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Knepp Castle Estate baseline ecological survey

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Introduction

Knepp Castle estate covers an area of 1 416 hectares, in the Low Weald Natural Area, south of Horsham, West Sussex. It originated as a royal hunting park in the Middle Ages. The owner, Charlie Burrell, wishes to recreate the landscape designed by Humphrey Repton, but as plans developed, he took on a more ambitious scheme to create a landscape-scale park in which a variety of large herbivores would roam freely, currently covering about 322 hectares.

This comes at a time when Vera's ideas on grazing and forest history (Vera 2000) are being widely discussed, raising much interest, and discussion on the practicalities and constraints of modern landscape uses. Hodder and Bullock (2005) provide a useful discussion of the difference between "near natural" grazing and "conservation" grazing, and the system set up at Knepp falls somewhere between the two.

The aim is to record and evaluate changes in biodiversity and vegetation structure following the reversion of land under intensive arable management to a more natural grazing regime.

What was done

In 2001, 202 hectares were taken out of arable and commercial grassland and planted with a native seed mix. 28 hectares were planted with a wild flower seed mix.

In 2002, Fallow deer were introduced, followed by long horn cattle and Exmoor ponies in 2003. In 2005, 2 Tamworth sows and 8 piglets were introduced. In 2005, the density of animals was estimated to be 550, comprising 500 deer, 6-10 ponies, 16 cattle with 13 calves and 10 sows.

This project records the results of the baseline ecological recordings, develops a monitoring strategy, identifies the areas of research and gives the results of the phase 1 study.

The following surveys have been undertaken:

Extended Phase I habitat	Diptera
Belt transects	Wetland beetles
Aquatic vascular plants	Grassland beetles
Lichens	Hymenoptera
Soils & vegetation analysis*	Ants
Pond condition survey	Amphibians
NVC Floodplain	Reptiles
Fixed point photography	Breeding birds
Wetland Mollusca	Barn owls
Spiders*	Bats
Collembola	Water voles & otters
Odonata	Dormouse
Lepidoptera – moths	Small mammals
Lepidoptera - butterflies	Pigs & patch dynamics*

*These survey reports have not yet been received and are not included in this report

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Results and conclusions

This report covers a great deal of survey work which gives a snapshot assessment of the Estate near to the beginning of the grazing regime.. The results are available in the report. Over 900 species have been recorded in the 2005 field survey, including 71 species of conservation interest.

The habitat survey showed that 60% of the project area is grassland, 21% woodland or wood pasture, and just 1.1 % is covered by scrub. This latter area is expected to increase.

There are no conclusions to be drawn from the research carried out at this stage because it is a baseline survey, but it is hoped that research will continue at Knepp and this data can later be used in comparison.

English Nature's viewpoint

English Nature is interested in the concept of naturalistic grazing, and has produced a discussion document about it (Kirby 2003) as well as looking at modern naturalistic grazing systems (Hodder and others, 2005). The next logical step is to see how it works in practise.

English Nature fully support the Knepp project, and eagerly await results of forthcoming research into the future as the project develops. The naturalistic approach to grazing must be based on sound ecological and animal management principles, as the Knepp project is. The steering group to take the project forward involves a large number of participants from different organisations, which highlights the interest in the approach. English Nature anticipates that unforeseen issues that may arise will be embraced by the steering group.

Selected references

HODDER, K.H., and others. 2005. Large herbivores in the wildwood and modern naturalistic grazing systems. *English Nature Research Reports*, No. 648.

KIRBY, K.J. 2003. What might a British forest-landscape driven by large herbivores look like? *English Nature Research Reports*, No. 530.

VERA, F.W.M. 2000. *Grazing ecology and forest history*. CABI Publishing.

WHITBREAD, A. & JENMAN, W. 1995. A natural method of conserving biodiversity in Britain. *British Wildlife*, 6, 2, 84-93.

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