact, in his view, that the nature conservation interests have dominated at the expense of cultural interests.

I think it is one of the fundamental interesting things about landscape and the post-war conservation movement in Britain - but I'm fascinated by the fact that large chunks of Dartmoor are designated as SSSIs purely for nature, natural environment reasons and some geological reasons occasionally, but they could equally be cultural, could have been, had a different designation for cultural content and this just reflects the imbalance in the post-war period of nature conservation dominating all thinking about conservation. (Tom Greeves interview 2018)

Here he makes the case for considering Dartmoor as an eco-cultural zone.

In my view the cultural landscape of Dartmoor is second to none, I'm not a great one for World Heritage Sites, I think the whole world is of world heritage status, but it's clearly world class what we have on Dartmoor, it's absolutely exceptional that you can see 5000 years of human activity in an afternoon stroll, very few places in the world you can do that safely, and the threat - if you can call it that - is that society is not threatened with destruction, but they

⁵⁷ A reference here to the ‘cutting the cake’ issues raised in Chapter 6

are threatened with becoming invisible and less accessible through vegetation growth, that is still the main threat and we could so easily change that by more nibbling mouths which would improve things enormously, I don't think that would compromise the interest in the natural environment. (Tom Greeves interview 2018)

Here he explains why he considers that cultural interests have been dominated by natural ones.

So, it's partly the problem of the newness of a cultural interest, very few, a tiny number, a handful of people who are professionally involved in that so they are up against a much bigger and more established nature conservation movement. I'm not against that at all but what I am concerned about is the imbalance between the two, the lack of understanding of landscape. (Tom Greeves interview 2018)

And finally, Greeves calls for change to redress the balance between culture and nature and argues that the local knowledge of the local hill-farmers should be utilised in the search for solutions and consensus.

Regarding moorland Dartmoor, the stranglehold of Natural England must be challenged and removed. Natural England has no right to upset the age-old social fabric of Dartmoor and traditional animal husbandry, nor to obscure one of the finest cultural landscapes in the world. More animals must be allowed to graze. Urgent research is needed on how livestock and vegetation were managed over the past 100 years – astonishingly, the graziers have never been asked how they, their parents and grandparents managed the moorland and achieved a landscape and mosaic of vegetation which was then considered valuable enough to be designated as SSSIs in the 1950s and 1970s. (Greeves 2015 p37)

8.3.5. Conclusions

Tom Greeves' campaign to highlight the plight of Dartmoor's archaeological features ties in closely with issues identified in the *Molinia* and under-grazing narrative in chapter 7. The attempts at trialling solutions on Gidleigh Common have also highlighted the challenges involved with collectively managing Common on Dartmoor. The issues identified in Chapter 6 (the impacts of the agri-environment schemes on hill-farming) e.g. broken lears, reduced stock numbers particularly cattle and the uneconomic nature of hill-farming explain why finding solutions to graze off the *Molinia* and keep the Western gorse in check are still proving problematic on Gidleigh Common despite a willing of the hill-farmers and NE to find solutions.

The ideas put forward by Greeves relating to the need for eco-cultural zones where archaeology and nature are given equal status have not been taken up. Indeed, new

tensions recently emerged between archaeologists and nature conservationists as some of the latter believe that archaeology is being given undue precedence over nature conservation. These tensions have increased after research was published that highlighted that nature within National Parks appeared to be doing no better than within the wider countryside outside of National Parks (Cox et al 2018). This work has subsequently been identified as an issue for resolution within the Landscape Review (Glover 2019).

The government 25 year plan for the environment (Defra 2018) called for nature recovery areas, this was then prioritised for National Parks with the Landscape Review (Glover 2019) and identified for action within Dartmoor Management Plan review (DNPA 2020b) where it was recommended that within the nature recovery areas (yet to be identified) nature would take precedence over archaeology and if the latter were to be detrimentally impacted it would be recorded before nature took its course. This issue is further discussed in section 9.2.2.2.

9. Re-wilding: another counter-narrative emerges

9.1. Introduction

The arguments and conflicts on the Dartmoor Commons have, as the previous chapters have outlined, been centred around the notion of over-grazing by livestock and unsustainable swaling. As a result, the over-grazing narrative has become the dominant story on the Commons of Dartmoor. As chapter 6 demonstrated the situation is actually much more nuanced, as a result of the changes in farming practices imposed by the various agri-environmental schemes many areas on the Commons are under-grazed and are now dominated by large swathes of *Molinia*, gorse species and bracken which has substantially reduced the areas of palatable grazing - this has resulted in stock relocating to the reduced areas of sweet grass which as a result has become increasingly overgrazed.

Efforts have been made to counter these trends via initiatives such as the Moorland Vision (Waldon 2006) and the DFF trial (Manning 2017), as described in chapter 7, but to date these have failed to provide solutions on a landscape scale. Indeed, this impasse was highlighted as early as 2009.

The optimal balance between a farm's satisfactory economy, the common grazing's place in that and the incentivisation of the maintenance of moorland vegetation in the interests of biodiversity, archaeology, the scene and access to it, clean water and carbon storage in the peat is still to be worked out.

(Mercer 2009 p320)

The deterioration of the condition of many of Dartmoor's Commons has continued despite the detailed prescriptions put forward by EN/NE and implementation of these by Dartmoor's hill-farming community. As a result, very few of the stakeholder groups involved with Dartmoor are content with the condition of many of the Commons on the moor. Partly as a result, a series of counter narratives had emerged between the late 2000s and the mid 2010s and these put forward new ideas to tackle the perceived problems. The re-wetting and re-grazing narratives have been discussed in chapter 8. This chapter looks at re-wilding and its rapid and unexpected emergence as a viable option on Dartmoor.

9.2. Attitudes to the re-wilding debate on Dartmoor

The invitation of the environmental campaigner George Monbiot by the DNPA to speak at the biennial National Parks Conference in 2015 brought the issue of re-wilding on Dartmoor to the fore (Colston 2015) and the concept has been widely debated ever since. His view that Dartmoor was being “sheep-wrecked” and was being unsustainably burnt deeply offended many hill-farmers, shocked some conservationists but appealed to others, it also challenged the concerted attempts by the National Park Authority to build a consensus around the need for the moor to be managed as a pastoral landscape in line with its designation and a National Park and a Category V “cultural landscape” as defined by the IUCN (Sandom & Wynne-Jones 2019).

9.2.1. Hill-farmer attitudes to re-wilding on Dartmoor.

All of the hill-farmers interviewed were well aware of re-wilding as an issue and the majority were also familiar with the ideas of George Monbiot. For many it was an issue they had thought a great deal about and had read around the topic. As a result, there were a variety of views and not all were opposed to the concept in some form or other.

9.2.1.1. Types of re-wilding

There was a clear understanding amongst a number of hill-farmers that the meaning of the word re-wilding was contested and had many interpretations.

there are so many different things that people mean, different things for re-wilding; there is the extreme re-wilding and [there is] rewilding at a lower level when you consider having areas that you do not graze things like that I think are important (Hill-farmer1-2)

With regards to “extreme re-wilding”, interviewees were referring to the ideas of Monbiot and his desire to see top carnivores re-introduced. These are universal and typical hill-farmer reactions to his views.

He’s a crank isn’t he, it’s not going to happen. It’s just not going to happen..... that’s what you read in the papers about rewilding with wolves and things, it’s just not going to happen. (Hill-farmer10-1)

It makes good press doesn’t it? The Guardian love it, it gets people to read about it and it ruffles the feathers of a few farmers, it sounds great but it’s not going to happen (Hill-farmer21-1)

I know everything has got a right to life and all the rest of it but I can't see having wolves and lynx, certainly on Dartmoor I can't see a place for it. I can see some of the reasoning through having higher predators because it does make the rest of the system work, but it doesn't work in modern day living, the right to roam and all the rest of it. (Hill-farmer1-1)

If what is meant is some of these more outlandish reintroducing wolves and whatever well ... you can forget it. (Hill-farmer4-1)

[Regarding wolves) *Absolutely not, no way. They can stay where they live down out the way, we would have to be faced with one outside the door. Ridiculous. Complete nonsense. (Hill-farmer2-16)*

This response to the prospect of extensive re-wilding on Dartmoor sets out a hill-farmer's fears and opposition to the idea whilst also suggesting that most visitors to the Moor would also be disappointed by such an outcome.

Do I feel threatened? Yes, well, it's one of those things you've got to deal with, but if it did happen there wouldn't be any farming so it would be proper re-wilding, you wouldn't have any people working on the land, which is what as a farmer you've got to champion. On the main Forest, I don't think you would please anybody by doing it because what people love about the Moor, in my view, is they love looking at the scenery and the ponies, if you re-wild it would be impenetrable and who's benefit would it be? (Hill-farmer5-1)

However, whilst there a widespread opposition to top predators and the extensive re-wilding on the Commons with trees and scrub along with the obvious loss of their grazing land and their lears there were a significant minority of hill-farmers who did see that lower level and localised "soft re-wilding" (after Kelly 2015a) might, and in some cases should, have a role to play on Dartmoor. These three examples make that case.

I think there probably are areas that could be re-wilded, not I think common land probably, although even some of the valley areas you could think of some of the Dart valley areas and places like that where stock doesn't go any rate, where in effect you could say where the public doesn't really go alright we are going to re-wild that in terms of allowing shrubs and trees and things into it. I do think there is, if some landowners want... well it's in effect virtually abandonment as far as I can see and if the government and the public want to pay for that, well so be it. (Hill-farmer4-2)

So, where you've got coombes and water I would re-wild, let them go back to gorse and trees, let them go, and then I would identify patches where you want it grazing and you keep those, don't keep burning different bits, assess what is needed realistically for the stock. It's partly identifying where people want to go like stone rows and stone circles and saying well actually the tourists do not want it to be inaccessible and so the sheep marry up the two, I just

think it's sensible. Any slopes let them go because that will keep the re-wilding water retention people happy because you are not getting erosion on the slopes. (Hill-farmer15-3)

[Commenting on "soft re-wilding"] I personally see that as a future, because we have got to move forwards and I see give and take, and my plan for the future would be let us keep a good lot of stock, let us keep our lears, and we will give you small scale areas where we are not intensively managing it. (Hill-farmer24-3)

9.2.1.2. Re-wilding is already happening

Whilst the majority of hill-farmers considered re-wilding to be a future threat or possible localised opportunity a significant minority saw it as a phenomenon that had already commenced as a result of the restrictions placed on farming with the advent of the agri-environment schemes.

We've had re-wilding for the last 20 years under ESAs haven't we? With everything just growing its own way. (Hill-farmer26-2)

Well they are massively overgrown. So yesterday I done a bit of a ride and came back, well blow me down it is just unbelievable the growth that's there. Unbelievable. (Hill-farmer8-2)

My duties as a Range Clearer over the years we used to clear the Artillery Range [of stock so that live firing could take place] from Hangingstone across to Kneesit and back and we used to have to walk that every day and clear it when they started it and it was hard enough then but it's so hard now with all the growth that's out there and it's all due to stock. We used to clear a lot of sheep and cattle out there, on the Commons and the Forest but the Forest especially but now very little, very little, it's a stock thing really..... because the Molinia grass hasn't been tackled it's like clumps, you say it's bad to walk up on the Forest it is bad, if you walk from the back of Cranmere across to Kneesit and across the back of Black Hill that takes some doing now, it's not grazed and that was always sort of a valley. (Hill-farmer10-2)

Well they are some of them, like inner Commons [the Venville Commons] that have been abandoned and they're going back to woodland, but that's probably inevitable there are some parcels around the edges of Dartmoor, parcels of Common Land that aren't connected to the bulk of Dartmoor and one of them is now a designated woodland, there is virtually no grazing there. (Hill-farmer5-2)

A small minority of hill-farmers believed that re-wilding would not persist as the early stages of the process involved a large build-up of *Molinia* and gorse which posed a huge wildfire threat because of the "fuel load".

[Will Dartmoor re-wild?] I don't think it particularly will because of the fire issue. Yes, there's too many people using it out there, to not get fires. The fires are not caused by Commoners these days, they are caused by members of the public. The trouble is the more it re-wilds the less Commoners you will have out there and at the moment the Commoners are the only

ones who can really put the fires out fairly efficiently and they won't be up there [so wildfires will become more frequent and extensive]. (Hill-farmmer7-3)

9.2.1.3. Re-wilding and the blanket bog

All but one of the hill-farmers interviewed considered that re-wilding on Dartmoor was associated with the spread of shrubs and trees – a consequence of the abandonment or a much-reduced grazing usage of the Moor. One hill-farmer however talked at length about re-wilding in the context of the extensive areas of blanket bog on the high Moor. Pristine blanket bog is a natural climax habitat and in Chapter 9.2. I will look in detail at the wider attitudes of the various stakeholders (including hill-farmers) as they relate to the pilot re-wetting projects that have been undertaken and are proposed on a number of small areas of blanket bog on Dartmoor. This section looks at blanket bog restoration as a re-wilding initiative and considers the potential benefits and threats from one hill-farmer's viewpoint. Whilst it is a singular opinion it does represent a wider perspective which is gaining increased political support in light of the threats faced from climate change and the role re-wetting blanket bog could play in conserving carbon stores and sequestering additional carbon dioxide (Gallego-Sala et al 2016). Additionally, it is acknowledged that re-wetting blanket bog can play a vital role in restoring animal and plant communities in these damaged habitats (Minayeva et al 2016).

When this hill-farmer talks about “honesty”, they mean that as the blanket bog is degraded and has a substantially lower water table than would be found in a pristine system it has allowed stock – both sheep and cattle, to graze in areas where historically they would have been unable to enter due to the boggy conditions.

I think that we need more honesty about peatland restoration and its role in re-wilding because at the moment we have this huge area in the centre of Dartmoor that's a big bog - a degraded blanket bog.

If that blanket bog was restored, it doesn't need any grazing, it is a climax community and it will sit there and it doesn't need animals.

At the moment I think we have a lack of honesty around the fact that if it's restored blanket bog, it is a desperately unappealing place for livestock, even cattle aren't that keen on it and they can get bogged down and that they are almost impossible to get back out once they have got in there. (Hill-farmer2-3)

Ironically, very large areas of the high Moor's blanket bog are currently dominated by the extensive stands of under-grazed *Molinia* as discussed in Chapter 6. And as Chapter 7 showed there are a number of initiatives and attempts to reduce the vigour and density of the *Molinia* in these areas via the DFF project so that the areas can be effectively and extensively grazed again. The implication being therefore that if Dartmoor's blanket bog is re-wilded by a series of restoration re-wetting schemes then the overall area available for grazing on Commons with blanket bog would be substantially reduced.

You can graze around the margins of blanket bog but that land will be harder to manage [as it would be wetter] and my worry is that there will be a reduced area for Commoners to exercise their rights. (Hill-farmer2-3)

Re-wilding along with its associated re-wetting could also impact on people walking on the high Moor's blanket bogs and their margins, however in my experience (both as a walker and researcher for this study) the number of people affected would be very small as the blanket bog areas of Dartmoor attract very few walkers on account of their remoteness.

... it would push people walking onto those drier areas so you would have animals pushed out of the restored blanket bog area and they would also be the areas that are more attractive for people to walk on, so I think you could get more animal and people conflict. (Hill-farmer2-3)

This hill-farmer is then concerned that without adequate planning and open discussions amongst the various stakeholders it might favour the 20 or so "large" Dartmoor hill-farmers at the expense of the "smaller" ones

I think that would then polarise more to bigger farmers as well because it would be more risky for little farmers to put a small numbers of stock out. (Hill-farmer2-3)

The suggestion is also made that to date the discussions around re-wilding on Dartmoor have been too simplistic, for example there are some that argue that the bioclimatic envelope for temperate rainforest in Western Britain covers all of Dartmoor (Ellis 2016) and as a result tree cover should be allowed to re-establish on Dartmoor's peat soils.

And I think these are big conversations that we need to have and if you do want to go down the peat restoration route which is part of the rewilding, there are some people that want to go for restore peatland with woodland and no grazing, that I don't think that's what most of society wants to see, I think people like wide open spaces, they like big views, they like all

those things. I think there is space for somewhere on that continuum which is some areas of peat being restored, so that you have some areas of functioning blanket bog which would be great for biodiversity and there is an opportunity for some soft scrub coming up but I still think all of that needs to be grazed and grazeable to make a multi-functional landscape. (Hill-farmer2-3)

Finally, this hill-farmer argues that if the commoning system is allowed to fail and grazing stock ceases in many areas then this could have implications for future land use practices including the re-emergence of conifer plantation afforestation.

But my worry is that if you lose people commoning then you will end up with a very polarised thing, that you could end up with blanket bog that's been restored and then if nobody wants to exercise their rights I fear that you will get afforestation and not with native trees but with Sitka [on the non-blanket bog areas]. It's that long term landscape change and the impact on archaeology as well, which I think really concerns me, that creeping intensification of the forestry. (Hill-farmer2-3)

These issues will be re-visited in section 9.2. but one hill-farmer clearly thinks that a drive for extensive re-wilding and re-wetting on Dartmoor may lead to unintended consequences and as result needs to be discussed more openly and critically.

9.2.1.4. Re-wilding and the agendas of government and the wildlife lobby.

In January 2018, Michael Gove, then Secretary of State at Defra made his Age of Acceleration speech at the Oxford Farming Conference where he introduced the principles which would underpin his proposed Agriculture and Environment Bills (Gove 2018). It is at this point that clarity began to emerge on what a move away from area-based subsidies to “public money for public goods” might mean for agriculture. Around this time Gove also appointed Ben Goldsmith to the Defra Board. Goldsmith began to make strident comments about the need to change farmland management practices and frequently argued for extensive re-wilding schemes and the need to return extinct species such as beavers and lynx to England.

Talking about Dartmoor in March 2018 on Twitter, Ben Goldsmith described the area as follows “Dartmoor “National Park” – an utterly over-grazed, denuded, treeless, flowerless, birdless wasteland” (Colston 2018). Ironically the places he was describing and illustrating on his Twitter account were in fact prime examples of areas which were now chronically under-grazed as a result of the destocking which had taken place following the introduction of the agri-environment schemes.

Nevertheless, such comments from a man in his position, were picked up by the

farming community and the conservation organisations and perhaps for the first time since Monbiot had raised the opportunities for re-wilding on Dartmoor in 2015, re-wilding had gained some credence. Some hill-farmers began to fear that re-wilding initiatives might become established practice. This hill-farmer details their fears.

