

Knepp Wildland Project

Annual biodiversity report and monitoring update 2008

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1. Introduction

Ecological monitoring continued in 2008 in accordance with the Monitoring Strategy (T Greenaway, 2007). It included selected surveys repeating the methodologies initiated in 2005 together with an additional baseline survey of the H30 SNCI Horsham Common complex. Those groups most likely to fluctuate in terms of diversity or size from year to year, such as breeding birds, are surveyed annually to allow a far better analysis of the effects of grazing and other environmental factors. Other groups or habitats likely to show slower rates of change will be surveyed at less frequent intervals. The 2008 fieldwork was funded by the Knepp Castle Estate.

2. Field work.

Table 1 shows fieldwork commissioned and carried out in 2008. In addition, there were a number of surveys carried out by other individuals, either as part of independent projects or as casual observations made by visitors to the Estate. These species records have been entered on an Excel Spreadsheet (Appendix 1).

Table 1. Commissioned surveys, 2008.

Survey	Time (2007)	Surveyor	Cost
Horsham Common SNCI Survey + target notes	April & May	Dolphin Ecological Surveys	£1,500
Horsham Common stratified random quadrats.	April & May	Dolphin Ecological Surveys	£1,200
Breeding bird survey	March-June	Paul James	£2,250
Butterfly transect & fixed-point photography	July	Rich Howorth	£400
Project management		Theresa Greenaway	£900
Digitising maps		SxBRC	£100
Total			£6,350

3. Summary of individual survey reports

The full report of each survey, together with maps, other graphics and raw data, is included on the CD **Knepp Wildland Project: Annual biodiversity report and monitoring update 2008**. The additional records (Appendix I) are also on this CD.

3.1. Botanical Survey of Horsham Common SNCI

A botanical survey of the Horsham Common SNCI (H30) was carried out by Kate Ryland of Dolphin Ecological Surveys during late April and early May 2008. The purposes of the survey were to obtain an overview of the vegetation of the SNCI complex, to identify those areas of greatest botanical interest within the site and to collect baseline information about the composition of most botanically diverse areas.

An initial walkover enabled an assessment of the site recording vascular plant species in each of the six separate woodland sections of the SNCI, enabling the identification of the areas of greatest botanical interest. These were essentially areas of ancient semi-natural woodland ground flora, rich in Ancient Woodland Indicator species (AWIs). The second part of the survey was to record a set of random stratified quadrats in the areas of chief botanical interest. Although no rare vascular plant species were recorded, this complex of woodlands was confirmed as having a number of Ancient Woodland Indicator species.

This survey is intended as a baseline prior to the release of Tamworth pigs into the Pondtail area of the Wildland Project. Cattle are already present. It is intended to repeat the random stratified quadrat survey at set intervals, monitoring over time the effect of pigs and cattle on the ground flora of the SNCI.

3.2. Breeding bird survey 2008.

This survey repeated that of 2005 and 2007, although a greater length of time was possible in 2008. The purpose of this survey is to monitor changes in breeding birds over time as the estate moves away from intensive arable land use to a more natural grazing system. The survey was undertaken by Paul James who also carried out the surveys in 2005 and 2007.

Two transects were surveyed from late March – late June, one in the area north of the A272 and east of Shipley Road (area A) and another in the area south of Countryman Lane and west of New Barn Farm (area B). A total of ten visits was made to each transect in the period. The surveys were conducted and the results mapped using the standard Common Birds Census species and activity codes, and digitised by Sussex Biodiversity Record Centre.

The results of the survey indicate that the estate supports a rich breeding bird community, including a significant number of species of both medium and high conservation concern. Of the 57 species recorded during the survey, ten were Red List Species of High Conservation Concern and 15 Amber List Species of Medium Conservation Concern. Perhaps the most interesting was the discovery of two singing male woodlarks in area B.

The 2008 results compare favourably with those of 2005 and 2007, but this is partially due to the greater number of transect visits in 2008, ten visits per transect in 2008 compared to two in 2005 and three in 2007. This could account for the apparent increases in some of the more common species such as robin, wren and chaffinch in some of the more unobtrusive species such as dunnoek and bullfinch. However, increases in species such as skylark may be due to changes in habitat rather than greater recording effort.

3.3. Butterfly survey.

This is the third year that butterflies have been surveyed by Rich Howorth (West Weald Landscape Project Officer, Sussex Wildlife Trust) along a transect set up in 2005. Although this transect is surveyed following Butterfly

Conservation Society methodology, this methodology does recommend walking such transects once a week for 26 weeks from spring to autumn. Resources of time and money have limited this annual survey to just one day in July.

