Knepp Wildland Project

Annual biodiversity report and monitoring update 2011

River Adur restoration C. Burrell

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1. Introduction

Ecological monitoring continued in 2011 in accordance with the Monitoring Strategy (Greenaway, 2007). This comprised the annual repeats of the breeding bird, butterfly and fixed-point photography surveys. Ragwort levels were also monitored for the third year running. The long-awaited re-naturalisation of the Knepp stretch of the River Adur finally commenced in September 2011. This is causing considerable disruption in the short term, but once completed, will benefit wildlife and enhance the landscape. The ecological information has, as always, been augmented in 2011 by both voluntary surveys and casual observations.

2. Fieldwork.

Table 1 shows all commissioned monitoring carried out in 2011. Any other ecological work carried out during 2011 has been voluntary, and on behalf of the Knepp Wildland project I would like to thank all those who have generously contributed time and expertise.

Table 1. Cost of commissioned survey & monitoring 2011.

Monitoring programme & costs 2011	**Cost**
Butterfly survey & FP photography	£400.00
Breeding bird survey	£2,250.00
Ragwort survey	£3,000.00
Digitising maps & other peripherals + VAT	£235.00
Project management & reports	£1,000.00
Total	**£6,885**

3. Summary of surveys

The full reports of commissioned surveys (Butterfly survey & Fixed-point photography, Breeding Bird Survey and Ragwort Monitoring Report) are obtainable from Knepp Castle Estate, with summaries only presented in this report. Raw data is either held by KCE, T. Greenaway or the surveyor.

3.1. Fauna

3.1.1. Breeding bird survey

This survey repeated that of 2005, 2007, 2008, 2009 and 2010. 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 (James, 2011), who also carried out the previous years' surveys.

Two transects were surveyed from late March – 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). Ten visits were made to each transect. The surveys were conducted and the results

mapped using the standard Common Birds Census species and activity codes, and digitised by Andrew Lawson (Sussex Biodiversity Record Centre).

The total number of species recorded in 2011 was 56, slightly down compared with the 60 species recorded in 2010 and 61 species in 2009. Only one 'new' species (snipe) was recorded during this survey, bringing the total since 2005 to 78. Of the 56 species recorded in the 2011 survey, ten were Red List Species of High Conservation Concern and 12 Amber List Species of Medium Conservation Concern. The 2011 survey indicates more or less unchanged numbers of summer visitors such as blackcap, chiffchaff and whitethroat. The most significant decline was that shown by skylark along transect B (down from 11 territories in 2009 to four in 2011). This is most likely attributable to the invasion of many of the fields by brambles so reducing the availability of coarse grass for nesting. The growth of brambles has however benefited whitethroat (up from seven territories in 2008 to 16 in 2011). James did not record woodlark in 2011, although they were seen elsewhere on the Estate in March (S.4).

As in previous years, there were a number of records of more notable species. Those that bred or probably bred on the estate in 2011 included hobby, turtle dove, cuckoo, barn owl, nightingale and raven. The presence of two turtle dove territories along transect B, for the fifth year in succession, is especially welcome given the calamitous decline that has occurred nationally. Although James observed a displaying lapwing over a field south of Hampshire's farm in April, he thought that successful breeding was unlikely due to the dry spring. Happily this was not the case, as three lapwing chicks successfully fledged from Lucas Field, which is not on the route of either transect.

3.1.2. BTO Breeding Bird Survey (TQ1520)

The BTO Breeding Bird Survey[1] takes 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, 2008, 2009, 2010 and 2011. The Sussex Branch of the BTO kindly forwards the results. Five years surveillance is too short to identify significant trends, but 2011 saw the first records of turtle dove, nightingale and garden warbler in this grid square, although all these species have been recorded in the annual Breeding Bird surveys carried out by Paul James elsewhere on the Estate. Skylarks also appear to be decreasing in the BTO grid square, reflecting the results in the Breeding Bird survey (S.3.3.1.). The eventual results of the BTO survey will be an interesting assessment of population trends across the UK, and will enable the Knepp results to be evaluated accordingly.

3.1.3. Barn owl survey

Barrie Watson annually records barn owl breeding in nest boxes positioned in barns and trees across the Estate and rings the chicks. This year, 15 barn owl chicks were ringed, rated by Watson as a 'good average' for the Estate. The total number ringed since 1996 is now 118. For the first time, hornets were found in two of the barn owl boxes.

3.1.4. Butterfly survey.

This is the sixth year that butterflies have been surveyed by Rich Howorth (West Weald Landscape Project Officer, Sussex Wildlife Trust) along a transect set up in 2005 (Howorth, 2011). 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.

[1] http://www.bto.org/bbs/

The survey took place on July 19th this year. Although starting fine, the weather deteriorated with and rain and cloud by mid-afternoon. This had a negative effect on numbers, 824 individuals were recorded, the second lowest since 2005. Eighteen species were recorded, the joint highest with the 2006 survey. The transect sections consistently supporting butterfly numbers and diversity are those with the most heterogenous habitat – grassland and woodland. In particular, Parcel 7, a long strip of rough grassland along the stream to the southwest of Horsham Common, had the highest recorded density, with twice as many butterflies as the next most dense, due to the combination of flowering bramble scrub, long rough grass and proximity to woodland and a watercourse.

Meadow browns were again the most abundant species in 2011, with 494 individuals recorded (60% of the total) followed by gatekeepers, with 180 records (18% of the total). Two brown argus and the only marbled white seen this year were recorded in the lightly-grazed Cricketer's Field, beside the A272, the structural diversity of this transect section also contributing to butterfly diversity. Silver-washed fritillary and common blue numbers were down, but the poor afternoon weather was thought to be a contributing factor.