Well I'm not optimistic in general because I think the wildlife, rewilding brigade, I mean Ben Goldsmith the director of Defra is horrific, he wants wolves and lynx back up there, our Commons are not big enough for this. (Hill-farmer19-3)

It will probably be a complete no-go area because the wildlife lobby will have won, there will be no grazing up there, we saw what happened during Foot and Mouth, with nobody walking up there and no stock up there. (Hill-farmer019-3)

Most perceptively, this hill-farmer had also noticed a change that was taking place amongst elements of the conservation movement. Prior to the appointment of Gove and Goldsmith at Defra, mainstream conservation organisations involved with Dartmoor had argued for a reformed pastoral agriculture which would deliver biodiversity, historic landscape and farming outcomes. Now there were a number of organisations who began to believe that the pastoral coalition had failed and that in its place there were opportunities to improve wildlife on the Commons of Dartmoor via various types of re-wilding initiatives ⁵⁸.

so although the idea fills them with horror they [Dartmoor hill-farmers] kind of brush it under the carpet because they don't believe it could ever possibly happen, but the wildlife brigade have got so much money behind them, huge sums of money behind them, if you look at the size of some of those charities and number of members they have got, I think the birds have huge power, (Hill-farmer19-3)

9.2.2. The evolving nature of the statutory bodies' and conservationists' attitudes to re-wilding

During the course of my research (which commenced in 2016) attitudes towards re-wilding on Dartmoor have evolved considerably and continue to do so. This section aims to capture some of this debate.

9.2.2.1. Inherently opposed to re-wilding

Prior to 2015, the majority of conservation organisations would have agreed that the re-wilding of the Commons of Dartmoor was not something that they wished to see

⁵⁸ I make these comments based on my own personal experiences following on and off the record conversations with representatives of various conservation organisations (statutory and non-governmental, national and local) involved with Dartmoor.

occur. By 2020 this view had become much less dominant. This has partly happened as the perceived view of what re-wilding actually means has also evolved, no longer is it just a coded way of arguing for huge areas of self-willed land under the control of wild herbivores and their associated predators. Today, many see it as a way of creating “raggedy round the edges” and producing a mosaic of habitats with richer biodiversity without the need for apex predators, although many see a role for keystone species, specifically beavers. Whilst many prefer to avoid the actual term “re-wilding”, as such language is toxic, the quest for a wilder Dartmoor is supported now by many.

Today, those that generally oppose re-wilding include those who are interested in the conservation of the moor, on landscape grounds as an open space; those who have historically invested their time in trying to restore existing habitats and species via a modified form of pastoral agriculture and those who are aligned to seeing hill-farming on the Commons.

This conservationist is opposed to re-wilding on landscape grounds but does acknowledge that improvements for wildlife are needed but argues that the wildlife which needs to recover and improve is one which has been produced as a result of the historic grazing and swaling regimes.

Well I am campaigning to stop the rewilding. I think it's a big concern everywhere about lack of biodiversity, that National Parks are no better than anywhere else and of course they should be, much better. So yes. I think it is a real worry. (Cons6)

Re-wilding is seen here as a divisive term and is a concept which only really considers nature when Dartmoor as a National Park has been created to conserve a wider range of outcomes such as the archaeology, access and landscape.

Rewilding isn't a term that I'm particularly fond of or one I would have ever come out with in any public forum, I think it's a pretty divisive way of looking at things. To me, it's at one extreme end of a range of options for management and it's an option that doesn't really recognise a lot of the other factors that you would want to take into consideration, so it just seems a non-starter for me. (Cons2)

These comments refer to a Common where a new owner wants to see a different type of management from the one prescribed by NE and one that might see some scrub encroachment and some re-wetting of valley mires.

You have an owner who has moved in with his own interests and is not understanding the local situation. I wouldn't agree with that owner and his attitude to people that have farmed there for generations, it's not right. I'm not too sure what we can do as a Government organisation to stop that, just to say sorry you are wrong, if we don't maintain some sort of management up there we are in trouble and there will be those extremes. (Cons16)

Additionally, the point was made that using the language of re-wilding would adversely affect relationships with those signed up to the agri-environment schemes. However, it was conceded that allowing in places a richer mosaic of habitats to form could be beneficial.

In my role I wouldn't dream of using the re-wilding word, because it's whatever racy politicians said, just because that would have an effect on the relationship my team would have with people over the years to come, and I think that's a shame but I think a bit more raggedy round the edges is how I would describe it from my nature conservation perspective I suppose. (Cons16)

Finally, it was pointed out that a great deal of money had been invested in Dartmoor and its hill-farmers over the years to pursue a pastoral form of agriculture and to abandon that approach would harm livelihoods and would prevent the long-term restoration of habitats.

....my thing is, we put £250 million into Dartmoor we can't just walk away from it (Cons16)

This interviewee who champions Dartmoor's hill-farmers and their way of life suggests that a pastoral landscape will survive into the future as long as future funding schemes (such as "public money for public goods") provides sufficient income for farmers. If it does not then abandonment of the Commons may occur.

My suspicion is that Dartmoor won't look too different in 30 years time. There will be commoners and there will be farmers on the high moor but how many and how effective they are I don't know. So much depends on what happens in the next couple of years you know, if the Treasury cuts the amount of money that is being spent on the environment and on farming by a third or two thirds depending on who you talk to, and that's spread as thinly as they seem to suggest it might be, then we might have a real crisis on Dartmoor. But we only change things if there is a crisis so maybe one day not having anybody putting their animals on the common would initiate, there would be a response. Maybe. Maybe not. They might just say "oh that's alright" because they don't understand. the worse scenario is the new ELMS scheme gets launched, the current agri-environment schemes have all finished, they go into it, it doesn't produce enough money so they can decide whether to go in or not, some will decide the best thing to do is to focus off the hill, so we would see a shift off the hill. (Stat-body1)

This academic, talking about the politics between conservation organisations and hill-farming groups nationally, suggests that the previous pastoral coalition of interests is under considerable pressure, with some of the conservationists seeing the shifting government policy agenda as an opportunity to capitalise on wildlife gains in the uplands as the expense of traditional hill-farming activities.

I wouldn't say it is fragmented but I think it is fissured, the coalition is not going the way it was because the rules of the game have not only been changed but they are unclear. It is fissured and very unclear what the future is at the moment. (Academic001)

As pastoral coalition began to show signs of cracking it was observed that some conservation groups were much more interested in the promotion of their wildlife agenda than the well-being of rural farming communities.

And there's been a slightly distressing lack of concern for the social, economic and psychological aspects of farming communities in some quarters. (Academic001)

9.2.2.2. Warming to the idea of some form of re-wilding

As part of the review of the Dartmoor National Park Management Plan (DNPA 2020b), various stakeholders have been reviewing the Moorland Vision and whilst this still sees Dartmoor as a predominantly pastoral landscape managed by hill-farmers it does also acknowledge that some areas of the moor will revert to woodland. Commenting on re-wilding in this context an Officer from the DNPA stated the following.

I think Monbiot has deliberately set himself out on the extreme side of re-wilding, but re-wilding is a complete spectrum, so we had Ben Goldsmith down, and you put it in your blog [Colston 2018], and we thought he's now been appointed to Defra's Management Board, if he's saying that [Dartmoor is sheep-wrecked] around the management table in Defra that's not helpful to us. We had him down and we took him to Haytor and he looked at Smallcombe Rocks down the brook and his tweet afterwards was about landscape scale conservation on an epic scale, so National Park farmers, landowners, conservationists are working together, and it's almost like a fashion re-wilding at the moment and it has gathered momentum. We need to work out what it means in practice for Dartmoor. And I actually think the visioning process that we are trying to go through at the moment with the Management Plan is the right way to do that. And if I was a hill farmer I would be bit concerned about Monbiot's vision because I don't see where I fit it, but if you look at the Moorland Vision that's re-wilding, elements of it. (Stat-body2)

This retired manager from NE gives a range of professional and personal views

which indicates how thinking on re-wilding has evolved over the years.

... the landscape we see on Dartmoor at the moment is a human construct with environment change coming into play, it was designated on the basis of some sort of image of a landscape immediately pre-war really.

... we had always been quite keen on – re-wilding isn't quite the right word - it's about allowing the edges of the moor to become softer and more diverse, it was about allowing woodland to encroach up valleys and it was about making the edges of the Commons more wavy and all that sort of stuff.

I've always seen the rewilding concept on Dartmoor as an opportunity to address issues. One is what the hell do you do if the farming community withdraws for whatever reason; they become old, the national government funding goes, policy changes, whatever. What do you do? And I'd rather see us being on the front foot and going yes, we want re-wilding but we need to reflect and respond to concerns like the archaeology. (Cons4)

Regarding a pastoral landscape on Dartmoor in 50 years time, the following comments were made.

I don't think so actually, I don't think it will survive in that way. I think there will be a continued squeeze economically on hill farming, a continued squeeze on British farming full stop. I don't think people generally notice incremental change, I suspect an awful lot of it will come out of production. (Cons4)

And this from a serving senior NE manager.

Well I think it gets talked about by more significant people like the people you have mentioned [Gove and Goldsmith] than it was 5 years ago. I think policy, if you read Gove's full rounded statements they are about support for farming but also to provide public goods; I think what he is saying is actually very wild places could be very good and nothing to fear. If I think of Dartmoor I suppose I think of the place as good, you look at some of those moorland edges from a nature conservation point of view and I think of birds, dragonflies and butterflies, they were the things that grabbed me. You know I don't think we should fear some blending of the edges. Equally isn't it lovely to still think the most south-westerly breeding waders [Dunlin] can be up there, so those big open spaces are necessary. I think there is room for everything but I think if you are alluding to the fact that we might have more wilding now I think that is probably inevitable (Cons15)

The strategic view of organisations like the DNPA and NE in light of the views and policy announcements of Ministers such as Michael Gove have undoubtedly evolved – re-wilding in places particularly in river valleys and moorland margins are seen now as inevitable and even desirable in the light of the drivers of change like climate change and agricultural reform.

9.2.2.3. Positively supportive of re-wilding

In my experience the views of a number of conservationists involved with Dartmoor have changed over the recent years and many have become much more supportive of re-wilding even if that means the replacement of designated habitats by scrub or woodland. However, interviewees, when being formally interviewed and recorded, often expressed more conventional views when compared to comments made “off the record”.

This conservationist, who had been involved with the management of Dartmoor’s Commons for decades was one of the few who argued vehemently for change and indicated that re-wilding provided some of the answers. Asked whether re-wilding would force hill-farmers off the Commons against their will, this was the response.

But it's not enforcement in any sense because they only reason they are up there is because of the public purse, you take away the public purse, it's not enforcement, its economics.

.... the gradual wooding over if you like of some bits is not the end of the world, and people who pretend that is I just don't buy that argument that it's the end, it's an apocalypse

And put bluntly wood pasture seems to be the great answer to everything in conservation terms in the British Isles doesn't it, if we could create a wood pasture up there over large areas, more open in some places, more closed in others, that changed over time, that would be a wonderful outcome; great place for people to be, great place for wildlife, great place for water, still grazed but on very much more extensive basis (Cons12)

This conservationist argued that beavers should be re-introduced to suitable areas on the moor so that they could re-engineer habitats and create new ones.

Something like the beavers, and I say this because we are pushing for them to be introduced, but the beavers do modify the habitat very significantly and lots of other species could benefit. Beavers are by no means the only one, but I think I would just start by saying that, as well as what is practical, what actually brings the greatest benefit, so it could be something quite humble, that could make a big difference to parts of Dartmoor, not just big charismatic things. (Cons11)

Talking about economic factors affecting upland rural communities this conservationist said the following.

The impact on the moor and the communities around here is going to be changed more by broadband speeds than it is by sheep in the uplands. It's not sheep farming that keeps...especially around here. And I'm sceptical about whether it does even in places like the Lake District. Yes, there is a sentimental view that we want sheep in the uplands, and

probably we will always have sheep in the uplands because people like to keep them and there are people who love sheep. But is it economic? No. Should we be paying for it? No.
(Cons7)

And asked whether he thought that there were some areas of Dartmoor where re-wilding was already happening, he described Buckfastleigh West Common and he listed the benefits that he considered were accruing as a result.

So I think, I wouldn't use the word rewilding and I wouldn't use the word abandonment, but I think natural regeneration is happening in some places over on Buckfastleigh West, which is beneficial for a range of outcomes. That might be the actual flood management, it might be the water quality, it might be de-compaction, it is biodiversity in some of those areas (Cons7)

This conservationist and committed re-wilder argued that as hill-farming on Dartmoor was so reliant on subsidy and had been for a very long time he could not see hill-farmers adapting their practices but nevertheless significant areas of the moor would re-wild in the coming years as a result of abandonment.

So sometimes I think you just have to accept there are two ways of re-wilding, one is you pay people in a structured and organized way, and the other is the system collapses and it comes from the bottom up. So, I think Dartmoor is the latter (Cons14)

9.2.2.4. Monbiot and re-wilding revisited

When listening to or reading the books and articles written by George Monbiot one gets the impression that his vision and ambitions for re-wilding the uplands are spatially very extensive and this is one of the reasons that hill-farmers have been so opposed to his plans as a re-wilded landscape would exclude them from their grazing areas. However, at a recent public debate entitled “The battle for the countryside: Britain should re-wild its uplands” Monbiot said the following

the mass restoration of ecosystems, not in all the uplands by any means, but in some large areas,

and

I would like to see at least 10% of the British uplands become re-wilded. I'm not talking about a blanket rewilding by any means, but this is the most appropriate place for trees to grow because you are not displacing fertile land which should be used for growing food. (Monbiot 2018)

A number of interested parties I have discussed this with, have commented that the 10% figure he used is considerably lower than they had expected him to want (e.g.

Professor Michael Winter and Mr Kevin Cox pers. comm). In a Dartmoor context the re-wilding of 10% of the Commons would equate to around 3500 ha and whilst this would have a detrimental impact on those hill-farmers involved (assuming that they were not supportive of such an outcome), re-wilding on this scale would not undermine the viability of hill-farming on the moor overall. I have commented in the past that Monbiot often takes an extreme position in order to create a new space for debate on a previously taboo topic (Colston 2015b), perhaps the 10% quote was a specifically conciliatory comment and an oratorical device deployed so he could win the re-wilding debate!

A number of those interviewed and cited in section 9.2.2.3. concluded that they considered that some re-wilding on Dartmoor was inevitable and indeed desirable (e.g. Stat-body2 and Cons15) and that would seem to align with the “10%” target. Section 9.2.4. will discuss this spatial issue further in light of recent policy developments.

9.2.3. Archaeologists’ views around re-wilding

Dartmoor as well as being an important designated habitat for its wildlife it is also internationally important for its suite of archaeological features – forming a palimpsest dating from Neolithic times to the present. For archaeologists, it is important that Dartmoor’s historic landscapes are open, visible and not covered in enveloping vegetation such as scrub, *Molinia* or bracken. It is therefore not surprising that the archaeologists interviewed were not supportive of widespread re-wilding on Dartmoor’s Commons.

One of the concerns expressed is that re-wilding takes little or no account of the historic or cultural interest of an area. These tensions surfaced nationally when the Lake District was designated as a World Heritage Site in 2017 (see Colston 2017) and similar issues were raised by this interviewee.

Dear old George Monbiot, I agree with a lot of what he says but he hasn't quite got it ... the cultural thing. He doesn't understand it at all, so he bangs on about the plague of white sheep, but he has no deep understanding of the cultural dimension of our uplands or any landscape, but he has been very influential and his books and writings are very interesting in their way, but the whole re-wilding notion seems to me to lack this understanding of what we are doing as humans in this landscape and where we come from. (Arch2)

This archaeologist when asked what he didn't want to see happen on Dartmoor replied as follows and noted that an unfarmed landscape would lead to unintended consequences.

Rewilding. Controversial thing to say isn't it? What don't I want to see happen? I don't want to see a large expanse of Molinia, I don't want to see an under-farmed landscape. I don't want to see a wooded upland. I don't mind little bits and that mosaic effect but I understand the consequences that could have for farmer incomes, and if farmer incomes drop and if farmers aren't rewarded then I think we will have a landscape with severe unintended consequences. But ideally a managed farm landscape which is what it's been for the last 6000 years.... (Arch1)

Another archaeologist expressed similar concerns about re-wilding.

It could be potentially a big threat if someone is proposing for an area of Dartmoor field system, reeve system, to scrub up yes, absolutely. We don't want to lose that open landscape. Maybe some of the ceremonial sites as well, you'd lose them, it's probably been open landscape for at least 4 thousand years. (Arch3)

Whilst there is a clear fear around the impact that a re-wilded landscape would have on Dartmoor's historic features there is also a tension between the management of the historic environment and the conservation of biodiversity in a pastoral landscape. In particular the desire of archaeologists to see tightly grazed grassland around features so that they are visible and the wishes of some conservationists to see a more heterogeneous landscape (a form of soft re-wilding) where species such as scrub nesting birds can flourish.

So, I think we have to set out what we want, set our store a lot clearer. I know we are having all these meetings at the moment, more dialogue is always the way, and we will find hopefully some areas in common where we can let bits grow up but keep others more tightly grazed. (Arch3)

And here that tension is expressed from a nature conservation perspective, where the interviewee considers that the archaeological features have been given undue precedence over the biodiversity.

... the Dartmoor vision [has] rather skewed the outcomes, on Holne Moor particularly, towards the PAL - the Premier Archaeological Landscape - and even though that is only on a portion of the moor the Park is trying to, have multiple outcomes, make sure the archaeology is protected and visible, which is one of the issues I think what we now have is the evidence, the Dartmoor Vision, that Holne Moor is one of the key hotspots for biodiversity on

Dartmoor..... we can demonstrate that this is a biodiversity hotspot and I think that isn't given the priority that it ought to be (Cons7)

It is argued by some that the conservation of biodiversity should take priority over the historic landscape and quote the Sandford principle.

"National Park Authorities can do much to reconcile public enjoyment with the preservation of natural beauty by good planning and management and the main emphasis must continue to be on this approach wherever possible. But even so, there will be situations where the two purposes are irreconcilable... Where this happens, priority must be given to the conservation of natural beauty." (Lord Sandford, 1974)

Ensuring that archaeological features are kept open, it is argued, is to facilitate public access and that archaeological features are man-made and therefore do not constitute "natural beauty".