Despite fairly poor weather in July 2008, 937 individuals of 12 species were recorded. By far the most abundant species was the meadow brown (619 individuals), followed by the gatekeeper (138 individuals). Species of interest included the small skipper (38 individuals) and silver washed fritillary (19 individuals). One marbled white was recorded for the first time in this annual series of surveys, and the widespread patches of thistle provided a nectaring resource for an increased number (17) of peacock butterflies.

Although there are indications that the changes taking place as a result of rewilding the Estate are encouraging species of conservation interest, the extremely limited nature of this survey is restricting the degree to which changes can be analysed. It is hoped that this survey can be extended in future.

3.4. Fixed-point photography of the Knepp Estate 2005-2007.

Fixed-point photographs have been carried out by Rich Howorth in conjunction with the butterfly survey in 2005, 2007 and 2008. The aim is to enable a visual comparison and detection of changes in vegetation structure over time. The points selected represent geographical range, habitat diversity and past management regimes within the Wildland project area.

The value of this methodology will increase over time, but already there is clear visual evidence that structurally uniform grassland is developing into a more diverse sward with a more tussocky structure. Ruderal weeds are increasing, especially in areas of arable reversion, and there also seems to be a correlation with pig foraging. Changes in woodland and wood-edge structure are variable, scrub has increased in some places and decreased in others.

4. Incidental species reports.

A number of other surveys have taken place during 2008, either as part of wider projects, for example the BTO Breeding Bird Survey¹, or as an isolated recording event such as the moth survey of 9th August. The BTO Breeding Bird Survey is taking place annually over a number of 100m grid squares, one of which (TQ1520) lies within the Wildland Project area. A transect across this square has been recorded by a volunteer in 2007 and 2008, and the Sussex Branch of the BTO has kindly forwarded the results. Barrie Watson annually records barn owl breeding in nest boxes positioned in barns and trees across the Estate, and rings the chicks. His results for 2008 are summarised in Appendix I. A small group of moth recorders braved a very windy evening in August to record moths in The Rookery. In June, as part of a survey commissioned by Sussex Wildlife Trust (F. Greenaway, 2008), a radio-tagged female barbastelle bat was tracked from its nursery roost site in The Mens SAC

¹ <http://www.bto.org/bbs/>

to its foraging area over tributaries of the River Adur in the southwest of the Wildland Project. On a less happy note, David Buckingham observed that the numbers of house martins continues to decline, from 32 birds in 1994 to just 11 in 2008.

5. Discussion.

This is the fourth year of monitoring the changes taking place across Knepp Castle Estate as the Wildland Project gets underway. It is far too soon to evaluate these changes but already there are promising indications of increasing biodiversity. To realise their full potential, surveillance and monitoring are long-term processes that require considerable financial commitment. The monitoring programme in place would undoubtedly be improved if it could be expanded, and efforts to attract increased funding are ongoing.

There have been changes in the vegetation that have caused some concern among neighbouring landowners, notably the increasing abundance of ragwort and creeping thistle, both classified as injurious weeds under the Weeds Act 1959. These two species are colonists of disturbed land and their increase is to be expected following arable reversion. Both should decrease as sward and scrub develop, but to allay the fears of neighbours and to comply with the Weeds Act and the Defra Code of Ragwort Control, a Weeds Policy for Knepp is being finalised (November 2008). There is also a chance that the ponies and cattle in Knepp might also ingest harmful quantities of ragwort. This is thought unlikely as the animals are at low stocking intensity, but vigilance is called for and the presence of ragwort is likely to be monitored in future. However, as native plants, ragwort and thistle also have considerable benefits to wildlife, including many invertebrates including the peacock butterflies noted feeding on thistle flowers in the butterfly survey.

A further most important development is the fencing of an additional 1,000 acres (405ha) of land in the southwest of the Estate. Fencing work is due to be completed early in 2009, after which longhorn cattle, fallow deer, Exmoor ponies and Tamworth pigs will be introduced. The 2009 monitoring programme will be extended to increase the existing monitoring on this area.

References.

Greenaway, F. (2008) *Barbastelle bats in the Sussex West Weald 1997 – 2008* Unpublished report for Sussex Wildlife Trust.

Greenaway, T. (2007) *Monitoring Strategy for Knepp Castle Estate Wildland Project*. Unpublished report, Sussex Biodiversity Record Centre Survey Unit.

Appendix I.

Incidental species records – See Excel Spreadsheet in Folder.