



Habitat management news

Compiled by Conservation Management Advice, RSPB

Impacts of extensive grazing at Nethergill Farm

Nethergill Farm (www.nethergill.co.uk) is an upland farm in the Yorkshire Dales, covering approximately 180ha and sitting at an elevation of 380–490m. The farm consists of 23ha of in-bye (including hay meadow), 8ha of mature woodland, and some 149ha of moorland (Oughtershaw Moss). The farm was managed for intensive sheep-rearing until 2010, when it was taken over by Fiona and Chris Clark, who farmed there until 2020. Their management ethos was centred on promoting biodiversity on the farm, and the new owners, Helen and Dave Thomas, are continuing on this trajectory. A farm audit was undertaken in 2011, during which the entirety of the land holding was mapped, using the National Vegetation Classification (NVC) system, and fixed-point quadrats were established in priority habitats. Vegetation-monitoring was

Above Extensive grazing at Nethergill Farm has led to an increase in *Sphagnum* mosses in areas of blanket bog.

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conducted in 2016 and 2021, and results were analysed in the context of changes in management that took place over that period. Priority habitats on the farm include blanket bog, rush-pasture, lowland meadow, upland flush and fen, ponds, upland heathland, upland birchwood and wet woodland. Non-priority habitats are species-poor rush-pasture and Purple Moor-grass *Molinia caerulea*-dominated vegetation, semi-improved grassland and acid grassland. To facilitate analysis, Chris Clark supplied an overview of farming operations for the period 2010–2020, including data on annual stocking density and levels of connectivity across the farm. The latter is key, as connectivity through the farm landscape allows livestock the freedom to roam at will and to select grazing areas, gathering places and access points to water

and shelter. Prior to 2010, upwards of 300 sheep were maintained on the farm with significant use of imported feed. Since then, grazing intensity has been reduced incrementally, to eight beef cattle and five sheep in 2020.

From 2010, inputs of fertiliser and use of herbicide were very limited and feed was imported only when absolutely necessary, reducing the probability of eutrophication and point-source pollution (as well as increasing the financial viability of the operation). Similarly, having few livestock and housing them only for limited periods, when absolutely necessary owing to severe weather, reduced the accumulation of slurry and manure.

Livestock were kept on in-bye through the winter (although they were housed when necessary) and then moved on to the Moss from April until December. They were allowed access to the in-bye again once hay-cutting had taken place, in late summer, which effectively meant that the animals could roam freely throughout the farm for much of the year.

Changes in vegetation 2011–21

The extent of certain priority habitats on the farm in 2011, 2016 and 2021 is shown in Table 1. Lowland meadow has increased markedly, predominantly in the in-bye south of the farmstead where past attempts at agricultural

improvement had rendered the sward species-poor and dominated by Perennial Rye-grass *Lolium perenne*. In the absence of fertiliser input, the grassland has largely reverted to MG5 or MG8 grassland in drier and wetter areas, respectively. In-bye grassland has the potential to become more species-rich over time; judicious use of green hay could assist this process and restore species characteristic of upland hay meadow in the Dales.

While the extent of blanket bog has remained constant, results indicate a move from Hare’s-tail Cottongrass *Eriophorum vaginatum*-dominated M20 vegetation towards a wetter, *Sphagnum*-rich M17 community with dwarf shrubs. This transition has occurred over 20ha of the blanket bog at Nethergill Farm, and represents a remarkable level of change in only ten years (recovery can be extremely slow in upland blanket bog). It is thought likely that grip (drain)-blocking by the Yorkshire Peat Partnership and use of low-intensity cattle grazing have together been instrumental in bringing about this change. Poaching of blanket bog by cattle limits the dominance of Hare’s-

tail Cottongrass and creates a microtopography of hoof-prints with small patches of bare ground and pools. This allows space for both dwarf shrubs and *Sphagnum* mosses to establish in a permanently wet, sheltered environment. It is thought that a degree of disturbance is key to maintaining degraded blanket bog until hydrology is sufficiently restored to support *Sphagnum* establishment and growth. It was noted, however, that Sitka Spruce *Picea sitchensis* is seeding onto the Moss from adjacent forestry and that the current stocking density is insufficient to prevent establishment; consequently, a programme of tree removal is necessary.

Species-rich rush-pasture has seen an increase in extent owing largely to the lower intensity of farming and reduced use of fertiliser and herbicide. This has allowed a number of forbs to spread, perhaps facilitated by flooding.

It was noted that selective grazing by cattle, together with associated poaching, has maintained diversity in springs and flushes. These habitats, of only limited extent, are vulnerable to under-grazing, but, even at low stocking density,

cattle given the freedom to roam will actively seek them for grazing, ensuring that floristic diversity is maintained. The open sward in alkaline springs and fens is also maintained largely through grazing and poaching of the ground, which benefits both vascular plants and bryophytes. Grazing controls the growth of larger, more competitive grass and rush species, such as Purple Moor-grass and Tufted Hair-grass *Deschampsia cespitosa*, which would otherwise outcompete species that are characteristic of this community, including small sedges *Carex*, Butterwort *Pinguicula vulgaris*, Bird’s-eye Primrose *Primula farinosa* and bryophytes. In addition, poaching of the ground creates a microtopography of pools and bare soil, allowing seed to germinate and grow, and promoting the propagation of bryophytes by vegetative means.

Overall, the increase in area of priority habitat and maintenance of other priority habitats in good condition is a very pleasing reflection of how biodiversity has benefited through ten years of low-input farming with free-roaming cattle. The current owners of Nethergill Farm continue to focus on low-input farming, and so further benefits are likely to accrue. In addition, the opportunity to diversify in-bye meadows with applications of green hay is being explored, along with habitat-creation measures to ameliorate impacts of high-intensity rainfall events on Oughtershaw Beck.

A copy of the full report is available on request.

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Anyone with information on the success or failure of any management technique is invited to contact John Day, Land Management Adviser, RSPB Conservation Management Advice, The Lodge, Sandy, Beds SG19 2DL; tel: 01767 680551; fax: 01767 683640; e-mail: conservation-advice@rspb.org.uk.

Cattle dung hosts coprophilous bryophytes such as *Splachnum ampullaceum*.

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