Re-introducing natural grazing: Natural England evidence

This note provides details of Natural England and pre-Natural England reports on naturalistic grazing. It was developed as a result of a request by European Wildlife who were preparing a feasibility study for a project to introduce natural grazing management methods across a range of habitats in the Czech Republic. In particular, to graze Exmoor ponies, cattle and European bison on old military sites. The information about this evidence is now being made more widely available because a number of English land managers have found it useful.

Background

The aim of the Czech study being undertaken by European Wildlife was to provide information on various aspects of natural history and to clarify certain myths and misunderstandings concerning the past distribution, and habitat preferences, of grazing animals.

European Wildlife asked for information about documents on the influence of horse (in particular Exmoor ponies) and cattle on both forest and non-forest vegetation (preferably under conservation schemes) and any comparative studies of Exmoor ponies (or horses in general) versus sheep, goats and mechanical mowing.

They also requested information about studies on the responses of various animal taxa (insects, herpetofauna, mammals and birds) to the presence and grazing of mega-herbivores, including those showing:

- the response of different taxa on vegetation/microhabitat changes resulting from grazing;
- mutual relationships eg dung-associated fauna, mega-herbivore and bird relationships.

Konig Ponies by Allan Drewitt

They also asked for photographs showing the development of various vegetation types before and after the introduction of grazing.

Results

Reports

The information available from Natural England is listed in Appendices 1 and 2 below. Where the information is online the link has been provided. Where there is no link the documents either need to be uploaded or scanned and this may take some time.

Photos

The **Natural England Online Photograph Collection** has various categories that could be relevant, for example **Farming**

and **Heath and Moorland**.

We have limited ability to centrally search for the photographs requested. Grazing ceased on Scar Close in the mid 1970s and to monitor the effects of lack of grazing, a photo record was kept by taking comparative photos at fixed points in 1989 and again in 1997. This information would need to be scanned to make it accessible.

Other contacts and information

The request also asked Natural England to suggest other contacts. See Appendix 3 for a list of some relevant documents that were identified by a search of Natural England's Library Service. See also:

- **Scottish Natural Heritage** including **Fen management handbook**
- The Rare Breeds Survival Trust who now administer the **Grazing Animals Project** including the **Breeds Profile Handbook** and **Animal Welfare publications**
- **The Suffolk Wildlife Trust** specifically because they have been using Konig ponies at Redgrave & Lopham Fen
- The National Trust

British Wildlife magazine:

- **Naturalistic Grazing and Re-wilding in Britain**
- **Perspectives from the Past and Future Directions**
- **British Wildlife publishing cumulative index** including, Exmoor ponies – Britain's prehistoric wild horses? *British Wildlife*, 9:304-13

Further information

For queries or further information please contact David Askew, Manager, Access to Evidence, **david.askew@naturalengland.org.uk** or Susie Smith, Senior Adviser **susie.j.smith@naturalengland.org.uk .**

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Appendix 1 – Grazing-related studies and publications on Natural England's Publication and products catalogue

These are a range of recent and older documents:

The impact of moorland grazing and stocking rates (NEER006)

Avon Valley Grazing Project (NECR078)

Ashdown Forest Grazing Action Plan (ENRR602)

Trends in Pastoral Commoning (NECR001)

Upland Hay Meadows: What management regimes maintain the diversity of meadow flora and populations of breeding birds? (NEER005)

An analysis of survey data from upland hay meadows in the North Pennines AONB (NECR069)

Economic valuation of uplands ecosystem services (NECR029)

Upper Teesdale: changes in upland hay meadow vegetation over the past twenty to thirty years - results presented from botanical surveys (NECR139)

Long term effectiveness of Environmental Stewardship in conserving upland hay meadows in the Pennine Dales (NECR138)

The condition of lowland heathland: results from a sample survey of non-statutory stands in England (NERR002)

Grazing your landscape (NE55)

The effects of horse and cattle grazing on English species-rich grasslands (ENRR210)

Large herbivores in the wildwood and in modern naturalistic grazing systems (ENRR648)