And that means that [the DNPA] are not looking towards the founding principle of the National Parks, the Sandford principal which is "all things being equal, the ecology of the National Parks should take precedence". (Cons7)

In light of the increasing popularity of re-wilding principles in government and their funded agencies along with the desire to see National Parks "have a renewed mission to recover and enhance nature" to counter "the crisis of nature" (Glover 2019 p14 & 11) it seems that the existing tensions between nature conservationists and archaeologists will need to be carefully managed if relationships are not to deteriorate.

9.2.4. Concluding remarks: is the re-wilding concept turning full circle?

When this research was commenced in 2016 re-wilding was an idea fighting to gain traction but by 2020 re-wilding principles were becoming enshrined in policy documents.

The RSPB published an article in 2018 highlighting that within England's National Parks, the condition of their SSSIs was worse than in SSSIs outside of National Parks (Cox et al 2018). These findings appeared in the Landscape Review when discussing National Park Management Plans (Glover 2019 pp12-13) stated

We would like to see these plans set ambitious proposals to support the climate challenges we face, not least on tree planting and peatland restoration, as well as how to support wilder areas. They will contain bold plans for national landscapes to become leaders in Nature Recovery Networks, thinking across and indeed beyond their landscapes, as no individual

landowner or non-government organisation can do. As John Lawton's Making Space for Nature review said so clearly, we need "more, bigger, better and joined up sites".

In response, the recently published Dartmoor National Park Management Plan 2020-25 (DNPA 2020b) states

In nature recovery areas (to be defined), the primary focus will be nature and letting natural processes take their course. Where potential conflict exists between nature recovery schemes and archaeology, an initial assessment will be made of the current understanding and significance of archaeological features and any possible mitigation measures identified. Where conflicts cannot be avoided, records will be made if there is potential for the asset to be lost or changed. p38

In a short period of time re-wilding has moved from being seen as a maverick concept to one that has now been incorporated into policy. It is also implicit in the above DNPA statement in the "nature recovery areas" wildlife will take precedence over archaeology irrespective of whether it creates more net gain over what already exists.

The debate is continuing and the designation of England National Parks as IUCN Category V cultural landscapes is being challenged, for example the Director of Rewilding Britain Rebecca Wrigley called for biodiversity to be restored so that our National Parks can be elevated to a higher IUCN category.

It's as though the UK suffers from cognitive dissonance. We are a country of nature lovers but our biodiversity is poor compared to that of many countries. The environment is now really high up the agenda, the pressure for change is building. We can use the genius of nature to restore biodiversity. This is a huge moment of opportunity. (Rowe 2020 p26).

And most recently three academics and NE's lead conservation advisor in the Lake District called for a "re-imagining of the Lake District" as the World Heritage Designation of that National Park was an impediment to the re-establishment of wild nature and a thriving biodiversity (Convery et al 2020). This is extraordinary as the designation of the Lake District as a WHS on account of its cultural landscapes was controversial (see here for an overview Colston 2107) but was supported by NE. Fracturing and fissuring indeed!

10. Meat, health and carbon – is this new emerging narrative a threat to pastoralism on Dartmoor’s Commons?

10.1. Introduction

During the course of my research a new narrative continued to emerge around the eating of meat - its impact on human health, biodiversity and the global climate - a coalescing of previously well documented research, some new high-profile publications, a new series of campaigns promoting vegetarianism and veganism along with heightened awareness of the “dual crises around biodiversity and climate collapse”. The following three sets of quotes indicate the seriousness that many consider this issue to be as well as the fact that it is a contested issue.

Of all the meats, it is beef that is on average by far the most damaging in its production. Beef makes up about a quarter of the meat we eat, and only 2% of our calories, yet we dedicate 60% of our farmland to raising it. Attenborough (2020 p170)

As people adopt a plant-based diet, perhaps they will become more selective of the little meat they buy, going for quality rather than quantity. People may seek out beef, lamb, pork and chicken raised in ways that capture carbon and promote wildlife. Attenborough (2020 p182)

While arguments rage about plant- versus meat-based diets, new technologies will soon make them irrelevant. Before long, most of our food will come neither from animals nor plants, but from unicellular life. Farming is a major cause of climate breakdown, the biggest cause of river pollution and a hefty source of air pollution. Across vast tracts of the world’s surface, it has replaced complex wild ecosystems with simplified human food chains. Eating is now a moral minefield, as almost everything we put in our mouths – from beef to avocados, cheese to chocolate, almonds to tortilla chips, salmon to peanut butter – has an insupportable environmental cost. Monbiot (2020)

That eating beef is bad for you and bad for the environment is fast becoming a truism without ever having been true. An anti-capitalist doctrine that identified beef cattle with the enemy has spread from the more far-fetched pages of the Guardian via the BBC into the mainstream. Blackett (2018 p184)

This new narrative may well have considerable bearing on the future of farming and hill-farming in particular. Whilst the issues surrounding this were not in themselves novel, over a 12-18 month period they gained considerably increased prominence and became a lobbying and campaigning focal point for many of those wishing to see changes to the way our uplands are managed.

This new narrative could be articulated as follows:

the production and consumption of meat globally, particularly cattle, is having a serious deleterious impact on human health, is driving biodiversity losses and is leading to increased greenhouse gas emissions, as a result the production and consumption of meat needs to be reduced dramatically and people should aspire to diet based around plant products rather than meat-based ones.

This new narrative grew in prominence whilst I was conducting my field work and as a result questions about its potential impact on hill-farming on Dartmoor did not feature in my interviews, nevertheless a number of interviewees did discuss a number of the issues raised when answering some of my questions around the future of hill-farming. At the time the significance of what a small number of hill-farmers were saying was not immediately apparent to me but as the new narrative became more prominent as a result of a number of high-profile television programmes, scientific publications and interventions from prominent scientific advisors, it was clear that it was a relevant and important new development.

What follows is not an attempt at a comprehensive review of the relevant literature but more of an overview of the unfolding relevant issues in what is a highly complex, nuanced and contested debate. From this short overview its relevance to hill-farming on Dartmoor will be established and the relevant points from the pertinent interviews will be set out.

10.2 Meat and health

In 2019 EAT, a global, non-profit foundation established by the Stordalen Foundation, Stockholm Resilience Centre and Wellcome Trust, in collaboration with the Lancet, published the results of a Commission they had conducted “Healthy diets from Sustainable Food Systems: Food, Planet, Health (Willett et al 2019a & 2019b). The headline summary of the report was

Transformation to healthy diets by 2050 will require substantial dietary shifts. This includes a more than doubling in the consumption of healthy foods such as fruits, vegetables, legumes and nuts, and a greater than 50% reduction in global consumption of less healthy foods such as added sugars and red meat

The excessive consumption of red meat in particular has been linked to human obesity (e.g. Mason & Lang 2017 p82) and various cancers (e.g. Mason & Lang

2017 p86). In England the advice from the N.H.S. is to limit consumption to 70g of meat per day as portions in excess of this figure are linked to bowel cancer, high cholesterol and heart disease (NHS 2020).

The report was well received in some quarters but was widely contested in others (Garcia et al 2019). In the context of this chapter, the recommendation that red meat consumption should be cut by over 50% was contested by the livestock industry internationally. The Agriculture and Horticulture Development Board rejected the findings as they apply to the UK, stating that meat was part of a healthy diet and that the report had not taken account of “... *where on the planet food production is most sustainable. Red meat and dairy are produced very sustainably in the UK and should continue to form part of a healthy balanced diet for our growing population*” (AHDB 2019).

The Food, Farming and Countryside Commission agreed that as a society we should eat less meat, but argued that there should be “*no intensively produced meat. No more Concentrated Animal Feeding Operations, or factory farms. Instead, utilise fewer ruminants, in the right ways to convert pasture to high quality protein. Livestock should be part of sustainable circular eco-systems*” (Pritchard 2019).

The report has also been dismissed as it has been suggested that the authors favour plant-based diet and support the anti-meat narrative, indeed many of the authors are either vegans or vegetarians (Blythman 2019). However, despite its critics the report has received global publicity and is regularly cited by those who argue that less meat should be produced globally to protect human health, reduce the impacts of climate change and reduce impacts on biodiversity.

10.3 Meat and climate change

The literature on the impacts of farming and animal husbandry is extensive, Lang & Heasman (2015) pp103-107 set out the global picture which can be summarised as follows.

Agriculture, forestry and land-use account for 24% of all global greenhouse emissions. Modern agriculture produces 14-18% of the global total and farm animals account for 31% of the emissions and the use of fertilizers a further 38%. 36% of the calories produced globally are used as animal feed but only contribute 12% of the calories consumed by humans as meat. Globally livestock produce 14.5% of all

human produced CO₂ emissions along with high levels of methane (2.5gt CO₂e /yr). Beef production accounts for 41% of all livestock emissions and beef produces 5x more emissions /kg when compared to pork and much of this is attributed to the feed that the cattle are fed on as half of all the grain produced in the world is fed to cattle. Producing meat from fed grain is highly inefficient (in CO₂ terms) when compared to grass-fed upland cattle which they consider are ecologically more efficient as there are very limited other agricultural land-use options available in marginal areas i.e. the livestock are eating vegetation which is not suitable for human consumption.

With regard to the situation in the UK as it relates to livestock production Mason and Lang (2017) set out the position which can be summarised as follows.

In the UK emissions from livestock account for 57% of all agricultural emissions, 45% of this is from feed production and processing, 39% from enteric fermentation from ruminant (i.e. methane production) and 10% from manure decomposition. Counter-intuitively they state that extensively produced beef has a higher overall greenhouse gas footprint than intensively raised beef, extensively raised beef produces smaller carcasses and takes longer to grow kg for kg compared to feed fed intensively raised beef and whilst they have a low CO₂ as little grain is involved in their rearing their CH₄ production is higher as they take longer to rear and are smaller.

These stark global and UK statistics have inevitably led to calls for a marked reduction in meat production and consumption, Lang and Heasman (2015) suggest that a 50% cut in meat consumption in Europe would lead to a 40% reduction in NO_x / NH₃ emissions (thus improving air quality and greenhouse gas emissions), a 25-40% reduction in CO₂ emissions and a 23% reduction in crop acreage required to grow animal feed.

Upon his retirement as the Defra Chief Scientist, Professor Ian Boyd suggested that in England 7% of farms produce 50% of the food output from 30% of the land, whilst 42% of the remaining farms produce only 2% of the output from 8% of the land. He went on to say that the vast majority of these 42% of farms are based in the uplands and most of their income comes from subsidy and the livestock used are the agriculturally least efficient, and as a result proposed that half of the land that only

produces 2% of the nation's food should be used instead for recreation, carbon storage, biodiversity and re-wilded over a 10-year time frame (Boyd 2019).

Around the same time Boyd, speaking to the BBC, stated that we needed to eat less meat if the UK wanted to meet its Net Zero Emissions target by 2050 and as a result it was more efficient to raise cattle and sheep intensively (as opposed to extensively in the Uplands) as the animals grew more quickly and as a result emit lower levels of methane (Harrabin 2019).

However, the science around the impacts of methane emissions from ruminants on long term climate change is contested. A team from the Oxford Martin Programme on Climate Pollutants from the University of Oxford have argued that the established methodology for account for methane emissions is flawed. Whilst it is true that methane is 28 times more potent as a greenhouse gas compared to carbon dioxide, it is however a short-lived pollutant with a lifespan of around 12 years, compared to carbon dioxide which persists for over 100 years. Accumulative emissions of methane therefore give a misleading impression of their effects regarding accelerating climate change. They argue that if cattle numbers remain constant over a 12-year period their impact for forcing climate change is zero, indeed if cattle numbers reduce by 10% net emission fall to zero and if cattle numbers decline by 25% net greenhouse gas emissions decline (Allen et al 2018).

Inevitably there has been a strong backlash to Boyd's comments and cattle-related methane issues, from the farming lobby, the agricultural industry and farmers in general which have been covered in the farming press, for example Kay (2019) & Kay (2020). Similarly, the farming press has also picked up on Myles Allen's methane research, claiming that it is a myth that methane from ruminant cattle is a threat to the climate, for example Dean (2019). The NFU have also published various rebuttals to the threats posed by red meat production in the UK (NFU 2019) and the AHDB have published information on why red meat is nutritious (AHDB 2019). Additionally, EBLEX have also published a report on the impact on landscapes if cattle numbers in the uplands (including a case study from Dartmoor) were to be substantially reduced (LUC 2018).

In late 2019 and early 2020 two high profile documentaries were aired on British T.V., both arguing that meat production was very detrimental for biodiversity and the

climate globally and that as a result, consumers should switch to much less meat intensive diets. The BBC One documentary (November 2019) was entitled “*Meat: a threat to our planet?*” and was presented by Liz Bronin. The second documentary shown in January 2020 was presented by George Monbiot on Channel 4 and was entitled “*Apocalypse Cow: How meat killed the planet*”.

Both documentaries were severely criticised by the farming industry as biased. With regards to the BBC documentary see Dean & Kay 2019 and Clarke 2019, subsequently the BBC have had to withdraw the documentary from iPlayer, following complaints from the NFU which accused the BBC of not differentiating between cattle farming in Brazil and the US from the less intensive methods used in the UK (Black 2020).

The Monbiot “Apocalypse Cow” film which argued that meat production would be replaced in the near future by lab grown protein thus freeing up land for re-wilding was again heavily criticised (Clarke 2020 & Reader 2020).

Additionally, in early 2020, the Government’s Committee on Climate Change published a report “Land use: policies for a net-zero UK” which called for a 20% reduction in meat consumption by UK citizens by 2050 to enable the country to meet its net-zero carbon aspirations (CCC 2020).

The last couple of years has undoubtedly seen an increase in calls for a reduction of meat consumption in favour of more plant-based diets to improve human health, halt declines in biodiversity and to combat the detrimental impact globally on climate change.

10.4. The beef and carbon debate on Dartmoor

The “beef, health, carbon” debate did not come to full prominence until after I had completed my interviews. The issue of the smaller sized native breeds of cattle, such as Galloways, was an issue for many of Dartmoor’s hill-farmers and as discussed in section 5.3.4. with some farmers having moved away from Galloways whilst others were crossing them with Continental breeds to produce Stabiliser Cattle (Fuller 2018) for economic reasons. Only one of the hill-farmers I interviewed actually talked about the carbon footprint issues around Galloway cattle. The following quotes are all from Hill-farmer28.

So, if you are looking, especially with all this carbon stuff [i.e. the debate around carbon,

methane, climate change and cattle] *going on as well, the carbon thing I think is going to be as big as Brexit in a few years' time, it's taking you twice as much to finish a Galloway and it's taking you twice as long.*

Discussing the attributes of Galloway cattle, he suggested that the animals were bred for their looks and not for the market.

The stock up there, [on Dartmoor's Commons] I would generally class it as poor, the breeding stock that comes off is generally pure hairy [their looks]. Things which don't really appeal in the market for economic finishing and feed.

Here he sets out the benefits of crossing Galloways with a Continental breed.

Then if you crossed that Galloway cow with a Continental, who has good estimated breeding patterns and feeding, and they are easier to calve, which is what they want, so if you get an efficient calf which comes out and is finished by 8 months [compared to 16 months for a pure Galloway] in the same system, off the same cow, grazing the same pasture

He then went on to describe the system his family were using which involves using specialist “finishing” farming off Dartmoor in the lowlands of Devon. Finishing is the farming term for fattening cattle using feed / grass off the Commons prior to their sale. The majority of Dartmoor hill-farmers finish their cattle on their own in-bye land so that they can be members of Dartmoor Farmers Association which stipulates that members must ensure that their livestock is born, raised and finished on DFA member holdings (DFA 2016). Hill-farmer²⁸ questions how efficient the majority of Dartmoor’s hill-farmers were at this practice.

Are they finishing it effectively? You've got finishers and you've got finishers, and you can be doing the same job, but the level of detail and everything else is completely different, and feed quality and the detail is complete nutrition, because all of the finishers need to be doing is looking solidly at that nutrition, making sure they get it absolutely spot on, and if they do that, they will see growth rates like no-one else will see, and that's the kind of person we are making our partnership with, is someone we know who is finishing monstrous cattle at 16 months, and finishing 400kg carcasses at 16-18 months of age which is very good to be able to do that.

But the thing is you can't be a jack of all trades, but if you are a specialist person breeding what you can best achieve out of your land and your knowledge set, then I think that is more efficient. You don't want to be having your unit up here, then driving down to your lowland unit, throwing 3 days of food in front of them then driving back every day to see if they have eaten it up which is what happens on some of them.

The Galloway at that point is a very small animal, probably round about the 200kg. An

equivalent decent animal will be around 300-400kg, so you've got double the size in a similar time frame of production.

He also commented that the condition of the cattle on Dartmoor's Commons is not good as they are infected with various, often tick-borne diseases such as Redwater Fever and Louping Ill Virus.

Because if you've got those diseases in your cattle, all you are doing is slowing that process down for those cattle or stock to finish, getting rid of technical efficiency. So, all you are doing is creating a larger carbon footprint.

Here he argues that grazing cattle on the Commons is less efficient and produced more "carbon" (i.e. methane via belching and carbon dioxide via slower growth rates) than animals finished efficiently and that at some point this inefficiency will be highlighted and will cast hill-farming in a poor light.

The hills are in a very fortunate position, people want public access, but we still need to be as efficient as we possibly can because if we are not being efficient, I know already that by grazing rough ground you are producing an extra 0.5kg of carbon per kg made, on rough grazing, but that can be offset against the good of doing it [i.e. grazing the Commons for the landscape and biodiversity benefits], but if you've got an animal that is producing a very inefficient calf, full of diseases and everything else on top of that figure, you come up with a figure that someone will throw out in the press one day and it will be terrible.

His own vision for the future of grazing on Dartmoor's Commons involved a return to a form of transhumance as described by Fox (2012) where cattle grazed the Commons in the summer months when the grass was plentiful and were then returned to the lowlands for efficient finishing.

...it's how do you get from where we are today to a different way of working. And to do that, it has to be a phased process, but it's all about managing that journey to get the right levels of grazing with the right stock. But there would be people there that would be prepared to farm the Commons in a more traditional manner, which may involve completely destocking the Commons for the winter as part of that model and going back to a form of transhumance. It wants to be grazed heavier in summer and grazed at the correct time like you would graze the Marsh Fritillary land around the house. The stock up on the hill should be out on the hill and brought back in for the winter months, giving you time in the spring and summer to create whatever forage is needed to hold the stock.

