Chapter (non-refereed)

Marrs, R. H.. 1987 Long-term studies of vegetation change at Moor House NNR: research note. In: Bell, M.; Bunce, R. G. H., (eds.) *Agriculture and conservation in the hills and uplands.* Grange-over-Sands, NERC/ITE, 139. (ITE Symposium, 23).

Long-term studies of vegetation change at Moor House NNR: research note

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Moor House National Nature Reserve was bought by the Nature Conservancy in 1952 specifically as a centre for scientific research on the ecology of upland communities. The quality of research done at Moor House by the Nature Conservancy staff in the 1950s and early 1960s was recognized by the designation of Moor House as one of the main British sites in the International Biological Programme (IBP - Tundra Biome study). A major part of the research emphasis during this early period was the setting up of long-term experiments on a range of upland vegetation types; these experiments were designed to detect:

i. long-term changes in species composition, structure and function;

ii. long-term effects of management by man, especially the effects of burning and sheep grazing.

These experiments, and some new ones set up more recently for the same purpose, were monitored at varying levels of intensity until 1982, when the Moor House Research Station was closed. At this point, the Institute of Terrestrial Ecology took over the responsibility for monitoring these long-term experiments, and for subsequent data analysis.

There are, however, 3 major problems with long-term experiments of this kind. First, their duration (at present 15–32 years) means that changes in observers are bound to occur. Second, with the demise of the station facilities at Moor House, it was thought unlikely that detailed intensive studies could be carried out in the longer term, because of financial constraints, and, third, the data were available only on field data sheets and were difficult and costly to analyse. Since 1982, we have tried to overcome these problems by:

i. setting the range of 10 available experiments into a 10-year rotational sampling programme, and monitoring one experiment per year. This approach allows information to be collected at minimum expense.

ii. producing a detailed methods handbook (Marrs *et al.* 1986), which involved the collaboration of both the 'old' and 'new' observers. Moreover, the first draft of the methods handbook was produced from the available information within the experimental notes, and then 'debugged' in the field, to make sure that a new observer in the future would be unlikely to make mistakes.

iii. transferring all the accumulated data to computer storage on the Natural Environment Research Council's VAX computer at Keyworth. It is hoped to start analysing some of the recent trends shortly.

Reference

Marrs, R.H., Rawes, M., Robinson, J.S. & Poppit, S.D. 1986. *Long-term studies of vegetation change at Moor House NNR: guide to recording methods and database.* (Merlewood research and development paper no. 109.) Grange-over-Sands: Institute of Terrestrial Ecology.