The effects of horse grazing on species-rich grasslands (ENRR164)

Impacts of livestock grazing on lowland heathland (ENRR422)

Towards sustainable grazing for biodiversity: an analysis of conservation grazing projects and their constraints (ENRR316)

Ashdown Forest: a review of grazing (ENRR535)

The importance of livestock grazing for wildlife conservation (IN170)

Grazing management of lowland heathlands (IN172)

Lowland Grassland Management Handbook (Second edition) (GRASSLAND)

Literature review of the historical effects of burning and grazing of blanket bog and upland wet heath (ENRR172)

Horses, grasslands and nature conservation England (IN52)

Sustainable grazing in the English uplands (IN150)

The upland management handbook (SC26)

Examples of current grazing management of lowland heathlands and implications for future policy (ENRR271)

The effects of a mixed grazing regime on sand dune vegetation communities at Braunton Burrows, Devon (ENRR637)

European Heathlands Network Conference papers

The lowland heathland management handbook

Grazing Heathland: a guide to impact assessment for insects and reptiles (ENRR497)

Grazing marsh assemblages and site classification using invertebrates (ENRR579)

Review of the impact of extensive livestock farming systems on nature conservation and the environment: Phase 1 (ENRR068)

Review of the impact of extensive livestock farming systems on nature conservation and the environment: Phase 2 (ENRR069)

Reintroducing stock grazing to Savernake Forest: a feasibility study (ENRR224)

Sustainable grazing practices on the South West moors of England (ENRR253)

What might a British forest-landscape driven by large herbivores look like? (ENRR530)

Appendix 2 – Other unpublished documents

These documents could be made available if requested, but this may take some time as they are only available as hardcopy and would have to be acquired from the local office and digitised.

Comparison of terrestrial invertebrates in cut areas and areas grazed by Water buffalo on Chippenham Fen NNR

Fieldwork was undertaken at Chippenham Fen during July and August 2007 to investigate whether to accept or reject the hypothesis: *grazing of water buffalo will have an effect on the vegetation structure and vegetation composition within grazed areas of Chippenham Fen*. Several different areas were chosen, each consisting of one or more NVC community types identified by Smith & Harding (2001). Results state that grazing of water buffalo has affected both the vegetation structure and vegetation composition.

Chippenham Fen NNR - A study of the effects of grazing of water buffalo (*Bubalus bubalis*) on vegetation dynamics of Chippenham Fen

Chippenham Fen is one of the best remaining areas of semi-natural, undrained fen in Europe. In July 2001, buffalo grazing was introduced to the central area of the fen as a trial. The 7 buffalo were on site all year round. The aim of this 2007 survey was to monitor the effect of grazing on the invertebrate value by comparing and contrasting the invertebrate assemblages of cut and grazed fenland with a baseline survey of 2005 (Lott 2006). (**This report has already been digitised**).

Finglandrigg Woods NNR: A vegetation survey of the marsh fritillary field

Marsh fritillary butterflies *Eurodrynas aurinia* were present in a field within the Finglandrigg Woods NNR until 1992. The cause of the loss of this colony is not known though it may be the result of changes in vegetation composition. Attempts have been made to improve the habitat at Finglandrigg by a variety of grazing regimes, most recently by grazing Exmoor ponies and Hebridean sheep. This project was aimed at determining the effect of this management on the structure and composition of the vegetation and on its suitability as potential habitat for marsh fritillary.

West Bog botanical monitoring, Hartland Moor NNR, Dorset

Botanical monitoring was established at West Bog, Hartland Moor NNR, Dorset, in 1995, prior to the re-introduction of extensive grazing by hardy ponies and cattle. Thirty 1x1 metre stratified random quadrats were recorded within a monitoring plot established within mire vegetation every three years since then. This project recorded the 30 quadrats in 2013 and analysed the data. The results are being used to inform the management of Hartland Moor NNR and they will also be of relevance to other heathland and mire sites where extensive grazing is being carried out for conservation purposes.