Hill-farmer²⁸ and his father (Hill-farmer²⁵) have clearly given a great deal of thought to effective farming systems on Dartmoor as well as taking account of the enfolding debate about the impact of cattle on the environment and their role in combating

climate change. Interestingly they also tackle head on the issues around “traditional” hill-farming (as discussed in section 4.4.), asserting that a less intensive but more efficient form of farming is needed to address the environmental, climate and economic issues.

10.5. Concluding remarks

I have subsequently discussed (off the record) the carbon / methane issue with other Dartmoor hill-farmers who largely see it as another attack on their livelihoods and ways of life. To date I have yet to meet another hill-farmer in Dartmoor who has taken the beef / carbon issue into account and as a result is planning to change their working systems.

Over the past two years since the publication of the EAT-Lancet report, the two television documentaries and the publication of the views of the former Defra Chief Scientist Professor Ian Boyd, the debate around the future of meat farming, particularly that of beef production has intensified.

At the time of writing the UK government position and policy on this matter has not been published or consulted on and as a result the various stakeholders interested in beef farming, health, the veganism and vegetarianism, upland management and re-wilding are using arguments emanating from the wider debate to try to strengthen their own position.

Hill-farmers stress that the hills are unsuitable for cultivation and are ideal for animal grazing, whilst adding that the *Molinia* problem requires additional grazing from cattle not less. The beef sector has fissured with those involved with intensive cattle shed based animals (National Beef Association) calling for a tax to be levied on animals over 28 months so that their methane emissions can be minimised – a direct attack on the pasture-fed systems, i.e. hill-farmers on Dartmoor who counter that while their methane emissions are higher but short-lived their carbon footprint is considerably lower than the intensive systems which rely on grass, grain and maize specifically grown for them on land which could be used to grow crops for people (Riley & Price 2020). Those in favour of re-wilding see the removal of stock from the hills as an essential measure if their ideas are to come to fruition. The vegan and vegetarian lobbies support the reduction in livestock numbers as this in line with their ideologies.

The whole debate is very complex and nuanced, partly conducted in the scientific community and partly promoted / defended by campaign and lobby groups. Were cattle numbers to decline further still on Dartmoor as a result of this debate, it would have inevitable consequences for the moor's open views, its landscape, its archaeology and the wildlife which is reliant on its moorland features, such as cuckoos and curlews for example, both of which are in national decline. A further reduction in cattle numbers would remove one of the few levers of control which allow the moor to be managed in a pre-determined fashion.

The evidence is overwhelming that the environmental impacts of meat production globally are detrimental for the planet and there is a need to substantially reduce these impacts via the reduction of meat in diets (Machovina et al 2015 and Swain et al 2018). The debate around whether intensive systems are less environmentally damaging than extensive pasture-fed systems continue to be contested (Garnett et al 2017). In our upland habitats such as Dartmoor, herbivores graze vegetation which is inedible to humans, whereas in lowland systems in the UK cattle (and other livestock) are fed on crops, or graze land which could be used to feed humans directly with crops (Mottet et al 2017 and Broom et al 2013). The early attempts by Sir Thomas Tyrwhitt, the steward for the then Prince of Wales, in the late 18th and early 19th Century demonstrated very effectively that Dartmoor's Commons could not be converted from rough moorland to arable cultivation as the climatic conditions and the soil types were unsuitable for such land uses – as a result these areas (Dartmoor's New Takes) have reverted back to rough grazing land (Kelly 2015 p120).

It is also easy to forget amongst all the contested narratives, the positive role that cattle can play in enhancing biodiversity. The RSPB use their reserve at Geltsdale in Cumbria as a case study where sheep were removed from the site and replaced by year-round grazing hill cattle – as a result the reserve which is an SSSI returned to favourable condition (Garnett et al 2019). Chapter 6 in this dissertation has suggested that in order to reduce the abundance of under-grazed *Molinia* there is a need to increase the number of cattle available so that those habitats can be effectively grazed and therefore have a chance in the future of returning to “favourable condition status”.

I am also reminded of two re-wilding projects which I am familiar with – the Wicken Fen Vision in Cambridgeshire (Colston 2003) and the Knepp Estate in Sussex (Tree 2018) both of which rely on cattle and horses to help produce the rich wildlife both sites contain.

I finish this chapter with a couple of quotes from a Galloway hill-farmer (Laurie 2019 p82) on how grazing animals can combine to produce farmland rich in wildlife and a word of warning about what happens if cattle are excluded.

Sheep and cows used to work beautifully together. The two overlap in a steady rhythm of mutual back-scratching, and one supports the other. Cattle like long grass and sheep prefer it short. Cows do the heavy lifting and sheep follow up with the details. If you can strike the balance, the two will tackle the grass as it comes and keep the land in a choppy, buzzing balance.

Remove the cows, and the sheep are restricted. They don't have the clout to punch into thick grass, and they are shut out of the bracken. They focus their attention on the easy and accessible and hammer these into a billiard table. There is nothing left for a curlew's eggs. Other places are harder to reach, and they grow rank and tall without any grazing. The grass stands above your head, and then it's too rank for a curlew to land. The place falls oddly still.

11. Stories from Dartmoor: the ever-changing narrative

11.1. Introduction

This chapter gives a synthesis of the various and often competing narratives which have developed over time since the hill-farming and conservation issues began to interact in the 1980s. The first section brings all the stories which have been discussed in previous chapters together and details how some have altered over time and how new narratives have emerged. This section mainly uses the terminology of Narrative Policy Analysis (Roe 1994). It identifies the dominant policy narratives along with the counter-narratives and non-stories (which I have re-termed “rebuttal counter narratives”), thus creating a meta-narrative. The next sections use the works of Jones et al (2014) on the Narrative Policy Framework to analyse, understand and determine whether a qualitative approach can help explain some of the elements of the various narratives at play on the Dartmoor Commons. The conclusions of the chapter look at ways in which consensus might come out of the currently contested situation and discuss whether the use of narrative is an effective research tool in this context.

11.2. The evolving and ever changing environmental and hill-farming narratives on the Commons of Dartmoor

The narratives which I construct in this section are based on my interviews and numerous conversations with the various stakeholders involved with the Commons of Dartmoor over the past two decades along with my reading and experience. As such it is based on chapters 4-10, it is deliberately unreferenced so to read as a story. These are however my opinions, narratives are of course a social construction, in order to construct a narrative, you have to have a perspective, in this case my perspective. Others, of course have a different perspective. These issues will be discussed in later sections of this chapter.

For around 40 years following the end of the Second World War, hill-farming and environmental concerns were by and large harmonious. Dartmoor was designated as a National Park in 1951 and hill-farmers benefitted from the various subsidy schemes which enabled them to develop their businesses and farming practices. The harsh winter of 1962/3 prompted some to question whether the Commons were overstocked as many animals perished in the prolonged period of snow but such

criticisms were rejected. The dominant policy narrative of this era could be described as follows.

The conservation of Dartmoor's environment was compatible with an intensification of agriculture.

I would characterise the Dartmoor hill-farmers' narrative from this period as follows

Over thousands of years the hill-farmers of Dartmoor have created the landscape we know today. They are entrepreneurial farmers first and foremost who want to primarily produce quality sheep and cattle. Proud and hard people working in a harsh landscape, encouraged to do so by state production subsidies and unburdened by bureaucracy.

However, the events of the winter of 1962/3 started the process of the formation of the Dartmoor Commoners Council which were eventually realised in the Dartmoor Commons Act 1985, which on one hand enshrined the rights and responsibilities of the Commoners but also agreed environmental protections with respect to moorland reclamation proposals and delivered important public access arrangements.

The conservationists' narrative, by which I primarily mean, the then Nature Conservancy Council and the fledgling National Park Authority could be articulated as follows.

The purposeful management of the countryside to enhance the quality of the environment for wildlife and nature alongside providing for new access to the landscape

By the mid 1980s it was becoming clear that stocking rates and moorland management practices, driven by the headage payments were becoming unsustainable and damage to moorland habitats was occurring. Despite the 1981 Wildlife and Countryside Act and its 1985 amendment, the Nature Conservancy Council found it legislatively difficult to prevent damage and was somewhat impotent at resolving the issues arising from the productivist agriculture agenda and the emerging conservation imperative on the Commons and as a result the over-grazing counter-narrative emerges.

The Commons on Dartmoor are not in "favourable condition" because they are over-grazed and swaled unsustainably. The grazing and burning pressures must be reduced in order to allow the heather communities to recover.

This has been the dominant narrative in the uplands for 35 years and to many it still holds true. The work of the ADAS Over-grazing Team and the "profits foregone" funding from the ESA ensured that stock numbers were reduced, overwintering of

cattle ended and swaling was carried out on smaller areas less frequently. The hill-farmers were no longer in complete control, they were now farming by management prescriptions. As a result, the hill-farmers narrative evolves:

They are guardians of the moor but are not Park Keepers. Their traditions are threatened by increasing government interference and unsustainable farm incomes. They also believed that the ESA prescriptions had not only impacted on their traditional management practices but they were responsible for the deterioration of the environmental conditions on the moor.

By the early part of the 21st century and following the Foot and Mouth outbreak in 2001, it is becoming clear that significant areas of many of the Commons are becoming overgrown with either *Molinia*, gorse or bracken. An under-grazing counter-narrative emerges which some stakeholders blame on the prescriptions introduced with the ESA, whilst for others, the reasons for these changes are more nuanced.

As a result of the reduction in stock numbers, the cessation of over-wintering cattle and the restrictions on swaling large areas of the moor are now under-grazed and are dominated by unpalatable vegetation, in other areas the remaining stock congregate and overgraze the areas of sweeter vegetation

and / or

The “unfavourable condition” of the Commons were initially caused by over-grazing and unsustainable burning but today their recovery is impeded by high levels of atmospheric pollution (particularly nitrogen compounds) and climate change which are now major drivers of habitat change. The habitats of the Commons are undergoing a reconfiguration and it may not be possible to restore them to their former condition.

This latter narrative has been known to atmospheric pollution scientists for decades but the ecologists working in upland habitats were largely unaware of it and even when they became aware of it they often partially dismissed it as it was an external factor outside of their control, preferring to continue relying on the existing management prescriptions.

As the areas of under-grazed moorland expanded the archaeologists became concerned about the impact of this on the historic environment, in particular the Dartmoor Society campaigned to see the situation reversed and clearly blamed EN / NE for causing the problems with their anti hill-farming policies, their “rebuttal counter-narrative” reads as follows:

Dartmoor contains one of the richest archaeological landscapes in Europe, some of which dates back to Neolithic times. Recent policies which have reduced grazing levels to enhance the natural environment have been a failure allowing scrub and coarse grasses to dominate, thus hiding and damaging the important historic landscape. Grazing levels need to increase dramatically.

Throughout the period, since the Second World War, the policy held by the statutory bodies, hill-farmers and environmental charities has been that Dartmoor is a special place and relies on a pastoral form of hill-farming to sustain and enhance it.

However, given all the conflict that had occurred around the over-grazing narrative and the restrictions placed on hill-farming, the statutory bodies involved with Dartmoor along with the hill-farmers felt that it was important to restate this and try to introduce new ideas to resolve the vegetation and hill-farming issues. Flowing from the work of the Dartmoor moorland vision group and the Dartmoor Farming Futures project the revised dominant policy narrative becomes:

The moorland areas of the National Park are grazed open landscapes that need to deliver multiple public benefits including, public access, biodiversity, the conservation of key archaeological sites, water, carbon management and high quality food production.

Around 2010, the issue of hydrologically functioning peatland became more of a political priority, partly to enhance biodiversity but also as a mechanism to combat climate change. Government funding was made available which enabled a number of pilot areas on the blanket bog to be re-wetted. Led by the National Park Authority and South West Water, the re-wetting counter-narrative was conceived.

In the past the blanket bogs of Dartmoor were wetter but as a result of historic activities such as peat cutting and more recently farming practices, they have dried out. Re-wetting is now required to enhance water quality and potable water supply, restore biodiversity and conserve and enhance carbon stores.

These initiatives provoked a strong reaction again from the Dartmoor Society and another rebuttal counter-narrative developed.

Re-wetting Dartmoor's mires should cease immediately. The engineering works required to re-wet the mires introduces machinery into areas of the moor that have never been visited by excavators. It damages the historic environment and devalues the land for sheep and cattle grazing. There is no evidence that re-wetting the mires delivers environmental benefits.

As the second decade of the 21st century developed, there were now numerous contested discussions about whether the Commons of Dartmoor were over-grazed

or under-grazed, whether they should be re-wetted or not and whether sufficient emphasis was being given to the historic environment. In many areas the stands of under-grazed *Molinia* continued to expand and the re-emergence of the previously lost heather failed to materialise. In 2015 George Monbiot, the environmental campaigner is invited by the DNPA to address the English National Park Authorities at their biennial conference. He delivers a blistering attack on the state of England's uplands and Dartmoor in particular, calling the Commons "sheep-wrecked" and the practices of swaling, which he accused the DNPA of encouraging, as anti-wildlife. This caused considerable shock and discontent in many quarters at the time but led to a strong new re-wilding narrative.

Upland farming is an entirely uneconomic activity despite the huge subsidies it receives. The agricultural outputs are tiny in a national context but are delivered at a huge environmental cost. The Commons of Dartmoor have been "sheep-wrecked" and as a result the high moor should be re-wilded and extinct species should be reintroduced which would deliver numerous environmental and other public benefits.

Since 2015, the re-wilding movement in Britain has strengthened and a number of the environmental NGOs who previously would have supported a pastoral agricultural management of the uplands changed their emphasis. They began to become more vocal supporters of re-wilding, partly encouraged by some of the speeches by Michael Gove as Defra Environment Secretary, his political ally, Ben Goldsmith, a Defra Board member and references to wilder National Parks richer in wildlife as promoted in the Glover Report along with the new national narrative of the emerging biodiversity and climate crises. As a result, the Dartmoor pastoral policy narrative evolves further.

In addition to some pastoral hill-farming Dartmoor's National Park Management Plan will include nature recovery areas where the primary focus will be nature and letting natural processes take their course. Where potential conflict exists between nature recovery schemes and archaeology, nature will take precedence.

The pressures on upland pastoral practices have been further increased by the "meat-carbon-methane-vegetarian debate" which argues that in order to meet UK climate change targets, the number of livestock in the uplands needs to be substantially reduced whilst the population as a whole needs to cut meat consumption and replace it with largely plant based diet. It is argued that this would

have the added benefits of freeing up extensive areas of land in the uplands where re-wilding could be allowed to occur.

Cattle and sheep rearing along with excessive meat consumption are killing the planet, meat-based diets should be replaced by a plant-based one, land freed up in the uplands should be allowed to re-wild

Another very relevant narrative is that of the UK's decision to leave the EU – Brexit will impact on hill-farming with regards to future international trade deals and the way that hill-farming is funded in the future. At this point there are great uncertainties around what impact trade deals may have and the details and potential funding levels of the proposed ELMS are unclear.

The economics of hill-farming have been reliant on subsidy for decades, Brexit, both in terms of future trade deals and future funding schemes, currently adds considerable uncertainties and places hill-farming and a pastoral landscape on the Commons of Dartmoor in a more precarious place than it was 5 years ago.

Once the impacts of the headage days became apparent on the condition of Dartmoor's Commons a couple of decades ensued where the debate focussed on over-grazing and under-grazing narratives, however in the past 5-10 years a series of new narratives (such as re-wetting and re-wilding) and new policy imperatives (the meat carbon debate, the biodiversity and climate crises and Brexit, for example) have emerged which have substantially altered the debate around how the uplands should be managed, what we want from them and what role hill-farmers might have in the future. Where the narrative goes next is difficult to predict, there are clear threats to the traditions of upland hill-farming and there are potential opportunities from environmental perspectives, it is also possible that a series of unintended consequences may emerge which serve none of the stakeholders, for example, hill-farming communities may collapse leading to large-scale abandonment on the Commons which then become further dominated by plant communities such as *Molinia* or bracken which is universally disliked by all stakeholders.

11.3. Can the Narrative Policy Framework contribute to our understanding of the forces at play around hill-farming and the environment on the Commons of Dartmoor?

In the previous section the Narrative Policy Analysis was used to develop a meta-narrative of the contested history of hill-farming and environmental issues on

Dartmoor's Commons over the past 40 years or so. Dominant policy narratives and counter-narratives were observed based on the interviews carried out with the relevant stakeholders which are reported in chapters 4-10. This work has shown that the meta-narrative is highly complex, rich in detail, nuanced, contested and ever evolving. It also highlights one of the basic tenets of narratives – that individual stakeholder groups are welded to particular narratives which back up and mirror their world views and that these stakeholder groups are likely to amend their existing narrative rather than change to another competing narrative, for example, the conservationists have been unwilling to replace the over-grazing narrative with an under-grazing one, despite the evident presence of the extensive areas of tussocky ungrazed *Molinia*, instead pointing to the absence of heather in the dry heath communities as a present indicator of over-grazing.

The use of narrative in policy research has been criticised in some quarters as it is suggested that their qualitative conclusions are not “clear enough to be wrong” (Sabatier 2000). As a result of this the Narrative Policy Framework has been developed to try to address these criticisms (Jones et al 2014). Their work uses quantitative methodologies to test hypotheses associated with proposed theory. My research is unashamedly qualitative in its nature and this section explores the insights that can be gained from using a number of the NPF theories and hypotheses as a framework for qualitative analysis.

In total 14 hypotheses have been developed at the micro (individual) and the meso (group) levels (Jones et 2014 p14 & 17-18) and these are set out in tables 15 & 16. To date no hypotheses have been published at the macro (meta-narrative policy) level. I have selected 3 of their hypotheses to explore (two at the micro level and one at the meso-level) as these appear to me to be of most relevance and most illuminating to the situation on the Dartmoor Commons.

11.3.1. The Power of Characters

Table 14 The Power of Characters: theory and hypothesis		
Hypothesis	Brief description of theory	Hypothesis wording
H5 The Power of Characters Micro-level Jones et al (2014) p14	Characters are central to policy narratives. Emotional responses, sympathy for, aversion to are likely to play an important role in the persuasiveness of a policy narrative	<i>The portrayal of policy narrative characters (heroes, victims & villains) has higher levels of influence on the opinions and preferences of people than scientific or technical information</i>

11.3.1.1. Some thoughts around the theory

How characters are viewed with regards to the narratives of the Dartmoor Commons depends on your perspective. During the headage days on Dartmoor and the over-grazing narrative, from an environmental perspective, the hill-farmers were portrayed by some as the villains who were over-exploiting the Commons for personal gain. The conservationists who intervened to bring back order were seen as the heroes of the story whilst the wildlife and landscape could be viewed as the victims. However, from a farming perspective, the hill-farmers would argue that they had been following Government policy to increase food production for the nation and as a result of the draconian interventions from outsider conservationists, they were the victims of a series of misguided environmental policies. Within this perspective, the conservationists become the villains and the hill-farmers have been deposed from their standing as heroes of food production. Had the management prescriptions given to the hill-farmers led to the return of heather to the Commons, the story might have ended there, but of course it did not.

