

Conservation Grazing in the Uplands

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Project Background

In 2011 the Institute of Technology, Tralee, in collaboration with the National Parks and Wildlife Service (NPWS), initiated a baseline study of the vegetation (vascular plants and bryophytes) and macro-invertebrates associated with different upland habitats within Mount Brandon Nature Reserve, in advance of the commencement of experimental grazing trials with Dexter cattle. The site has a history of heavy sheep grazing, which had been greatly reduced in recent years, and land managers are now seeking to establish an appropriate grazing regime which will maintain and enhance the conservation status of habitats on site and their associated biodiversity.

The research project involves investigating the range behaviour of the cattle using a combination of Global Positioning System (GPS) tracking and direct observation, thereby identifying their preferred grazing habitats. It also assesses the biodiversity response to the grazing by studying vegetation structure and composition, and ground-dwelling beetles over time. Certain classes of ground-dwelling arthropods have been shown to be sensitive to small-scale variation in vegetation structure and thus are useful indicators of changes in landscape features (Thomas, *et al.* 2006; Fritch *et al.* 2011).

Overall Aim

To identify appropriate grazing regimes for sensitive upland environments, with a view to optimising biodiversity and cattle productivity. More specifically:

To identify habitat preferences of free ranging cattle and investigate the factors affecting their grazing patterns in an upland mosaic site;

To evaluate the impact of said grazing on the conservation status of annex habitat types;

To make recommendations in relation to appropriate grazing regimes in sensitive upland sites.

Projected benefits of the research project

The data gathered and analysed here will inform management prescriptions for upland habitat, including commonage areas and Nature Conservation sites (Nature Reserves, SACs, NHAs) and assist with compliance regarding 'Favourable Conservation Status' under the Habitats Directive.

The study will provide recommendations for farming in HNV areas and on Agri-Environment Schemes. This will include recommended stocking regimes for beef production on sensitive upland sites and the early identification of any potential negative impacts *vis a vis* the loss of priority habitat cover.

Identification of appropriate indicators suitable for measuring changes in the condition and quality of upland HNV farmland through biodiversity and/or ecological change in response to low-impact grazing of cattle. This will be of importance in measuring the success of targeted AES measures.

This study will provide evidence linking native genetic resources with Ecosystem services for upland and other characteristic vegetation systems.

The study will highlight the benefits of low productivity agricultural systems in marginal areas, thus promoting the sustainability of rural economies and communities.

This work exploits the dependency of semi-natural habitats on traditional farming methods and provides an opportunity for a positive 'point of engagement' between farmers and conservationists.