3.2. Flora

3.2.1. Ragwort Monitoring

This was the third year that ragwort has been monitored. Patrick Toe carried out a visual assessment plus photographs of the 16 fields he first surveyed in 2009 (Toe & Greenaway 2011). After a promising decrease in ragwort abundance in 2010, the resurgence in abundance in 2011 was disappointing. As a pioneer species able to colonise rapidly in favourable conditions, the fluctuating levels of ragwort across Knepp is likely to depend on variables in climate as well as on any changes in land use. Long-term trends will only become apparent over time.

3.3. Habitat & vegetation structure

3.3.1. Fixed-point photography of the Knepp Estate 2005-2011.

Fixed-point photography has been carried out by Rich Howorth in conjunction with the butterfly survey in 2005, 2007, 2008, 2009, 2010 and 2011 (Howorth 2011). This will enable an assessment of changes in vegetation structure over time. The points selected represent geographical range, habitat diversity and past management regimes within the Wildland Project area.

On the whole, changes from year to year are minimal and once again, the value of this survey will increase over time. Howorth makes three points regarding the 2011 survey - the much wetter July in 2011 resulted in a luxuriant growth of grass and flowering herbs; there was an increase in ragwort especially in the western floodplain and areas where pigs were most likely to be foraging; and there was some recovery from heavy deer damage in Matches Wood.

3.4. Deer population control

Following the extremely heavy browsing pressure on woodland undergrowth that was highlighted in the 2010 Annual Report (Greenaway, 2010) a fallow deer cull was carried out in March. In the Middle Block, where browsing was causing the most damage, 112 deer were shot. A further 76 deer were caught, with 23 of these (mostly does) being sold and 53 put into the Southern Block. This resulted in the reduction of deer numbers in the Middle Block by 188 animals (all ages and sex),

leaving an estimated 150-160 fallow deer. The intention is to keep the deer numbers in the Middle Block down, adjusting any future culls, sales or re-locations following the success rate of spring fawnings. As observed by Howorth in his annual fixed-point photography this year, Matches Wood undergrowth is already showing signs of recovery. Southern block, prior to the spring fawning this year, has an estimated 83 deer, including the 53 moved there from Middle Block.

4. Incidental species records.

Birds again feature predominantly in this year's incidental records. Ted Green has recorded a number of birds of conservation interest during 2011- lesser spotted woodpecker, little owl, skylarks, redwings, chiffchaffs and good numbers of yellowhammers in March, followed by 4 nightingales and 2 cuckoos in April and 2 juvenile ravens and a kingfisher in September. Charlie saw snipe in March. Also in March, the Shoreham District Ornithological Society enjoyed a visit to Knepp, seeing a number of birds including gadwall, great-crested grebe and tufted duck on Knepp Mill Pond, winter visitors redwings and fieldfares and many others, but the highlight of their day was seeing two woodlarks that stayed feeding while all had a good look through telescopes.

As mentioned in S.3.1.1., 2 pairs of lapwings hatched a total of 5 chicks in Lucas Field, with at least 3 of these confirmed as successfully fledging. A sandpiper, most likely to be common sandpiper, was also seen in September at the splash in Southern Block.

5. Discussion.

Since running the Knepp Monitoring programme I have frequently been asked whether there have been any exciting increases in desirable flora and fauna. This is of course what we are all hoping for, but although the Wildland project got underway in 2001, this is still a mere 10 years ago. Regular monitoring has only been in place for 6 years. These are very short periods of time in terms of the spread of species that may be slow to disperse and also dispersing from very low population levels in the surrounding countryside. Pioneer species of animals and plants can burgeon dramatically, able to increase their numbers by leaps and bounds to take advantage of any new resource that their usually general ecological requirements allow. Species that are rare, either because they have very specific ecological requirements – niche specialists – or because a once abundant population has become depleted because of habitat loss, use of pesticides etc., are often at a competitive disadvantage in comparison with pioneer plants and animals. So all things being equal, it is not surprising that there are no major changes to announce. But all things are not equal, as the weather conditions over the last year have so cogently demonstrated, and this can affect some of the small but steady improvements demonstrated by the monitoring programme.

Nevertheless, bird records in particular show overall that changes in the habitat are causing positive changes in the diversity and numbers of bird life. Perhaps the most conspicuous are the increases in sightings, and in some cases numbers, of species of conservation interest such as yellowhammers, turtle doves, cuckoos, lapwings, nightingales and woodlarks.

This was last year that Rich Howorth will be doing the Butterfly and Fixed-point photography, as he has a new job and is no longer West Weald Woodland Officer. I would like to thank him for all the surveys he has carried out on Knepp since 2005. Hopefully we will be able to find someone else to carry out these surveys in future and perhaps even increase the number of days the butterfly survey takes place. Commissioning future survey work in general is likely to present some difficulties as people commissioned to date become unavailable or move away.

References.

Greenaway, T. (2006) *Knepp Castle Estate: baseline ecological survey.* English Nature Research Report No. 693.

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

Greenaway, T. (2010) *Knepp Wildland Project - Annual biodiversity report and monitoring update 2010*. Unpublished report for Knepp Castle Estate.

Howorth, R. (2011) *Butterfly survey report Knepp 2011.* Unpublished report for Knepp Castle Estate.

Howorth, R. (2011) *Fixed point photography report Knepp 2011.* Unpublished report for Knepp Castle Estate.

James, P. (2011) *Knepp Castle Estate Bird Survey 2011.* Unpublished report for Knepp Castle Estate.

Toe, P. & Greenaway, T. (2011) *Ragwort monitoring 2011.* Unpublished report for Knepp Castle Estate.