From the perspective of the under-grazing narrative, the hill-farmers become the victims of the prescriptions from the conservationists as the agriculture systems and traditions are broken leading to the huge increases in the area and dominance of under-grazed *Molinia*, here the conservationists now become the villains.

With policy initiatives such as Dartmoor Farming Futures, attempts are made to promote hill-farmers to the role of heroes, by empowering them to use their local knowledge to restore wildlife back to the Commons whilst also producing high quality local food. As this era develops, Government austerity cuts impact heavily upon

organisations such as NE, which as a result suffers enormous head count cuts, to a level which makes the delivery of its core functions hard to achieve. NE, by this point has become the victim, even in the eyes of the some of the hill-farmers.

The ever-changing narratives can therefore see hill-farmers move from villains to victims to heroes, whilst the conservationists go from heroes to villains to victims. It was also interesting to note from the interviews with the conservationists involved with implementing the management prescriptions in the ESA, that there was no contrition or acceptance that their prescriptions had caused the current conditions on many of the Commons i.e. the areas of under-grazed *Molinia*. The tone of these interviews made me conclude that they saw themselves still as the heroes of the story as well as the victims of unreasonable hill-farmer behaviour, whilst none actually called or implied that the hill-farmers were villains, most would characterise the current situation as one that was caused by the historic actions of hill-farmers. Current serving staff at Natural England did see themselves as the victims of austerity and that this was an obstacle to seeing “favourable condition” returning to the Commons. Interestingly, staff at the DNPA did not portray themselves as heroes, villains or victims (except perhaps of austerity cuts), instead they saw themselves as facilitators, attempting to bring all the parties together in the search for consensus.

The characterisations above relate to distinct stakeholder groups, but the “power of characters” can also apply to individuals. Hill-farmers can be victims of bullying from other hill-farmers, they can be villains by being the bullies, or as some hill-farmers implied, villains by carrying out sheep rustling or they can be heroes in their management works on the Commons, their food production efforts or providing leadership in trying to find consensus. It is also evident to me from my interviews and off the record conversations that some hill-farmers can be villains, victims and heroes simultaneously. Some individual hill-farmers on account of the way they seek to resolve situations / seek consensus are seen by some other hill-farmers as heroes and by others as villains. The “power of character” in Dartmoor’s hill-farming community can be very nuanced.

All of the characters depicted so far in this section are anonymous, but there appears to me to be two named individuals who warrant special mention. The first of these is George Monbiot, who through his campaigns on re-wilding, has become almost a super villain in the eyes of many hill-farmers but is seen as a hero to an ever

increasing group of people, both professional conservationists and amateur naturalists, who have become frustrated with the slow progress that has been made in restoring wildlife back to the Commons, who see his re-wilding ideas as both exciting and the required solution.

The other individual is Tom Greeves, who through his writing, lecturing and general campaigning on behalf of the historic environment has seen him become a champion of the under-grazing narrative and is respected by many hill-farmers and considered a hero. Conversely many conservationists, especially those who do not accept the under-grazing narrative see him as a villain who is trying to return Dartmoor back to era of headage payments and over-grazing. Greeves' views on the re-wetting initiatives resonate with some members of Dartmoor Society and some of the potentially affected hill-farmers who consider him as a hero but the majority of other stakeholders consider his views as unhelpful and perhaps see him as a "villain of the piece" rather than a villain per se.

11.3.1.2. Thoughts around the hypothesis

What I find so interesting about the analysis of the "power of characters" is how the perception of the various character groups have changed over time and the role that the science may have played in that.

Back in the 1970s and 1980s, it was scientific work e.g. ecological surveys carried out by academic institutions and statutory bodies such as the NCC and EN that identified over-grazing and unsustainable burning regimes in the uplands. Applied ecologists then developed this knowledge so that sustainable management prescriptions could be developed, tested and implemented. The majority of ecological and conservation practitioners, other stakeholders and hill-farmers do not have access to the extensive literature on upland ecology and management as it resides in journals and on web sites which they do not have access to. However, in organisations such as the NCC, their scientists did and via their reports the over-grazing narrative was born and the requisite management prescription changes were developed. In my experience as a practitioner, the NCC along with its successor body EN had strong reputations as scientific organisations, so when they published the ESA management prescriptions the consensus (excepting the hill-farming community) was that they would deliver the necessary changes needed to restore

habitats. However, within 10 years it was becoming clear on Dartmoor that the restoration of moorland habitats was going to take longer than had been anticipated by EN – reducing sheep numbers had not led to the return of heather across the Commons.

Whilst hill-farmers on Dartmoor were vocal in their criticisms of the management prescriptions and the declining state of many Commons, EN were resolute in their determination to continue with their strategy of reduced grazing and scaled backed burning. Others, particularly the DNPA and the Dartmoor Commoners Council, were seeking clarity in what EN (and English Heritage) actually wanted. The moorland vision work was started and in due course the DFF trial was launched. In my view, the reason the perception of the hill-farmers and the conservationists changed over the period was not because of the power of any of the characters involved but because the “science” failed to deliver the desired outcomes and as a result confidence dropped in the science-based prescriptions.

11.3.2. Congruence?

Table 15 Congruence and incongruence : theory and hypothesis		
Hypothesis	Brief description of theory	Hypothesis wording
H3 Congruence & Incongruence Micro-level Jones et al (2014) p17	Individuals are more receptive to policy narratives that they recognise as similar to their own understandings of the world	As perception of congruence increases, the more likely an individual is to be persuaded by the narrative.

11.3.2.1. Some thoughts around the theory

This hypothesis lies at the heart of narratives, individuals and groups of individuals adopt narratives which mirror their understanding of the world i.e. their world view. Hill-farmers have a reputation for bearing grudges against their neighbours and I have been told stories where families have fallen out over minor issues and then never speak to each other again. From my own experience from my time on Dartmoor I have attended Common Association meetings attended by neighbours who have fallen out with each other and the atmosphere has been very difficult. This hill-farmer gives an example this.

In terms of swaling then the two neighbours that do get on, I've got my neighbour here, we will go out and swale it, but I know there are a couple of farmers that won't help me or help

us, so you don't even bother asking them. So, you've got guys you can work with, you've got guys you can't. (Hill-farmer21-2)

However, the noticeable thing is that despite these disagreements, hill-farmers on Dartmoor are a very strong cohesive group when it comes to fighting for their futures. They stick together as a group and will, almost without exception, hold the same narrative. When interviewed all the hill-farmers agreed that during the 1980s and 1990s there were too many animals on the moor that over-grazing and damage was occurring. However, to a person, they would argue that the problems today are caused by insufficient numbers of stock and under-grazing, arising from ill-advised prescriptions dating back to the ESA period. Likewise, they share similar views on the state of hill-farm economics, they have deep concerns about their future and consider that their culture is under threat and not adequately appreciated.

In a similar vein the various conservation bodies, both statutory and voluntary have shared a similar narrative – that the moor is over-grazed but that it can be restored through the reduction of stock numbers and the pursuit of a pastoral management regime. However, in the last 5 years or so, this pastoral management coalition has shown signs of fracturing. Some conservationists, particularly non-governmental ones, have become frustrated by the lack of progress that has been made restoring habitats and wildlife communities on the Commons and have begun to question whether a different approach - a re-wilded landscape might deliver better the outcomes they are seeking. These groups represent wildlife interests and their view of the world has changed. Historically these groups believed that the management of semi-natural landscapes was best achieved by interventionist techniques which mimicked low-intensity farming methods. These views apply mainly to upland landscapes which they do not directly manage, in the lowlands they still favour low intensity farming methods. This fissuring and fracturing of the pastoral coalition along with its implications are discussed further in chapter 12. It is an interesting development, it is unusual for individuals and organisations to change their narratives as they represent their understanding of the world. Individuals and organisations only change their narratives if a new and better narrative is proposed to replace it which gives an even better description of their world view.

11.3.2.2. Thoughts around the hypothesis

The congruence hypothesis seems to strongly apply to Dartmoor’s hill-farmers, as a group they are strongly attached to the under-grazing narrative and are bound together to collectively stand up for their culture and rights.

When applied to conservationists, the hypothesis is less compelling. EN / NE have resolutely stuck to the over-grazing narrative and their associated management prescriptions and by and large the DNPA have stuck with them but after 25 years of the same strategy some others have become disillusioned with the lack of progress on the Commons and sought a new narrative.

11.3.3. The Devil Shift

Table 16 The Devil Shift : theory and hypothesis		
Hypothesis	Brief description of theory	Hypothesis wording
H4 The Devil Shift Meso-level Jones et al (2014) p17	Political actors will “exaggerate the malicious motives, behaviours & influence of opponents” (Sabatier et al 1987)	Higher incidence of the devil shift in policy subsystems is associated with policy intractability

11.3.1.1. Some thoughts around the theory

As chapter section 4.8 details, feelings and tempers were high as hill-farmers were persuaded to sign up to ESA agreements. Interestingly during my research the accounts of these difficult and often ill-tempered meetings were only provided by the EN staff who were negotiating the agreements. None of the hill-farmers reflected on those meetings and 20 to 25 years later most of those interviewed were resigned to their fate. Prior to conducting the interviews, I was expecting to hear a great deal of animosity from hill-farmers towards the conservationists they had been dealing with. This did not occur, the majority did make reference to their concerns that many of the NE staff they dealt with were unwilling to listen to their concerns and had little experience or knowledge of hill-farming. This quote would be a typical example and would represent the views of most of the hill-farmers interviewed.

They were very reluctant to see our point of view at the beginning. They would go away to their universities, get their degrees and come back and be hard-school ecologists thinking “this is the way to do it” and they’d impose their views, they would have the power because they had the payment structure which gave us the incentive to do it. (Hill-farmer014-1)

And this quote from another hill-farmer indicates how attitudes and relationships have improved.

Once upon a time they were hammer and nails “you do what we tell you otherwise you’ll be penalised” But things have changed, the attitude, I was quite amazed the other day. They are learning, they have now changed the thing completely to “you tell us what you want to do and we’ll see if we can agree”. (Hill-farmer008-2)

There are a small minority of hill-farmers who are abrasive and resentful today to officials from NE and on occasion the DNPA, but the majority distance themselves from such incidents and keep their counsel to themselves. My interviews suggest that the Devil Shift is no longer a factor between hill-farmers and the statutory conservation bodies, although it was an issue during the mid to late 1990s.

The Devil Shift is however very apparent around the re-wilding, re-wetting and re-grazing narratives. The public spats between hill-farmers and re-wilders (particularly Monbiot) are well documented and have been discussed in chapter 9. It is interesting that both sides in these arguments / debates “exaggerate the others malicious motives”. The re-wilders regularly use the phrase sheep-wrecked, whilst the hill-farmers accuse them of wanting to clear the hills of farming and as a result destroy their culture. This is the main example on Dartmoor when both sides of a debate publicly attack each other and do deploy Devil Shift tactics.

With regards to the Dartmoor Society’s campaigns (predominantly led by Tom Greeves) around the re-grazing and re-wetting narratives, the credibility and knowledge base of NE and the DNPA have been seriously questioned, to the point where they have both been accused of wilfully damaging the livelihoods of hill-farmers whilst also damaging the environment they have a responsibility to protect. Much of this has taken place in a very public manner. However, the statutory bodies involved have not attacked the Dartmoor Society or Greeves in their responses, instead they have argued for and defended their respective positions. A small number of hill-farmers have engaged in these debates as detailed in chapter 8, but by and large the majority have remained publicly silent and left the Dartmoor Society to make the case for them.

11.3.1.2. Thoughts around the hypothesis

On Dartmoor it would appear that the Devil Shift is associated with intractable policy options. At the current time the Devil Shift is most prominent amongst the counter-narratives. Re-wilding and hill-farming are not seen at the current time as compatible activities, similarly the grazing levels required to have a visible suite of archaeological features are not compatible with a less grazed landscape where heather and gorse can flourish. The restoration of degraded blanket bog is government policy and widely supported by conservation bodies and as a result I have struggled to understand the Dartmoor Society's opposition to it. This hill-farmer, who also has a very clear understanding of the "public money for public goods debate" understands the wider national perspective, despite potentially losing areas of grazing land.

I see it [the blanket bog] as a big asset for the nation and we as Commoners can look after that asset, you can't just afford to neglect it, it's got to be maintained, but then there is a cost to that maintenance. So, I see it for the Forest especially, it's an asset, if you want us to maintain it you need to... not compensate or subsidise us, but to help us do that we need a payment. (Hill-farmer014-1)

As the UK is about to change the way that farming is subsidised in the future, with the introduction of ELMS and produce intractable policy options then incidences of The Devil Shift are likely to emerge, in groups who consider that their interests are being side-lined. These groups, for example, could include hill-farmers, conservationists, archaeologists and re-wilders.

11.4. The Power of the Narrative – “not clear enough to be wrong”?

11.4.1. The case for narratives

Sabatier (1999) excluded any mention of social construction and narrative from his standard text on Theories of the Policy Process. When challenged on this by Radaelli (2000) he replied that he would not support an approach to public policy *that could not be clear enough to be wrong* (Sabatier 2000 p137). It has been suggested that Sabatier was right to suggest that post-positivistic scholarship was not clear enough to be wrong but the post-positivists were right that narrative was important to understand policy developments (Jones et al 2014 p3).

I have read Sabatier's phrase over and over again in an attempt to understand what he meant and I have concluded that I simply do not agree with him. Narratives are not necessarily right or wrong, what makes them so interesting is that they represent what different groups of stakeholders think, as a result they are inevitably contradictory and competing. The different perspectives from all the narratives coalesce to form the meta-narrative which gives an overview of all the issues, feelings and grievances involved in the overall problem. It is only by seeking out and piecing together all the narratives that a true picture of the overall policy issue can be described. Without a full overview it is likely that policy interventions will, at best be partially successful and at worst will fail to deliver their objectives.

It is also unusual for stakeholders to change their own specific narratives, this is understandable to some extent as their narratives are based on their beliefs and aspirations, however this can prove problematic if new information (or narratives) come to light or the policy context changes. In some cases, stakeholders do evolve or even change their narratives. The next three sections look at these issues to show how narratives can sometimes confuse and sometimes clarify the overall policy context. It also demonstrates that seeking out all the relevant issues are important if coherent policy choices are to be made.

11.4.2. Sticking to your narrative

Since the headage era, many conservationists have staunchly stuck with the over-grazing narrative, blaming stocking numbers, particularly sheep numbers, and swaling regimes for the problems associated with the upland Commons and their unfavourable condition. Despite the compelling evidence that today, large tracts of the Commons are dominated by ungrazed or partly grazed *Molinia*, many conservationists are unwilling to adopt the under-grazing narrative (and the accompanying altered management prescriptions) as they believe that the current state of the Commons is a direct consequence of headage era over-grazing. This is despite hill-farmers, by and large, following the prescriptions given to them by the conservationists as a mechanism for restoration.

This study devoted considerable effort to understanding the hill-farmers' views with respect to Dartmoor, this is the first time that this has been attempted. Whilst I was a practitioner on Dartmoor I did hear snippets of this story from hill-farmers but as I

was so tied to the over-grazing narrative dismissed these views as an attempt by hill-farmers to simply go back to the days of over-stocking and as a result the subtlety of what was actually being said was lost. With hindsight I can now see that farmers' views were not listened to, were considered invalid and were therefore ignored. As the ESA was introduced from 1995, scientific knowledge took primacy of local knowledge and as a result the concerns of hill-farmers over the impact of the management changes they faced were ignored. It is interesting to speculate if research had at that time been carried out to understand the views of the hill-farming community, whether some of the unintended consequences of the ESA prescriptions such as the spread of *Molinia* and gorse could have been avoided.

In a similar vein, the calls to increase the grazing pressure so that Dartmoor's historic landscape could remain visible were dismissed – I distinctly remember at the time feeling somewhat conflicted over these ideas as many of the NT's monuments, for which I was responsible, were disappearing under *Molinia*, nevertheless I believed that in order to restore the wildlife on the Commons the grazing pressure had to be reduced further still, as a result I disregarded the pleas of the Dartmoor Society (Greeves 2006).

11.4.3. New and emerging narratives

One of the most surprising issues that came out of my research was the discovery, during my reading for my literature review, was the very extensive body of research on the impacts of atmospheric pollution (from nitrogen compounds and ozone) on upland species and habitats. I had been unaware of this literature as a practitioner and it became apparent during my interviews that all the conservationists that I spoke to were also unaware of it as well. There is good evidence to show that atmospheric nitrogen deposition and low-level ozone levels on Dartmoor are high and at such concentrations tend to enhance the growth of *Molinia*. Additionally, the increase in CO₂ concentrations in the atmosphere as a result of climate change also promotes the growth of *Molinia*. The atmospheric pollution narrative does not suggest that nitrogen, ozone and CO₂ are solely responsible for the increase in *Molinia* dominance, however as set out in Chapter 6 it is one of the factors responsible. This narrative implies that in order to combat this trend, there needs to be an increase in grazing particularly from cattle in order to counteract the phenomenon – it could be regarded as a sub-set of the under-grazing narrative.

Nitrogen deposition and increasing summer temperatures have also been linked to an increase in the frequency and severity of heather beetle attacks on heather. As part of my research I walked most of Dartmoor's Commons and was struck by the extent of heather beetle damage to heather. On some Commons, Okehampton Common being a prime example, a Common I have visited frequently over the past 5 years, the heather has been subjected to repeated annual attacks by the beetle and as a result, the heather has failed to grow beyond a centimetre in height. If the atmospheric pollution narrative and its associated heather beetle narrative is either unknown to a stakeholder or is ignored it is possible, indeed it is possible that the failure of heather to regenerate as a dwarf shrub will be blamed on excessive sheep grazing. Natural England, recently called for a ban on over-wintering sheep on Okehampton Common and stated that these measures were "aimed in part at restoring the heather and bilberry vegetation heathland that once characterised the common" (Pitt 2020). The heather beetle narrative does not suggest that the beetle is responsible for the demise of the heather and its lack of effective regeneration, but it does suggest that whilst there may be too many sheep on Okehampton Common there also may be too many heather beetles.