Stiperstones NNR - From onerous responsibility to exciting opportunity: a feasibility study of the potential for commercially viable grazing of re-created heathland on The Stiperstones, South Shropshire

The aim of this 2006 study was to consider the grazing regime needed to develop the conservation value of one existing heathland and three heathland restoration sites (following clearance of conifer plantations) on The Stiperstones, and to evaluate the economic viability of that grazing regime.

Ingleborough NNR - Exclosures on Park Fell, South House Moor and Scar Close Fell, Vegetation Monitoring

This report was conducted in 1990 when 12 x 12 foot exclosures were constructed on Park Fell, South House Moor and Scar Close Moss. These permanent exclosures were set up to assess the

effects of grazing, with the plan to repeat in future years (1990). There is a folder with original photographs and data as well as the main report.

A comparison of the field vole (*Microtus agrestis*) and common shrew (*Sorex araneus*) abundance on grazed and wilded heather moorland on Ingleborough National Nautre Reserve

Much of the world's resource of heather moorland occurs in the UK and whilst many studies on the fauna and flora of this habitat have been done, little research has been carried out on how small mammals contribute. Natural wilding of former heathland by the exclusion of grazing on Ingleborough NNR, provided an opportunity to study the effects this has on small animal communities. The findings show that vegetation structure is an important factor in the abundance of small mammals in heathland, but also that the species of bryophytes in which runways and nests can be constructed may also be an influence.

Goss Moor NNR: The grazing behaviour of rare breed cattle

An ongoing study into the grazing behaviours of 3 different types of cattle: British Whites, Belted Galloways and North Devons across a large extensively grazed wetland. Goss Moor comprises of a large single grazing unit of 500 ha made up of dry lowland heath, wet heath, fen and willow carr. Across this terrain very little is known about the grazing pressures exerted by the herd of cattle. In 2012 several animals were fitted with GPS tracking collars to ascertain both their movements and grazing habits. The work is ongoing and it may take a while to produce a report.

Appendix 3 – Non-Natural England documents

These are additional documents identified by our Library Service that might be useful to you. We are unable to provide copies, but Scottish Natural Heritage Commissioned Reports can be downloaded from – **Publications, data and research**.

PUTNAM, R.J. 1986. Large herbivores and the ecology of the New Forest. Portland, Oregon: Timber Press.

GLYN, P J. . London University 1975. Effects of pony grazing on Whiteford National Nature Reserve.. (NCC CST Report; 115)

HARDING, P. . Institute of Terrestrial Ecology (ITE). ROSE, F. King's College London 1978. Pasture woodlands in lowland Britain and their importance for the conservation of the epiphytes and invertebrates associated with old trees.. - (NCC CST Report; 211)

KEILLER, S W. . Countryside Council for Wales (CCW). Science Branch. BUSE, A. CHERRETT, J M. Institute of Terrestrial Ecology (ITE) 1995. Effects of sheep grazing on upland arthropods in Snowdonia and Mid-Wales: final report (no. 6).. - (CCW Contract Science; 120)

MILNE, J A. . Scottish Natural Heritage (SNH). Macaulay Land Use Research Institute. and others 1998. The impact of vertebrate herbivores on the natural heritage of the Scottish uplands - a review. (SNH Review; 95)

OATES, M. . National Trust. Nature Conservation Section 1994. A review of the role of horses and ponies in habitat management for nature conservation: a practical guide.

NELSON, K. . Manchester University 1996. The problem of undergrazing on Rodborough Common: an investigation in cattle grazing preferences.

VERA, F W M. 2000. Grazing ecology and forest history.. - Wallingford: CABI Publishing . - 0851994423

CRICK, M. . Nature Conservancy Council (NCC). England. South Region 1989. Hook Meadow and the Trap Grounds SSSI: poaching and over grazing by horses.

