



Natural England

UPLAND EVIDENCE REVIEW

**Evidence to be submitted
no later than 5pm on 14 September 2012**

Evidence Submission Form

Please use this form for submitting evidence to Natural England. Please use one row for each source of evidence.

Name:	Viv Lewis
Organisation (if applicable):	Federation of Cumbria Commoners
Telephone:	01931 713 335
Email:	viv@cumbriacommoners.org.uk

N.B. the three topic areas for review are set out below. For further detailed information about each topic, and the specific questions the review will seek to address, see [Natural England Review of Upland Evidence 2012 – Scoping Document](#):

Topic 4 – Moorland grazing and stocking rates

Determination of environmentally sustainable stocking regimes on moorland.

Topic 5 – Restoration of degraded blanket bog

Feasibility of restoring degraded blanket bog including areas such as drainage, vegetation cover (peat forming species), and climate change.



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NB. This submission is based on a discussion around the questions posed in the Uplands Evidence Review held at a committee meeting of the Federation of Cumbria Commoners on September 3rd 2012. The further comments section contains anecdotal evidence based on farmer observation. Where possible we have tried to add academic evidence to back our observations/ lived-in experience. We understand that there will be a Phase 2 of this review. As part of this Phase we request that upland farmers' knowledge and experience is requested and fully taken into consideration. Finally, we recognise the importance of gathering current published research and evidence, but how will the review handle gaps in evidence?

Review topic	Source of evidence	Further comments
Indicate the review topic to which this evidence relates. N.B. The evidence may relate to more than one topic.	Briefly describe the evidence and where we can find it if it is not attached to your response. For instance, name of the report, the author, section or paragraph numbers, web addresses.	Please limit this to 2 or 3 sentences.
What methods of stocking rate calculation, or setting	Restoration of BAP Habitats on Upland Grass Fell Commons: PROVISION OF ADVICE ON GRAZING LEVELS TO	<ul style="list-style-type: none">From an agricultural perspective – condition of livestock

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<p>grazing regimes, consistently provide regimes that maintain or restore moorland biodiversity, and what are the key parameters that calculations should include?</p>	<p>H & H BOWE CHARTERED SURVEYORS. Robin J Pakeman & Jim McLeod</p> <p>The heft: a multifunctional management tool L. Mansfield, R. Burton, G. Schwarz, K. Brown² and I. Convery. International Journal of Biodiversity Science and Management 2 (2006) 1–4</p> <p>The future of public goods provision in upland regions: learning from hefted commons in the Lake District, UK Rob J. F. Burton, Gerald Schwarz, Katrina M. Brown, Ian T. Convery and Lois Mansfield</p>	<ul style="list-style-type: none">• Sheep grazing is not a tap you can turn on and off; constant adjustments in stocking rates are hard to deliver and damage hill farming systems.• Consistent grazing regimes have to be underpinned by farming systems that are economically viable.• Any reductions in stocking rates must be proportionate across the board to those farming the common/ moorland.• Hefting is a finely balanced system developed to graze flocks of sheep with different owners on open common land/moorland without fences. Taking an entire sheep heft of the fell as a way to reduce overall stocking rates does not provide consistent grazing regimes. The delicate balance of grazing pressure between the hefts is upset, a vacuum is created and other
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		<p>sheep stray into this area but do not uniformly graze.</p> <ul style="list-style-type: none"> • Are consistent grazing regimes possible? Sheep are not easily controllable they are not robotic lawnmowers and will not necessarily graze evenly/ consistently.
<p>What changes have taken place under recent reductions and seasonal changes in sheep grazing, and what is the significance of these changes?</p>	<p>See Trends in Pastoral Commoning http://publications.naturalengland.org.uk/publication/46004?category=40026</p> <p>Sheep numbers in Lake District JCA have decreased from 794,981 in 2000 to 597,576 in 2009 – see National Character Area 8: Cumbria High Fells</p> <p>Economic determinants of biodiversity change over a 400-year period in the Scottish uplands. Nick Hanley, Althea Davies, Konstantinos Angelopoulos, Alistair Hamilton, Alasdair Ross, , Dugald Tinch and Fiona</p>	<p>Reductions in sheep numbers with the following consequences:</p> <ul style="list-style-type: none"> • Sheep are more difficult to gather • Over time there will be both localised overgrazing and undergrazing. As excess grass becomes long and coarse it becomes less palatable resulting in undergrazed areas. Sheep seek out the more palatable grasses (leading to some overgrazing in places). Overall there is a slow decline in livestock productivity as feed value of the moorland grazing

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	Watson. Journal of Applied Ecology 2008, 45,, 1557–1565	deteriorates. <ul style="list-style-type: none">• On acid grassland grazing pressure needs to be maintained to ensure palatability
Over what timescales can grazing-related change in plant structure and diversity be observed or expected?		<ul style="list-style-type: none">• Have observed increase in heather coverage within 2-3 years after ponies taken off the common• In 1998 all livestock were removed from a 1,800 acre common. Now the commons is brown throughout the summer, the more delicate flowers have plants have disappeared, numbers of song birds and the insects they feed on have been reduced.
How is 'under-grazing' defined? What are the effects of low intensity regimes, set to restore		<ul style="list-style-type: none">• When a surplus of grass left over and there is not a good clean up of vegetation from one growing season to the next.• Example – a small area of common fenced off to protect the

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small areas of priority habitat within a moorland mosaic, on other parts of the moorland including non-target habitats such as acid grassland		blue gentian flower. With no grazing the grass has flourished and the flower has been swamped – it hasn't been seen in recent years
What factors influence spatial patterns of grazing? How effective are tools such as shepherding and burning in influencing grazing distribution, and how do they interact with stocking rates to achieve improvements in habitat condition and ecosystem		<ul style="list-style-type: none">• Shepherding can be a useful tool but it depends on the shepherding plan and what is trying to be achieved. For example it is much easier to keep sheep off the top of the hills in winter and much harder to keep them from the top in summer• Feed blocks and feeding hay are useful tools to influence grazing distribution in winter• If shepherding is not done right it can mess up the hefting

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services?		system <ul style="list-style-type: none">• Shepherding is unlikely to provide a solution where the hefts have been abruptly removed• There are less shepherds around and shepherding skills are being lost. If something is not done about this shepherding as a grazing management tool will not be possible.
Do different types of livestock (species and breed), and combinations of livestock, affect moorland habitats differentially?	Assessment of Expert Opinion: Seasonal Sheep Preference and Plant Response to Grazing: Meg L. Pollock, Colin J. Legg, John P. Holland, and Chris M. Theobald. Rangeland Ecol Manage 60:125–135 March 2007	Traditional breeds and grazing systems have evolved over generations and have developed to make efficient use of poor quality forage, adverse climates and steep topography. They have produced the moorland habitats. Since FMD there has been some change in breeds of sheep kept on the fell. More white faced sheep (Cheviots, Llwyns) are being kept. The sheep are doing OK – may be because of reductions in stocking

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		rates and reduced grazing pressure. They may eat different grasses but unsure. In some places cattle are back on the fell and are doing OK. As numbers are small change is likely to be very gradual.
What are the effects of absence or abandonment of grazing on moorland biodiversity and other ecosystem services?		<ul style="list-style-type: none">• Increase in invasive species, bracken, gorse, scrub

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