Neither the atmospheric pollution narrative or the heather beetle narrative explain exactly what is going on but they should caution us to investigate the situation in more detail. The current policy response on both these issues (the *Molinia* and heather) is dominated by the over-grazing narrative and as a result restrictions on grazing practices have been or are about to be further imposed to "improve" the moorland habitats. If the narrative is partially wrong the solutions are also likely to be wrong. In this example, it is possible that reduction in stock numbers will not lead to the regeneration of the heather but instead will lead to the increase in the area of ungrazed or partially grazed *Molinia* which will subsequently concentrate the sheep on increasingly contracted areas of palatable grazing, in these areas significant over-grazing is then very likely.

Currently there are also a number of emerging narratives, for example, the meat narrative and Brexit narratives. Both are complex and contested and the policy outcomes for them are currently unresolved. However, both of these issues need to be taken seriously into account as each or all of them have the potential to significantly alter the Dartmoor Commons meta-narrative.

11.4.4. Evolving the narrative

Section 11.4.2. indicates that stakeholders stick to their given narratives and are unwilling to change them even if evidence emerges which appears to contradict their position. However, within the overall narrative of the Dartmoor Commons there are a number of examples of stakeholders being open to evolve their narratives as part of the search for consensus. I give three different examples here.

11.4.4.1. Dartmoor Farming Futures

The DFF initiative which began in 2011 (Waldon 2011) was an attempt to change the knowledge base of discussions around how the Commons should be managed and make it more participative. Prior to 2011, the power base around knowledge lay with NE and their reliance on scientific knowledge. DFF aimed to also introduce the hill-farmers' local knowledge. For the first time in around 25 years the views of Dartmoor's hill-farmers were being sought and being valued. As chapter 7 has shown progress has been made and there has been a shift in emphasis but to date it would be inaccurate to describe that local knowledge was on an equal footing with scientific knowledge. DFF was a pilot project operating on only two Commons and to date the project has not been extended onto additional Commons and it is still a pilot and not the *modus operandi* for Dartmoor.

11.4.4.2. Attitudes towards re-wilding

For me, perhaps the most surprising issue that has evolved over the past few years is the attitudes of the government and the DNPA towards re-wilding. Prior to Monbiot's invitation to speak to the English National Park's biennial meeting in 2015 the consensus view held by statutory bodies, conservation NGOs and hill-farmers was that the Commons of Dartmoor should be managed as a pastoral landscape delivering multiple public benefits. In the years since 2015, "re-wilding" or "wilding" or "wilder" have become notions that Defra and the DNPA have begun to countenance at least within parts of the Commons of Dartmoor. The Landscape Review (Glover 2019) actively encouraged Park Authorities to plan for wilder core areas and these ideas have subsequently been incorporated in to the DNPA's new Management Plan (DNPA 2020b).

The emergence of re-wilding as a practical future land-use (opposed to a fanciful vision) has seen a "fissuring" (see section 9.2.2.1.) amongst a number of the

conservation NGOs involved on Dartmoor. They have become (at least in private and off the record) disillusioned by the lack of progress that has been made in restoring wildlife via the pastoral farming route and instead appear much more willing to allow natural processes and self-willed nature to take the lead.

Dartmoor's hill-farmers, by and large, remain implacably opposed to re-wilding as they see it as a threat to their livelihoods and their rights of the Common. As the concept of wilder core areas within Dartmoor become plans and lines on maps there will be much work to do to ensure that hill-farmers feel included and welcomed.

11.4.4.3. Farmers and the “public money for public goods” debate.

Whilst hill-farmers currently remain opposed to re-wilding on Dartmoor they have shown themselves willing to change as their circumstances alter. Following the introduction of the 1947 Agriculture Act they proved adept at utilizing the subsidies available to increase food production. Similarly, when the ESA schemes were introduced they again changed their working methods (albeit unwillingly). At this point in time we appear to be on the cusp of seeing a new requirement for changes in their farming methods as a policy of “public money for public goods” emerges. At the time of writing, there is a lack of clarity and little detail on what the funding arrangements might be and this is clearly a worrying issue. It is also clear that with the phasing out of the BPS and the parlous nature of the hill-farm economics, that hill-farmers will need to access these new funds if they wish to continue farming. Hill-farmers have proved to be very resilient and many have diversified their income with second jobs or additional rural enterprises and just as they and their forebears have done in the past I expect a significant number will “follow the money”⁵⁹ even though at the present time they feel confused and uncertain about the future.

11.5 Has a narrative approach to stakeholder attitudes on Dartmoor's Commons been of use in understanding the situation?

Conflicts on the Commons of Dartmoor are long running, often unresolved, nuanced and very complicated. By using a simple narrative framework to build up a series of narratives, based upon a series of detailed semi-structured interviews with the key stakeholders, along with a systematic review of the academic and non-academic

⁵⁹ 'Follow the money' is the phrase I use when discussing with hill-farmers their future options.

literature, it has been possible to provide significant detail as a mechanism for understanding the competing claims of the various stakeholders.

Individual stakeholder groups, almost by definition, tend to focus on their own narratives and are most familiar with the narratives of others when they threaten their own views. This research has stepped back from a pre-conditioned view and gives all the narratives an equal airing. My role as a narrative researcher aims to bring an independent viewpoint at least in terms of all the issues involved, it is almost impossible in assembling the meta-narrative not to introduce one's own personal biases. In this contested environment my aim has been to try to interpret what I hear, see and read in the best way that I can and in this I have only been partially successful, by giving Dartmoor's hill-farmers a voice I have been accused by some of the conservation stakeholders of being the "hill-farmer's friend". There are some who believe that the richness of Dartmoor's wildlife will only improve effectively in the absence of its hill-farmers and that is not my view as there is more to Dartmoor than just its wildlife.

I started from a position of considerable confusion with respect to what was actually happening on Dartmoor's Commons and I now believe that by using a qualitative narrative approach I have been able to unpack the issues and as a result have a good holistic understanding about what has happened on the Commons over the past 50 years or so. Hill-farming and perhaps even Dartmoor itself finds themselves in a very precarious position. Many of the potential issues which effect the situation are external factors, such as future trading arrangements for farming products, future funding formulae for farming, future funding settlements for the public and voluntary sectors, climate change, atmospheric pollution and changing human dietary patterns to mention but a few and narrative analysis cannot usefully predict the future as these are largely political decisions. What narrative analysis can do is highlight issues from the past and suggest lessons that can be learnt for the future.

11.6. Concluding remarks

As an undergraduate and postgraduate in the early 1980s I trained as an ecologist using quantitative methodologies but when I came to consider carrying out this research in the 2015 I made a very conscious decision to use qualitative approaches. I was struggling to relate what I was seeing with my eyes with the

dominant over-grazing narrative and its associated numbers based ecological survey data – it just did not sit comfortably with the huge areas of under-grazed moorland that I was now familiar with.

I was considered by my colleagues as “expert” in upland ecology, specifically as it related to Dartmoor, yet I was troubled by my inability to explain what was actually happening on the Commons using my ecological knowledge. It was then I decided that perhaps studying words instead of numbers might provide a different perspective on why the management of Dartmoor’s Commons was so contested and largely ineffective. It was time to listen to what the hill-farmers were saying as well as what the conservationists were stating. I had decided to research some narratives which did not chime with my own views.

As I was planning and conducting my research I decided that I would try to immerse myself in the new narratives that I was hearing, when conducting my interviews, I decided not to challenge positions, rather I was to draw them out so that in due course I could analyse and discuss them in an impartial way. I decided to approach the research by interviewing all the relevant stakeholder groups objectively and rigorously whilst at the same time deploying a degree of reflexivity.

By adopting this approach, I believe that I have been able to construct a meta-narrative which is much richer than it would have been if I had adopted my then existing position. Whilst originally I may have been a minor “character” in the Dartmoor Commons’ story I am confident that through my research I have been able to be objective, rigorous and reflexive and as a result have been able to provide insights into issues which were previously downplayed (such as the hill-farmers’ views on the management of the Commons) and ones which had been overlooked such as the impacts of atmospheric deposition on the ecology of Dartmoor. For example, by putting forward a new under-grazing narrative, one which suggests that this has detrimentally impacted on the Commons’ wildlife and ecology, it challenges the dominant over-grazing narrative which argues the opposite position. Debating and resolving these contradictions will be essential if suitable prescriptions and outcomes are to be delivered as a result of the new ELMS.

With regards to the qualitative-quantitative debate / divide, I believe that it is rather an academic and unhelpful distinction. As the grazing prescriptions have perhaps

shown, they were “clear enough to be wrong” and a narrative approach is objective and rigorous to be “clear enough to be right” or at least worthy of more detailed discussion and research. The resolution of the issues on the Dartmoor Commons will be most likely to succeed if they utilise qualitative social science methodologies alongside quantitative ecological ones.

12. Conclusions. Whither Dartmoor's Commons?

In addition to my Concluding Remarks in Chapters 4-10, this chapter explores where Dartmoor's Commons are headed and the extent to which a narrative approach has been effective at posing and answering these questions. This chapter is divided into 4 sections

- My positionality
- The outstanding and urgent issues
- Tragedy
- My narrative

12.1. Narratives and my own positionality

I decided that I wanted to undertake this research because I was finding it increasingly difficult to reconcile what my training as an ecologist had told me about management issues in the uplands and what I could see with my own eyes on the Commons of Dartmoor. Conservationists and ecologists had insisted from the 1980s that the habitat degradations that they were cataloguing and studying were caused by the increase in the number of grazing animals in the uplands driven by headage payments and this along with unsustainable burning practices were causing significant losses to heather communities, widespread erosion problems along with the proliferation of unpalatable grasses – the vast majority of our upland SSSIs were not in favourable condition and the intensification of upland farming practices were to blame.

My research has used semi-structured qualitative interviews with the key stakeholders, along with the relevant scientific research to study and catalogue the various competing narratives around how the Commons of Dartmoor should be managed. This narrative based approach, along with my own personal professional journey has proved to be illuminating for me for a number of reasons and has influenced my approach.

1. By conducting a series of detailed interviews with all the stakeholders I have been able to detail a much richer account of the contested and nuanced stories about hill-farming and conservation on Dartmoor than I was aware of when I started, despite that fact that I had worked professionally on these issues for over a decade on Dartmoor

2. As a practitioner I can now see that my judgement had been clouded by the dominant over-grazing narrative of my profession. For example, the highly thought of ecologist from whom I commissioned surveys and reports focused on the continuing decline of heather concluding that this was caused by continued over-grazing.
3. I distinctly remember disagreeing with Tom Greeves when he published an article in the Dartmoor Magazine (Greeves 2006) calling for an increase in stocking levels to stop various archaeological monuments and the historical landscape in general being swamped by under-grazed grasses. My over-grazing narrative was deeply embedded.
4. By conducting around half of my interviews with hill-farmers I have been able to understand their fears, concerns, frustrations and aspirations and as a result uncovered a rich series of stories which detailed a partial dismantling of their “traditional” farming practices. I was undoubtedly aware of snippets of these stories as I had spent over a decade trying to bring the NT’s Commons on Dartmoor back into favourable condition by working with the local Commoners. However, as many of these discussions revolved around how the agri-environment money was to be split up between Commoners and the landowner, it was often acrimonious and tribal. I can now see that being an “actor” in the story was not conducive to having a balanced and wider perspective.
5. Acknowledging to myself that I was struggling with how to reconcile my narrative with what I could see with my eyes enabled me to step back and become a more independent researcher and not a key actor with an agenda. One of the key reasons for carrying out this research was that I knew I did not understand what was really happening on Dartmoor’s Commons. This was a revelation, because as a practitioner with over 30 years’ experience in the conservation sector (a 30 year time frame which saw the sector grow in stature and in budgetary terms), I had the confidence (over-confidence?) to believe that the science and practical experience that underpinned our sector meant that we knew what was needed to restore habitats on Dartmoor’s Commons, by 2014/2015 I was much less sure that that notion was in fact correct. The following quote was instrumental in helping me view myself and become more reflexive (Schön 1984) in my approach to my research.

Conservationists see the conservation of living diversity as a moral necessity, something that is self-evidently right and just has to be done. In the language of conservation biology, conservation is a “mission”. Anything that detracts from that mission, or contextualises it as just one among other competing ideas or interests is therefore inherently suspicious. (Adams, 2015 p64.)

6. When I was conducting my literature review I became increasingly clear in my mind that the over-grazing narrative did not on its own explain what was happening in our uplands and almost by chance I came across this quote from Des Thompson (2002 p37).

Some of us are beginning to form the view that some of the grass-dominated vegetation types of the southern uplands may be the product of nitrogen deposition and heavy grazing pressures. Hence, a reduction in grazing pressures alone may not necessarily result in an improvement in habitats.

One of the challenges of being a practitioner is that you neither have the time or access to engage fully with the academic literature. However upon carrying out various literature searches on the topic of atmospheric pollution and the uplands it became clear that there was an extensive literature on the detrimental impacts of various nitrogen compounds and ozone on various semi-natural habitats including those in the uplands. To my surprise very few, if any, practitioners working in the uplands were aware of this literature and the role that nitrogen and ozone might play therefore play in shaping plant communities. As a result, I developed an atmospheric pollution narrative for Dartmoor (Colston 2017a).

7. The rapid emergence and growth in popularity for re-wilding on Dartmoor over the past few years made me explore my own positionality on this issue. Earlier in my career and away from Dartmoor, I had been involved with two projects, The Great Fen Project (Bowley 2020 p140) and the Wicken Fen Vision (Colston 2003), neither of which labelled themselves as “re-wilding” projects, but could be described as such. So, in principle, I am a supporter of re-wilding in certain contexts. Both the Great Fen Project and the Wicken Fen vision, involved the consent of those landowners and occupiers of the land involved, without consent there could be no land acquisition or restoration / re-wilding works. In the Dartmoor context, I have been troubled that many support re-wilding initiatives without having gained the support or consent of the hill-farming Commoners or the Commons owners. These latter two groups are also almost universally

opposed to re-wilding initiatives as they cannot see where they fit into the narrative, for me re-wilding in such circumstances seems a modern form of enclosure. The counter-argument runs that without public subsidy, there would be no hill-farmers on the Commons so such a land-use change is a matter of economics. At the present moment public opinion has yet to be sought from other groups who use Dartmoor for its amenity, landscape and open vistas. As a result, the re-wilding lobby, whilst influential and currently in the ascendancy only represent a sub-set of the conservation lobby and not society as a whole.

8. All but one of the Commoners interviewed were multi-generational Dartmoor hill-farmers, who in their interviews stressed the role that they and their forebears had played through their traditional farming methods in creating the cultural landscape that is Dartmoor today. Whilst this relationship is acknowledged by organisations such as the DNPA and others its importance into the future is ambiguous. Unlike the Lake District which has recently been designated as a World Heritage Site on account of its cultural landscapes, such a designation does not exist for Dartmoor and therefore the importance of the traditions and cultural aspects of Dartmoor hill-farming are only informally acknowledged. For me the preservation of these traditions extend beyond the sentimental into the sphere of practicalities. As the DNPA edges towards policies to deliver a wilder landscape I am struck by two “wilding” projects I know well- the Wicken Fen Vision (Colston 2003) and the Knepp Wildlands Project (Tree 2018) which both rely on herds of grazing animals to deliver their conservation outcomes. By contrast on Dartmoor, the extensive areas of under-grazed *Molinia*, which are almost universally considered unappealing from a wildlife, archaeological and amenity perspective, have developed as a result of significant declines in stock, particularly cattle and ponies. Without a financially viable hill-farming community on Dartmoor who are experienced and willing to put grazing animals on the Commons there are likely to be further losses to the moor’s biodiversity i.e. the species and habitats favoured by conservationists and the public which were created as part of the cultural landscape. Further areas of the moor could become dominated by species such as *Molinia*, bracken and gorse which are of less value and are less valued than the communities that currently exist, albeit in sub-optimal condition.

9. When I started my PhD, the conflicts on the Dartmoor Commons seemed to be a three-way tussle between hill-farming, conservation and archaeology and the narrative approach appeared to shed light and detail on this contested landscape. What has been noticeable as my research progressed is how a series of new and often external narratives are influencing the older debates around over-grazing. In 2015 when Monbiot addressed the English National Parks Conference on Dartmoor (Colston 2015) I concluded that his ideas would not gain traction and would be ignored – how wrong I was. I have already discussed the atmospheric pollution narrative which was already developed but unknown to conservationists. In 2016 the UK voted to leave the EU and with it the Common Agricultural Policy. There has been great debate ever since on how the UK will devise a new agricultural and environmental policy (e.g. Gove 2018) and these discussions have yet to be concluded. Clarity around objectives, outcomes and funding levels have still to be given. Somewhat unexpectedly (at least to me) the whole debate around “meat, health and carbon” has developed considerably and added further complexity, division and uncertainty for livestock farmers particularly those in the uplands. Finally, the Covid-19 pandemic has added further uncertainty – the full consequences of which are as yet unknown or debated when it comes to hill-farming. The Dartmoor hill-farming meta-narrative has still to run its course and is perhaps in danger of being overtaken by external events.

12.2. Lessons to be learnt and issues to be resolved

12.2.1. Cutting the Cake and Common-wide agreements

As set out in chapter 4 the distribution of funding to individual hill-farmers has proved to be a very divisive issue. Block sums are allocated to the Commons Association and it is then up to the individual Commoners in that Association to determine amongst themselves how the money will be split. This issue, perhaps more than any other which have arisen since 1995 (the start of the ESA), has caused individual hill-farmers to fall out with each other over the allocation of the money. In the majority of cases these hill-farmers are neighbours and historically would have relied on each other to carry out the various collective Commoning tasks such as swaling and gathering. In some cases, the acrimony has been so great that it has not proved possible to negotiate an agreement and as a result all the Commoners involved with that Common have missed out on any agri-environmental payments. On Dartmoor

these agri-environmental payments account for around 25% of the subsidy monies that individuals receive, the remainder coming from the Basic Payment Scheme (and earlier Single Payment Scheme). As we leave the EU, BPS payments will be phased out over the next 7 years, starting in 2021 and then farmers will only then receive ELMS payments assuming they choose to sign up to the schemes to deliver a suite of public goods (Defra 2020).

There is a clear need to reform the way that these payments are allocated on the Commons as there is a real danger that if agreements cannot be reached in the future all the hill-farmers with rights on a Common will be unable to access any funding. With the loss of the BPS and the parlous state of hill-farm economics generally, this will make most, if not all the Commoners on that Common financially unviable.

