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UPLAND SHEEP: A CURSE OR VITAL TOOL?

Lois Mansfield, Principal Lecturer in Upland Resource Management,
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OUTLINE

• The characteristics of upland sheep, how and what they eat
• Ecological context – what does this produce?

• Cumbrian Uplands: a case study
• Critique of upland sheep: pros and cons.

• A changing institutional context – what next for sheep?
• Some concluding thoughts
WHAT IS AN ‘UPLAND’ SHEEP?

Key Distinguishing Characteristics

- Ability to cope with harshest of physical environments – *breed variation*
- Ruminants which break down cellulose on digestion

- Large rumens make upland sheep more efficient than lowland breed
  BUT Produces large amount of offal no longer desired
- Cf. lowland sheep with smaller rumens which cannot break down
  poor quality forage species

- Farmers have responded by decreasing rumen capacity but this then
  requires supplementary feed on hillside creating other issues

- Lower lambing rate than lowland breeds (lower returns)

(Mansfield, 2011)
HOW DO THEY EAT?

Front teeth cut to create leaf blades
Back teeth grind to prepare for digestion

Effect of cutting encourages regrowth – known as tillering, hence thicker sward

Effect of these two is a ‘lawn effect’ unlike other ruminants
WHAT DO THEY EAT?

Sheep forage for different plants at different times of year

They preferentially graze habitats in order:
- Calcareous grassland
- Other grasslands
- Dwarf Shrub Heath (Ling)
- Blanket Bog

Hillsides are a mosaic of these habitats, thus some areas are grazed before others.

Overgrazing is not universal. Other areas can be undergrazed.
ECOLOGICAL CONTEXT - what does this produce?

Grazing by upland sheep and its supporting agricultural system has led to the development of a range of plagioclimax habitats.

Using work by Ostermann (1998), nearly 50% of habitats identified in the EU Habitats Directive 1992 are a product of upland farming systems.
CASE STUDY – Cumbrian Uplands

TYPICAL HILL FARM BUSINESS INCOME:
40% farming
30% diversification
30% subsidy

(Wallace & Scott, 2018)

Gross margins range from minus figures to around £10K/ annum.

Key structures: inbye, intake and fell

Key processes: hefting, gather and stratification
PRO - sheep & ecosystem services in the Cumbrian uplands

- **Provisioning Services**
  - Food (lamb, beef, milk)
  - Fibre (wool)
  - HEP & Wind turbine

- **Regulatory Services**
  - Carbon storage & climate mitigation
  - Flood risk management
  - Water quality
  - Wildfire risk prevention

- **Supporting Services**
  - Nutrient cycling
  - Water cycling
  - Soil formation
  - Habitat provision

- **Cultural Services**
  - Landscape aesthetics
  - Cultural heritage
  - Biodiversity
  - Health benefits
CONS – upland sheep farming

‘The land has been sheepwrecked.’ Monbiot (30 May 2013).

**Undergrazing** – selective grazing does not control the build up of undesirable plant litter and regrowth does not occur of all plants.

**Overgrazing** – ‘grazing numbers adversely to affect the growth, quality and species composition of vegetation.
Soil can be removed via erosion.

**Poaching** - destruction of soil structure through repetitive hoof movements on one spot as a result of supplementary feeding.

**SOCIO-ECONOMIC**

Operating at economic margins of cultivation requires subsidy and negative public perception.

Changing consumer demand for less offal.
<table>
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<th>CHANGING INSTITUTIONAL CONTEXTS</th>
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<td>DEFRA Agriculture Bill Consultation: ‘Health &amp; Harmony’</td>
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SOME CONCLUDING THOUGHTS

Institutional changes in the UK re-inforce the role upland sheep farming has to play in the delivery of a range of ecosystem services.

These are explicit tools, rather than the previously implicit attitude of institutional players of the last eighty years of policy.

It still remains unclear whether Brexit will derail the upland sheep farming system – a case of too little, too late.
REFERENCES


Wallace & Scott (2018) ‘Impact of Brexit Scenarios on Grazing Livestock Farms in the Lake District National Park’ report prepared for LDNPA; University of Newcastle