

Grazing Regime Evaluation Case Study:

Site 1 - Ashtrees Dipper, ADAS Redesdale, Northumberland

- 103 ha of degraded mixed wet heath
- System scale study comparing two reduced year-round sheep stocking levels

Background

Before 1989, the site was grazed at 2.1 ewes ha⁻¹ with occasional large-scale burning. The site was then split in two halves and grazed at 2.1 and 1.5 ewes ha⁻¹ respectively until 1995. From 1995 to 2002, stocking was reduced from 2.1 to 0.66 ewes ha⁻¹ in one half and kept at 1.5 ewes ha⁻¹ in the other, with 25% removed during winter.

Under 2.1 ewes ha⁻¹, the vegetation had undergone long-term deterioration, with increase in grasses, especially *Molinia caerulea*, at the expense of *Calluna vulgaris*, *Sphagnum* spp. and other dwarf shrubs and wet heath species.

Under reduced stocking rates, the decline in *Calluna* was arrested but its cover only increased where it was already dominant and at 0.66 ewes ha⁻¹. At this stocking rate, *Molinia* cover also increased in grassy areas. *Juncus* spp. increased in rush pasture and areas of *Nardus* at both stocking rates. Reduced sheep numbers therefore slowed the deterioration but did not result in restoration of wet heath.

The site has been the subject of Defra-funded research into moorland management since 1990 and is part of a 1580 ha ADAS research centre.

Habitat condition assessment

Under the two sheep-only grazing regimes, the site still shows signs of degradation from the formerly high stocking levels and surface drainage. This is manifest primarily by local dominance of grasses and reduced cover of the characteristic wet heath species *Erica tetralix*, *Sphagnum* spp., *Carex* spp., *Trichophorum cespitosum*, *Calluna vulgaris*, *Vaccinium myrtillus* and *Empetrum nigrum* at 80% of sample points. The invasive *Juncus effusus* is also present at 30% of sample points and there is little pioneer regrowth of dwarf



shrubs. The site is in favourable condition with respect to other invasive species, burning, erosion and physical disturbance.

Current browsing levels are acceptable at 0.66 ewes ha⁻¹ but there is still localised heavy browsing of dwarf shrubs at 1.5 ewes ha⁻¹.

Farm business and livestock

The current grazing regime is Scottish Blackface sheep @ 1.5 & 0.66 ewes ha⁻¹, minus 25% during November-February. All ewes are taken off the hill for 3 weeks for mating in November and lambing in mid-April. Supplementary feeding of hay and feedblocks is done in January. Twin-bearing ewes are removed after pregnancy scanning in February and single-bearing ewes removed prior to lambing. All ewes and lambs return to the site 3 weeks after lambing. Lambs are weaned in early September and removed for finishing and replacement hogs returned to the site.

During 1995-2001, lamb weaning rates for 1.5 and 0.66 ewes ha⁻¹ were 122% and 131% and liveweights at sale were 34.5 and 36.9kg. Gross margins were £42 and £47.70 ewe⁻¹ and £62.10 and £31.10 ha⁻¹. With agri-environment scheme payments, gross margins would be £100.10 and £81.20 respectively.

Other management

Plot-scale experiments, including control of *Molinia*, have been carried out on site.

Shooting, recreation and landscape

No shooting or associated management is carried out and there are no public footpaths. Landscape is heterogeneous in appearance and fences are intact, although there is a sharp habitat boundary between the two halves. Flowering *Calluna* is visually striking in some areas but *Eriophorum* spp. flowers tend to be grazed off.