During the course of my interviews this issue was repeatedly raised by hill-farmers as an issue which needed to be reformed. This is acknowledged by EN and the DNPA but there is a reluctance in those organisations to intervene as they do not wish to become the arbiters of difficult intra-Commoner conflicts.

The current situation tends to favour Commoners who have rights in excess of their in-by- acreages. During the 1965 Commons Rights Registration process some hill-farmers on Dartmoor registered all their grazing rights on their Home Commons as well as on the Forest, which was not challenged by the landowner thereby doubling the rights entitlement. Those that did not register these duplicate rights have been campaigning to overturn these allocations but the issue has never been addressed satisfactorily (Helen Radmore and Naomi Oakley pers comm). This landowner suggests that the phasing out of the Pillar 1 funding (i.e the BPS) may help to resolve this issue.

As you have some people who have registrations for common rights that are well in excess of their in-by- acreage. If all of the money swung from pillar 1 to pillar 2 not in quantum but in principle, then some of those agreements might be easier to break up because people wouldn't have the cushion that has been BPS to rely on. Doc001

The landowner may be correct in thinking that under such circumstances it will be in the interests of all Commoners on a Common to come to an agreement as otherwise no funding will be forthcoming to anyone. During some of the wide-ranging discussions I have attended on how the ELM Scheme should be devised many

stakeholders were keen to see the allocation of funding carried out on a farm-wide basis, opposed to a Commons wide basis, others arguing for a Dartmoor-wide allocation of money. It is beyond the scope of this research to propose solutions to this problem, but it is appropriate to highlight the risks involved with continuing with the allocation process used in the past. Indeed, at the time of writing the system used in the past is the one favoured by Defra for ELMS (Naomi Oakley pers comm).

12.2.2. Inflexible agreements

The agri-environmental schemes, starting with the ESA, through HLS and concluding today with Countryside Stewardship have been very prescriptive schemes which have lasted for a 10-year period (usually with a 5-year break clause). These schemes have proved to be difficult to amend as they are legal agreements between the government and individual hill-farmers. The inflexibility of this approach has been widely criticised by hill-farmers as they would argue that it was impossible to increase stocking numbers even when it was becoming apparent that many parts of the Commons were becoming obviously under-grazed. This issue is partly tied in with persistence of the dominant over-grazing narrative which refused to accept increasing stock numbers could assist the restoration of the Commons and partly due to the bureaucratic nature of the agreements. In the future a more flexible approach would be desirable, especially as the exact nature of what grazing and other management regimes are required is currently unclear.

12.2.3. Changing too many things at once

When the ESA was introduced, four parameters were changed overnight: sheep numbers, cattle numbers, cattle temporal grazing regimes and swaling regimes. As discussed in chapters 5 and 6 there has been much criticism of this approach as it has proved impossible to determine, especially in light of the general failure of these prescriptions to produce the required improvements to the habitat condition, which interventions have been effective and which have not. There is a general feeling today, with hindsight, that “the pendulum has swung too far in the other direction and there is now a need to increase cattle numbers” (Eamon Crowe, Natural England, speaking at the Forest of Dartmoor Commoners Association AGM 2019).

Whilst hill-farmer interventions trialled under the Dartmoor Farming Futures project in the Forest of Dartmoor have been modest and small in number (Chapter7), where

they have occurred they have been conducted in such a way so as it can be determined what interventions are effective and which ones are not. Along with the flexible approach detailed in 12.2.2. this approach to management interventions / experiments should be adopted within ELMS.

12.2.4. Favourable condition or not?

The purpose of introducing the ESA scheme along with the other agri-environmental schemes that followed was to halt the damage created during the Headage Days and by appropriate management regimes, as set out in the detailed prescriptions, return the Dartmoor's Commons, large areas of which were designated as SSSIs and SACs, to "favourable condition". Progress in this goal would be determined via "condition assessment" surveys. Indeed, the Government set a target that 80% of SSSIs would be in favourable condition by 2020. As, of course, we now know this has not been achieved, on Dartmoor only 16% of the designated Commons are deemed to be in "favourable" condition.

The "favourable condition" data has been used in recent years to demonstrate that only 26% of SSSIs within National Parks (NPs) are in favourable condition compared with 43.5% of those outside of NPs in England (Cox et al 2018). I have reworked the data in this paper to present how upland NPs (and Dartmoor in particular) fare against the lowland NPs along with those SSSIs outside NPs. The data is presented in Table 17 and it clearly shows that there is an upland / lowland divide – upland NPs manage an average of only 21% of sites in favourable condition compared to 53% in lowland NPs and 43.5% outside of NPs. When looked at in this way NPs in the lowlands are performing better than sites outside NPs but those in the uplands are performing much more poorly (Dartmoor is 5% below the uplands average). The analysis by Cox et al (2018) clearly struck a chord with Landscape's Review team (Glover 2019) where the report states that if National Parks are to be called in future, National Landscapes, they need a "renewed mission to recover and enhance nature".

In my experience from working on and studying the situation on Dartmoor, the sites in favourable condition are the woodlands whereas those in "unfavourable / unfavourable recovering" are the areas of open moorland on the Commons. It is of course debatable (and still contested) as to the reasons for this, as discussed in

previous chapters, but along with historic drainage projects, over-grazing and over-burning issues from the headage days, atmospheric pollution and climate change, it is clear that the restoration management prescriptions set out in the AESs have proven largely ineffective. All of this put together has left a legacy of hydrologically dysfunctional blanket bogs and wet heath, vast areas of under-grazed / un-grazed *Molinia*, extensive areas of dense bracken and expanding areas of gorse with little evidence to suggest that heather is recovering. A landscape where very significant areas of the Commons are dominated by the under-grazing narrative and other areas where the over-grazing narrative is still dominant as grazing animal, particularly sheep are focused on decreasing areas of palatable grazing. Over-riding these two grazing narratives are the unresolved atmospheric pollution and heather beetle narratives.

As discussed in chapter 7 on the Search for Consensus, many obstacles exist which prevent effective restoration: there is a need for more cattle to tame the *Molinia* jungle; a mechanism is still being sought which would enable the un-grazed areas of *Molinia* to be grazed again without causing animal welfare issues to the cattle involved; there is a need for more effective shepherding to stop over-grazing; there are time and people constraints when it comes to swaling and bracken management and there is a need for improved behaviour amongst and between some Commoners. All of this is overshadowed by the general state of hill-farm economics and its reliance on subsidy and this is particularly acute in the way that it relates to cattle along with the ongoing uncertainties regarding the future funding schemes and the fall-out from Brexit, particularly as this relates to future trade agreements.

Favourable condition assessment has been an important performance measure for Government in driving for better and richer wildlife habitats and it has proven a useful tool for conservation NGOs to argue for changes, certainly with the respect to the uplands. However, it has turned out to be demoralizing for both government agencies and hill-farmers alike as in a great many areas on Dartmoor's open moors the ecological condition has at best not improved and in many cases it has deteriorated over the past 30 years.

12.2.5. The impact of a decade of austerity for NE and DNPA

Over the past decade Natural England has had major cuts in its Defra grant in aid and as a result many of its outputs have been downgraded, one of the workstreams which has felt these cuts has been its work on SSSI condition assessment and as a result many sites only have partial and outdated condition assessments. The Chair of NE, writing to the Chair of the Environmental Audit Committee following his evidence to the Select Committee, stated that since 2014 NE had suffered a 45% reduction to its baseline Grant in Aid and said the following of its SSSI monitoring programme (i.e. Favourable Condition Assessment).

We have reduced our investment in the monitoring of our SSSI network meaning we do not have a current robust evidence base around the state of our SSSIs, their management needs etc (Juniper 2020)

In a Dartmoor context, staffing levels in 2011 were 9 Full Time Equivalent (FTE) and in 2020 this had been reduced to 0.5 FTE – a 94.5% reduction (Prospect 2020). Cuts of this severity leave the remaining staff (2 full-time officers who spend only part of their time working on Dartmoor) in an untenable position having to oversee dozens of agri-environment schemes involving hundreds of hill-farmers, land managers and owners. Commenting recently on these Prospect figures a former EN employee who I interviewed said to me

The hidden sadness to the Dartmoor issue is that, even now, if the EN Dartmoor contingency were re-instated, it would take years to re-gain (or gain in some cases) the respect and confidence of Dartmoor farmers and other land managers. (Cons003)

Over a similar period of time the DNPA has also undergone deep budget cuts - over the period 2010/11 to 2015/16 the Authority's income reduced by over 40 per cent in real terms and staffing levels were reduced by 25%. National Park Grant (the core funding from Defra) reduced by £1,404,984 in cash terms. The Authority has also had a 5% cut in grant funding for 2020-21, DNPA (2020). Whilst the staffing cutting in the DNPA are nothing like as severe as those experienced by Natural England, they nevertheless have impacted detrimentally on the Authority's ability to effectively engage with the debate on Commons' management across the Park, although thanks to funding from the HLF they have been able to look at these issues in detail

through “Our Common Cause”, partnership project with the Foundation for Common Land and the NT ⁶⁰.

Austerity within these two statutory bodies has had many impacts and for me one of the saddest manifestations of this is that, despite approaching 25 years of often heated debates around the state of the vegetation on Dartmoor’s Commons, we have no idea of the spatial extent of the “*Molinia* jungle”, encroaching bracken and expanding gorse or the extent or impact of Heather Beetles. Without even preliminary metrics around these matters, it is difficult to envisage how a strategy and plan can be drawn up to counter the negative trends that are causing the unfavourable condition assessments and as a result are leading to localized but significant areas of over-grazing along with no significant increase in heather growth.

Fortunately, during this period partly as a result of funding from Defra and South West Water, a partnership has been formed with the University of Exeter to determine the extent and depth of peat on the moor. This has allowed targeted use of funding to restore priority areas of blanket bog. Perhaps in the future the use of satellite imagery and / or LiDar can be used to map the *Molinia*, bracken and gorse so that restoration of these habitats can be targeted.

12.2.6. Whither Favourable Condition Assessment and the concept of SSSIs and SACs?

People are beginning to question whether the SSSI concept and condition assessment are still fit for purpose. Here is a quote from a senior member of staff at the DNPA

And I'll be honest and maybe this is a bit heretical, I'm not sure it is the right approach, SSSIs were of a time, aren't we after something rather different now, we are after a resilient productive environment, and resilient means making sure it can withstand the shocks of climate change and stuff like that, and SSSIs to me, increasingly seems to me a mechanism to fossilize not actually manage, and I'm not convinced actually the reasons for notifications in the first place were fully understood and are still valid. So almost your foundation on which you have then built a management regime and an assessment regime is probably pretty crumbly. (Stat-body002)

The comment in this quote about validity refers to the 1980/90s focus on heather communities and the concern about their decline. As discussed in the Re-wetting

⁶⁰ <https://foundationforcommonland.org.uk/our-common-cause>

narratives chapter there is a strong view amongst hydrologists that heather is a species which benefitted from an underlying dysfunctional hydrological regime.

I interviewed two senior representatives from Natural England and asked them about their views on and the current importance of condition assessment within the organisation. This first quote is from a Board Member.

I think it is [condition assessment] of far less significance than it was, occasionally we get caught up because some environmental NGO or someone criticises us over that, but on the whole it's not something that is high on our agenda at the moment. If you look at what Natural England is talking about, it's talking about net gain, it's talking about natural capital, it's talking about the people at the heart, it's talking about outcomes, it isn't spending an awful lot of time talking about SSSI condition. (Aca001)

I asked this senior manager if we can't get to favourable condition as an outcome that we want because of climate change, nitrogen deposition or because the farming systems have changed, isn't an outcomes approach based on condition assessment rather a hostage to fortune?

I think it is if you are fixed on the outcome. So, I think my honest view is if we don't have some sort of flexible view on outcomes we are just chasing something we may never find. So, nitrogen could mean that Molinia is the dominant thing. But actually that will only be an end point if people carry on farming, and some of the signs are they might not, you might be talking trees as the end point, and philosophically that might not be a bad thing. Actually practically in 100 years' people might not bat an eyelid and we'd be looking in books at the historic culture of the place.

It would be an absolute mistake to try and impose aspiration as I think probably the SSSI PSA target and agri-environment schemes did that, I think looking back that appeared as imposing, the damage [to the hill-farmers] is still there in a way, we talked about instead of loving the bogs and the dragonflies and stuff the farmers fear this thing called an SSSI, which is a strange construct anyway (Cons015)

These comments from Natural England and the DNPA on one hand seem to be an admission of failure backed by an aspiration to do much better in the future. More of a manifesto than a plan of action, the lessons of the last 30 years or so are that, particularly on the Commons, there is deep complexity and that the devil is in the detail.

12.2.7. The call for change and wildlife-rich National Parks

The situation is further complicated as the RSPB (Cox et al 2018) seem to be calling for 75% of SSSIs in the National Parks to be in favourable condition at the end of the Defra 25 Year Plan to Improve the Environment (HMG 2018). Pretty much all of the stakeholders involved with the management and future of Dartmoor's Commons are dissatisfied with the current situation but what is currently absent is a clear plan which can be turned into practical and effective action. It is therefore very difficult to see what practical steps can be taken within the legal and economic frameworks that hill-farming currently operates under to achieve this 75% aspiration. Even trial cold burns of *Molinia* in areas where the peat is deeper than 40cm are not permitted under Natural England guidelines (NE2019) and even if derogations were permitted to experiment with such an approach there are not the numbers of right type of cattle available to graze aftermath or the shepherding capabilities to ensure the cattle remain in the right place.

The Dartmoor National Park Management Plan (DNPA 2020b) is predicated on the premise of a pastoral landscape albeit with some wilder areas. The general consensus within the conservation organisations is that the state of nature within designated sites is less than it ought to be is because the farming practices are too intensive (i.e. the over-grazing narrative). As a result of the agri-environment schemes we have seen a de-intensification of hill-farming on the Commons of Dartmoor (as witnessed by the reduction in stocking numbers) and as a result we have seen the emergence of the *Molinia* "jungle", the expansion of areas of gorse along with extensive stands of dense bracken. It is these areas along with the large areas of dysfunctional blanket bog that have ensured that the designated sites are not in favourable condition and are symbols of the under-grazing narrative.

12.2.8. How and what to measure and by whom?

The irony of the situation is that the enormous expansion of *Molinia* on Dartmoor's Commons is a form of benign re-wilding in part caused by the de-intensification of grazing and burning. A further irony is that these areas are then regularly held up as examples of "sheep-wrecked" wildlife free zones which should be allowed to re-wild (e.g. Monbiot and Goldsmith in Colston 2018). It is possible / probable that in due course the dominant stands of *Molinia* will modify and perhaps diversify into

something different, at this point we do not know what that might be and how dependent that is on the restoration of a functioning water table, either way the timescale for such changes exceed those set out in the Defra 25 year plan (Richard Brazier and David Smith pers comm).

Favourable Condition Assessment, as it relates to the Commons of Dartmoor, was simply trying to establish whether there was a mosaic of moorland habitats which were delivering for wildlife. The criticism of the process being too technically complex are perhaps valid but at the end of the day FCA established that the mosaic of moorland habitats was not delivering for wildlife despite the imposition of 30 years of detailed moorland management prescriptions. FCA established that on Dartmoor's Commons, despite the best intentions and despite millions of pounds of government support the desired nature conservation outcomes had not been met.

The publication the Defra 25 year plan and the Glover Review are a call to action to improve wildlife (and other public goods) now. At this juncture, the importance of the competing narratives needs to be understood. There will be some who will focus on the areas of overgrazed sweet grass usually found on the edges of the Commons and call for further stock reductions, particularly sheep. This might appear an easier thing to achieve than focusing on the areas of *Molinia*, bracken and gorse where an impasse on progress appears to have been reached. As the *Molinia* chapter demonstrated, and despite the promotion of farmer led local initiatives, it has proved so far impossible to come up with a plan on how to bring these areas back into grazing. It is only through the restoration of the *Molinia* jungle, thereby opening up new areas of grazing for sheep, ponies and cattle that the intense sheep over-grazing on the much reduced areas of available grass near the edges of the Commons can be addressed. The undergrazing narrative needs to be understood and acknowledged by all stakeholders and not just hill-farmers. If not then further conflict is likely between the various parties and further stock reductions may see extensive areas of the Commons abandoned from a farming perspective as enterprises become entirely uneconomic.

The Environmental Land Management Scheme (ELMS) currently being developed by Defra and its trial partners (including a scheme on Dartmoor) does offer a way forwards. Unlike previous agri-environmental schemes, it is broader in its scope focusing on a wider range of public goods. Whilst managing Dartmoor for water

supplies and carbon storage and sequestration may not require the restoration of the areas of extensive *Molinia* stands; the conservation and enhancement of wildlife, the preservation of the historic environment along with the retention of Dartmoor's open vistas and landscape does. Additionally, if the organisations responsible for Dartmoor's conservation and management want to retain any levers of control to direct future management strategies it will be important to ensure that there are hill-farmers and commoners available and economically viable so that they can play their part.

So how do we turn the N.G.O.'s aspirations, the Glover Review's calls, the DNPA visions into practical arrangements and plans for hill-farmers, land managers and owners which will benefit all the public goods for the user groups and stakeholders?

<i>Upland National Parks</i>	Total area ha	% of NP as SSSI	Area of SSSI ha	% in 'favourable condition'	Area of 'favourable condition'	% of 'unfavourable / unfavourable recovering'	Area of 'unfavourable / unfavourable recovering'
Dartmoor	95,603	27%	25,813	16%	4,130	84%	21,683
Exmoor	69,341	28%	19,415	15%	2,912	85%	16,503
Lake District	236,568	18%	42,582	23%	9,794	77%	32,788
North York Moors	144,194	3%	4,326	11%	476	89%	3,850
Northumberland	105,171	12%	12,621	32%	4,039	68%	8,582
Peak District	143,889	35%	50,361	16%	8,058	84%	42,303
Yorkshire Dales	218,642	23%	50,288	28%	14,081	72%	36,207
<i>Lowland National Parks</i>							
New Forest	56,693	57%	32,315	52%	16,804	48%	15,511
South Downs	123,279	8%	9,862	47%	4,635	53%	5,227
The Broads	30,130	24%	7,231	63%	4,556	37%	2,676
<i>All National Parks</i>	1,223,510	21%	254,814	27%	69,484	73%	185,330
<i>All Upland National Parks</i>	1,013,408	20%	205,406	21%	43,489	79%	161,917
<i>All Lowland National Parks</i>	210,102	24%	49,409	53%	25,995	47%	23,414

12.3. The Tragedy of the Commons or the Tragedy of the Commoners?

The previous sections in this chapter have discussed issues around bureaucratic procedures, management prescriptions, monitoring and future ambitions for the Commons on Dartmoor. This section addresses issues around the behaviours and governance of the Commoners.