FRESHNEY, F. . Dartmoor National Park Authority 2001. The Dartmoor pony: grazing behaviour and potential use within conservation grazing schemes.. - Newton Abbott: Dartmoor National Park Authority

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English Nature (EN). . ADAS Consulting 2005. The economics of extensive livestock grazing post CAP reform: analysis of ADAS farmers' voice 2004 survey.. - Wolverhampton: ADAS

DAYTON, N. . Scottish Natural Heritage (SNH) 2006. An assessment and evaluation of herbivore impacts on blanket bog habitat in the Monadhliath Special Area of Conservation.. - Edinburgh: SNH. - (SNH Commissioned Report; 165)

POLLOCK, M. . Scottish Natural Heritage (SNH) 2005. The integration of sheep husbandry systems and native woodland: impact on plant-herbivore dynamics and impact on bird communities.. - Edinburgh: SNH. -

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(SNH Commissioned Report; 159)

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STEWART, G B. . Birmingham University. Centre for Evidence-Based Conservation (CEBC). PULLIN, A S 2006. Does sheep-grazing degrade unimproved neutral grasslands managed as pasture in lowland Britain? [electronic resource].. - Birmingham: Birmingham University. CEBC. -
(CEBC Systematic Review; 15)

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WRIGHT, I A. . Scottish Natural Heritage (SNH). Macaulay Research and Consultancy Services 2006. The effects of cattle on the natural heritage of Scotland.. - Edinburgh: SNH. -
(SNH Commissioned Report; 203)

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HEADLEY, A. . Scottish Natural Heritage (SNH) 2007. An assessment and evaluation of herbivore impacts on alpine heaths and grasslands within the Ben More-Stob Binnein Site of Special Scientific Interest.. - Inverness: Scottish Natural Heritage. -
(SNH Commissioned Report; 233)

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DAYTON, N. . Scottish Natural Heritage (SNH) 2008. An assessment and evaluation of herbivore impacts on designated upland habitats within the Drumochter Hills Special Area of Conservation.. - Inverness: Scottish Natural Heritage. -
(SNH Commissioned Report; 261)

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PAKEMAN. . MACAULEY INSTITUTE. Scottish Natural Heritage (SNH) 2009. Are patterns of herbivore impacts on blanket bog habitats predictable? An analysis of impact data from recent surveys.. - Inverness: Scottish Natural Heritage. -
(SNH Commissioned Report; 335)

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HORSFIELD, D. . Scottish Natural Heritage (SNH) 2009. Assessments of grazing and trampling impacts on upland habitats in the Cairngorms Core Area 1995-2000.. - Inverness: Scottish Natural Heritage. -
(SNH Commissioned Report; 322)

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BECK. . Scottish Natural Heritage (SNH) 2009. Stack Woods Site of Special Scientific Interest: assessment of herbivore impacts and woodland profile survey.. - Inverness: Scottish Natural Heritage. -
(SNH Commissioned Report; 331)

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BECK. . Scottish Natural Heritage (SNH) 2009. Ardvar Woodlands: assessment of current herbivore impacts and woodland profile survey.. - Inverness: Scottish Natural Heritage. -
(SNH Commissioned Report; 330)

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BECK. . Scottish Natural Heritage (SNH) 2009. Ben Loyal Site of Special Scientific Interest: assessment of herbivore impacts and woodland profile survey.. - Inverness: Scottish Natural Heritage. -
(SNH Commissioned Report; 333)

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(SNH Commissioned Report; 332)

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DAYTON, N. . Scottish Natural Heritage (SNH) 2011. An assessment and evaluation of herbivore impacts on designated habitats at Ben Loyal Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC).. - Inverness: Scottish Natural Heritage. -
(SNH Commissioned Report; 425)

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DAYTON, N. . O'HANRAHAN, B. Quadrat Scotland. Scottish Natural Heritage (SNH) 2011. An assessment and evaluation of herbivore impacts on designated habitats on Foinaven Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC).. - Inverness: Scottish Natural Heritage. -
(SNH Commissioned Report; 451)

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CAMPBELL, D. . MARCHBANK. Strath Caulaidh Ltd. Scottish Natural Heritage (SNH) 2013. Herbivore impact assessment of the Torridon Forest SSSI.. - Inverness: Scottish Natural Heritage. -
(SNH Commissioned Report; 575)

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