I remember when I was an undergraduate and postgraduate in the 1980s hearing Garret Hardin's phrase "The Tragedy of the Commons" (Hardin 1968) and at the time it seemed the perfect metaphor for the over-grazing narrative unfolding at the time in the UK's uplands. Commoners were unable or unwilling to take collective responsibility for the sustainable management of the land they occupied, instead they were driven by economic incentives and realities and ended up overexploiting their finite resources for individual personal gain. Conservationists, like myself, took the "Tragedy" phrase at face value, as it suited our understanding of the situation in the uplands and few of us actually read or understood the original paper that the phrase came from.

Hardin is a controversial figure, partly on account of his racist ideology (Milenberger 2019) and partly because his solution to the "Tragedy of the Commons" was to see them privatised so that single occupancy of land could be achieved which in his view would ensure that over-exploitation was avoided as he asserted that it would not be in an individual's self-interest to unsustainably damage their own assets. Hardin (1968) concedes that alternatively, high-level State intervention could conceivably also bring sustainability to the management of Commons but he rejected such an approach as his political views were opposed to the strengthening of the State.

Elinor Ostrom became the leading critic of Hardin's conclusions (Ostrom 1990) and instead she argued that the collective management of common land (or Common Pool Resources as she called them) was desirable and possible via negotiations as long as seven principles were followed (Ostrom 1990 p90). Ostrom also asserted that high-level State intervention was rarely effective in ensuring sustainable management on commons and that instead lower-level local arrangements and governance were preferable.

Kelly argues that the "tragedy of the Dartmoor Common" was in fact its saving. He suggests that during the Headage Era, Commoners were encouraged by M.A.F.F. to over-exploit the Commons for personal gain and national food production but once the consequences of these policies became clear "changes in the political climate had decisively moved against developments that would alter the ecological condition of the moorscape" and the agri-environment schemes were introduced to restore sustainable management practices (Kelly 2015 pp416-7).

Yet, as the core research in this dissertation has demonstrated, the search for consensus and sustainable management practices which satisfy the various stakeholders have proven hard to achieve.

Hardin's preferred solution to the "Tragedy of the Commons" i.e. privatisation is somewhat meaningless in the Dartmoor (and UK) context as the vast majority of the Commons on the moor are already privately owned (on Dartmoor only Haytor and Bagtor Common and part of Holne Moor are in public ownership via the DNPA). The term "common" applies to rights to land (grazing in the Dartmoor context) afforded to selected individual families who live in the locality (Christophers 2018 p80). Even the apportionment of specific areas of land to individuals for sole occupancy is impractical as there are multiple potential occupiers (both active and non-active graziers who have the rights) and the majority of Commons are unfenced. Fencing parts of the Commons to provide single occupancy areas of land which could then be "rented" to individuals is not permitted under current legislation and even if it were it would detrimentally impact on the landscape and special nature of the Dartmoor. Additionally, the extinguishing of common rights would require Parliamentary legislation for which at the current time there appears to be no political appetite.

Ostrom's recommendations for the sustainable management of Commons include seven Design Principles along with the provision of local governance. The 1985 Dartmoor Commons Act enabled the Dartmoor Commoners Council to be set up as a statutory body to oversee the sustainable management of Dartmoor's Commons and as such it meets Ostrom's criteria for local governance. Acland (1998) conducted research to determine how, in theory and in practice, the Dartmoor Commoners Council responded to and implemented Ostrom's 7 Design Principles. His results are summarised in table 18. Whilst in theory the Dartmoor Commoners Council had the governance powers to implement all 7 Principles, he concluded that in practice "the DCC fails or partially fails all the tests". Acland also described the DCC "truly anachronistic" and an organisation which was reactive, allowed minor issues to dominate agendas, regularly avoided using the statutory powers it had been granted and rarely took action against wrong-doers (Acland 1998 p53).

Acland concluded his dissertation summarising his interview with the late Ian Mercer who had been the Chief Executive of the DNPA and at the time of his interview with Acland was the Secretary General for the Association of National Park Authorities.

Mercer has reluctantly conceded that the current situation on Dartmoor is not amenable to local self-regulation and that only direct state intervention to enforce sustainable management will be effective. Acland (1998 p66)

Whilst it can be argued that Acland's research is over 20 years old and it not pertinent to 2020, my own research has shown many contemporary issues such as bullying, ineffective shepherding, inter-Commoner disputes over the distribution of agri-environment scheme payments, disputes over grazing rights and issues of localised over-grazing and under-grazing are not addressed effectively by the DCC.

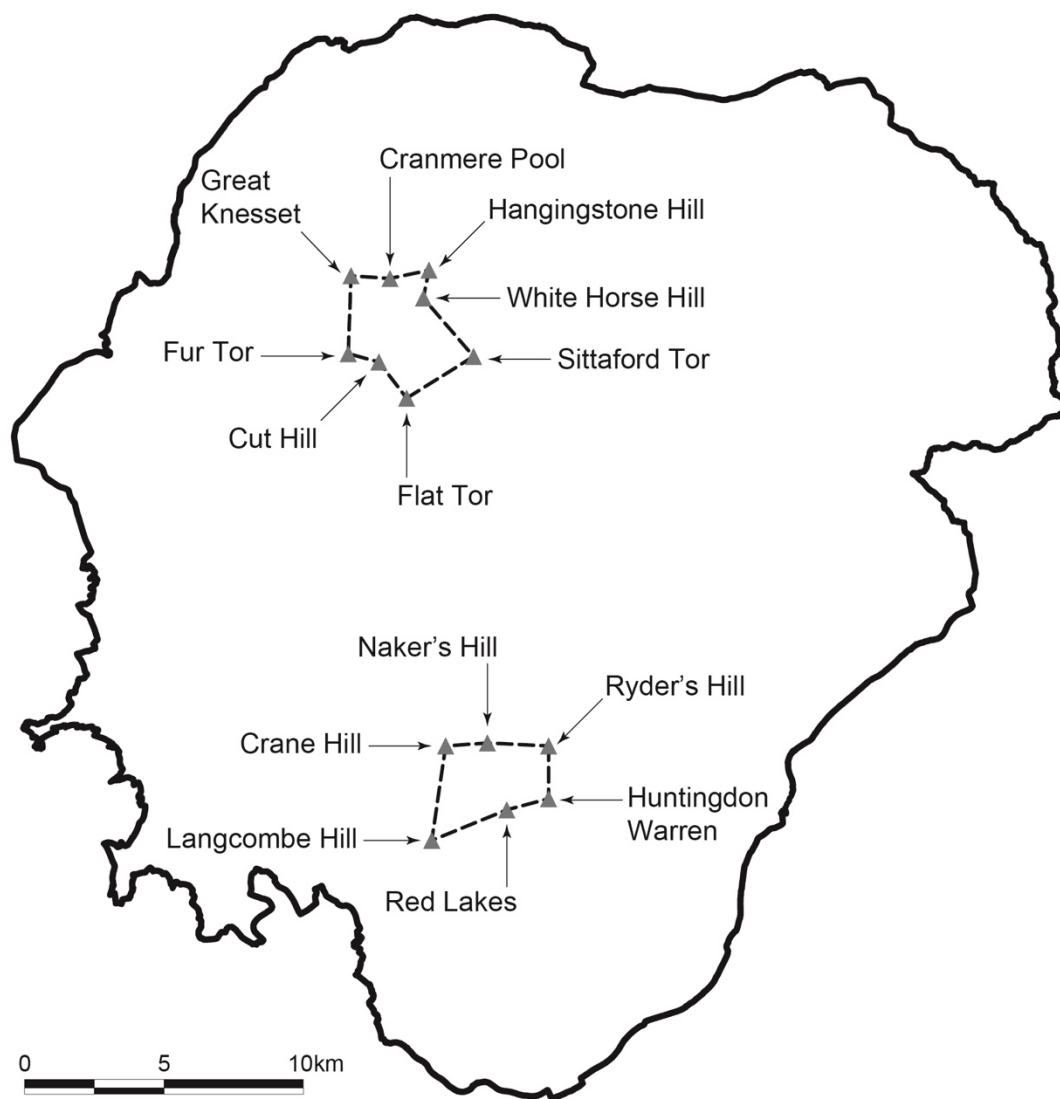
Table 18 Design Principles illustrated by long-enduring Common Pool Resource Institutions
<p>1. Clearly defined boundaries <i>Individuals who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundary of the CPR itself</i> Dartmoor theory – the boundaries of the Commons and the people with rights over them were established by the 1965 Act and subsequent decisions Dartmoor practice – there are underlying resentments about the 1965 Act and subsequent decisions which have not been resolved and which result in disputes</p>
<p>2. Congruence between appropriation and provision rules and local conditions <i>Appropriation rules restricting time, place, technology, and/or quality of resource units are related to local conditions and to provision rules requiring labour, materials and/or money</i> Dartmoor theory – the 1965 Act and the Regulations provide for localized controls over the appropriators of the resource in response to local conditions Dartmoor practice – the Council has taken occasional local action, but usually when pressured by external bodies. It overlooks widespread Over-grazing of the Commons</p>
<p>3. Collective choice arrangements <i>Most individuals affected by the operational rules can participate in modifying the operational rules</i> Dartmoor theory – the Regulations are difficult to change due to the need for the Secretary of State’s approval Dartmoor practice – The Council is very resistant to changing its Regulations and has only recently recognized the need to do so</p>
<p>4. Monitoring <i>Monitors, who actively audit CPR conditions and appropriate behaviour, are accountable to the appropriators or are the appropriators</i> Dartmoor theory – the appointment of Reeves is allowed for in the 1965 Act and the Regulations Dartmoor practice – Reeves have been discussed but never appointed. Monitoring of the CPR is carried out by members of the Council, but only in a random way</p>
<p>5. Graduated sanctions <i>Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness of the offence) by other appropriators, by officials accountable to these appropriators or by both</i> Dartmoor theory – Regulation 21 allows for a range of fines to be imposed Dartmoor practice – sanctions are applied in a haphazard way and some escape sanction altogether</p>
<p>6. Conflict resolution mechanisms <i>Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts amongst appropriators or between appropriators and officials</i> Dartmoor theory – the Dartmoor Commoners Council is a “low-cost local arena” for resolving disputes which meets monthly Dartmoor practice – there is only limited access to the Council by complainants – for instance the Walkhampton Commoners, in all 10 years of their dispute have never been allowed to address the Council. Many conflicts are left unresolved</p>
<p>7. Minimal recognition of rights to organise <i>The rights of appropriators to devise their own institutions are not challenged by external government authorities</i> Dartmoor theory – external government authorities did indeed challenge the Commoners’ right to be given such wide-ranging powers. However, the right was ultimately granted to the appropriators Dartmoor practice – with the passage of time, the right of the Council to exercise control over Dartmoor is increasingly in question amongst a wide range of government and amenity bodies, leading to increasing conflict</p>
<p>After Acland (1998 pp59-61), the Design Principles are based on Ostrom (1990 p90) The 1965 Act refers to the 1965 Commons Registration Act.</p>

12.4. And my opinion? Here is my narrative.

It is clear at this point in time that none of the stakeholders are really happy, hill-farm economics are not profitable without tax-payer input, wildlife is in decline, archaeology is becoming enveloped and access to parts of the moor is now difficult and hazardous. One ray of hope, at least to some of the stakeholders is the blanket bog restoration projects which are returning rare wildlife to the moors and creating an exciting new landscape.

With regards to the *Molinia* issue, it is also clear that management techniques needed to reduce its prevalence are elusive, the requisite number of cattle are not available during the summer months to graze it all and due to pressures on their in-by-land the hill-farmers have neither the time nor the resources needed to shepherd their animals effectively. These comments relate particularly to the more remote and high-altitude areas of the moor, particularly but not exclusively the Forest. There are a number of examples elsewhere on Dartmoor where hill-farmers have worked hard to ensure the right number of animals are in the right place at the right time and as a result the *Molinia* has been suppressed.

Perhaps it is time to reassess the desired management regimes on many of the more remote areas of deep peat, for example the huge area of blanket bog encircled by Flat Tor in the south to Cut Hill, Fur Tor and Great Knesset in the west, Cranmere Pool and Hangingstone Hill in the north and White Horse Hill and Sittaford Tor in the east, currently a massive area dominated by ungrazed *Molinia* and perhaps should be considered as an area of blanket bog awaiting hydrological restoration rather than an area in need of cattle grazing. A similar case could be made for areas on the south moor in the Langcombe Hill, Crane Hill, Naker's Hill, Ryder's Hill, Huntingdon Warren, Red Lakes area, but herein lies the tragedy of austerity, there are simply not the resources in terms of people and project funds to think all this through and get the buy in of those potentially impacted within Natural England or the DNPA. The two areas are illustrated in figure 2.



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Figure 2 Areas of blanket bog requiring hydrological restoration as opposed to cattle grazing.

Yet despite these shortcomings, the external environment moves at pace. The Agriculture Act has now been approved by Parliament (HMG 2020) and therefore future payments to hill-farmers will be paid only for the provision of public goods as the Basic Payment Scheme is phased out. Such an approach has been welcomed by many but nevertheless there is a great deal to do to turn this high-level strategy into clear, workable and measurable plans on the ground. The fact that Dartmoor is a trial for the new ELM scheme which will deliver the strategy, is to be welcomed as is the associated member of staff within the DNPA which accompanies it. It is also good news that the DNPA have been able to recently fund a new post: Land

Management Advisor – Nature Recovery as this officer can play a big role in helping hill-farmers and other land managers adapt to the new situation and help restore nature.

Nevertheless, the situation on Dartmoor's Commons is very precarious; Natural England's recent admission that it is currently incapable of adequately monitoring "favourable condition" (Juniper 2020); the lack of clarity surrounding the DNPA's ambitions for "wilder core areas" under their new Management Plan (DNPA 2020b); the, as yet, unresolved targets and metrics for the "public goods" that are expected and desired from the forthcoming ELM schemes and the uncertainty surrounding the budgets that will be associated with the new scheme mean that forward planning is very challenging, whether you are a hill-farmer, a landowner or a statutory / regulatory body. At this point it is not clear what the negotiated trade deal that the UK has secured with the EU means for exporting livestock; the future of farming on Dartmoor, with sheep at its core is therefore still uncertain.

Hill-farming in the uplands in England and on Dartmoor has undergone a large number of changes over the centuries in methods of farming, traditions, economic effectiveness and profitability, from its heyday prior to the dissolution of the Monasteries (Winder 2017), through the eras of transhumance (Fox 2012), to the 19th century descriptions of Dartmoor as "the finest sheep pastures in England" (Vancouver 1808), to the agricultural depressions following repeal of the Corn Laws, the mixed outcomes of the 20th century inter-war years followed by a new era of productivism with the 1947 Agriculture Act (Winter 1996) and culminating with the switch from production to environmental outcomes (Hodge 2016). Hill-farming is about to undergo another great change and it is unclear, at the moment, whether this will facilitate a new series of unintended consequences or whether the desired multiple environmental will be forthcoming.

It seems inevitable that a significant further re-structuring of hill-farming in England is about to occur. Some hill-farmers will scale back their operations, others will retire, some will take up second jobs, others are likely to go bankrupt and some may be able to adapt to the new market conditions to deliver the necessary public goods whilst still undertaking a reformed type of hill-farming.

One thing that will not change on Dartmoor's Commons is the existence of grazing rights, their utilisation may diminish considerably but they will not be extinguished, the rights remain with the Commoners whether they exercise them or not and therefore they should be considered as part of the solution unless there is a new drive to see the remaining Commons "enclosed" by statute. If Dartmoor's hill-farmer are disenfranchised it is possible they will use their rights to make a point, possibly obstructing and waiting for better times – they will not give up and I doubt they will leave quietly.

My own interviews with Dartmoor's hill-farmers were conducted after the UK had voted to leave the EU but before the full ramifications of this decision were fully clear. More research is needed to determine hill-farmer attitudes to the proposed changes that are now imminent. I suspect the first quote from this hill-farmer is shared by many, if not all but I cannot tell whether many others share his second set of views.

Brexit – I'm worried to death, I don't know what it is going to be.

I don't want to be a park keeper by name or by nature, but I am quite happy for the things I do to deliver park keeper measures as long as we can do them as food producers really. (Hill-farmer018)

Even if Dartmoor's hill-farmers have the desire to engage constructively in the new ELM scheme, questions remain about their governance structures, will individual Commoners Associations and the Dartmoor Commoners Council feel willing and able to intervene to police themselves to reduce the incidents of "bad" and "ugly" practices? If the answer to this leads to a continuation of the status quo this may very well prove to be an obstacle to success and their own survival, whilst it can be argued Dartmoor's hill-farmers have been "victims" they have also been "villains", can they now become "heros"?

James Rebanks, the well-known Lake District farmer and author, who has moved away from traditional farming methods towards regenerative agriculture to encourage wildlife and other public goods on his farm suggests that his farming friends "*crudely*" divide into three categories: a third have begun to change their farming and are "*committed to trying to be good ecological stewards*", another third are "*open to change but have limited room for manoeuvre as they are in the financial realities of trying to run a profitable business*", and the final third are "*deeply sceptical – or still true believers in the intensive post-war model of farming*" (Rebanks 2020).

In a Dartmoor context it is currently not known how many hill-farmers want to become “good ecological stewards” and how many are still “true believers in the intensive post-war model of farming”. It is also not known whether the “financial realities of trying to run a profitable business” will allow the “ecological stewards” or the “true believers” to carry on farming on the moor.

I am reminded again of the quote from the Galloway hill-farmer Patrick Laurie which I used to conclude Chapter 10, on how grazing animals can combine to produce farmland rich in wildlife and a word of warning about what happens if cattle are excluded. I do this, not of out sentimentality, but because I believe that during the “headage days”, the moor had too many animals grazing it and now during the “agri-environment period” there are too few. If the “public money for public goods era”, is one without grazing animals and hill-farmers, then I am of the view that there will be a net loss of public goods.

If what you see with your own eyes doesn't fit the narrative you have been told about or you have constructed question it, research it further and find a better narrative. Get the narrative wrong and you will pursue the wrong solution.

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