

WICKEN FEN LMC (NATIONAL TRUST)
ANNUAL REPORT of the RECORDING and RESEARCH GROUP
January 2005 to May 31st 2006

Recording and Research Group 2005-6

This report refers to the whole of 2005 and to the first 5 months of 2006. A full account of the activities of the Group is given in the minutes of its meetings, which are submitted for report and consultation to the LMC. Members of the Bird Ringing Group are also active within the R&R Group, but their work is reported separately. Hence, the present report comprises just three main elements:

- An outline of the subjects covered in the discussions of the R&R Group, together with major decisions and actions.
- Catalogue of the main areas of survey and research conducted during that time, together with reports and publications.
- Highlights of the recording year – new species and important records.

Three discussion meetings took place during this period: 11th April 2005, 31st October 2005 and 27th March 2006. In addition an informal field meeting followed the LMC AGM on 18th June 2005, and there were several extraordinary meetings of those with an interest in eco-hydrological research and monitoring *e.g.* on 2nd February 2005 and 24th April 2006. The discussions of these extraordinary meetings were reported to the LMC (see also point **IV** below). Amongst several presentations made by members of the R&R Group in 2005 were:

- *Wicken Fen Research in the 21st Century* by Owen Mountford to the Institute of Biology at Wicken on 14th May 2005; and
- *Monitoring, survey & research in fen habitats at Wicken* by Stuart Warrington, Franc Hughes & Owen Mountford to the Fen Management Workshop at Norwich on 2nd December 2005.

Activity of the Recording and Research Group 2005-6

The work and discussions of the group included (see also minutes of the 3 meetings):

- I. Recorder:** There was considerable progress (notably by Stuart Warrington, assisted by Ian Bray of Anglia Ruskin) in getting the huge body of Wicken data onto *Recorder*, as well as tracing further bodies of relevant data. Greatest progress had been made with insect records, but the ground was set in 2005/6 to get the records for Vascular Plants, Bryophytes, Fungi and Bird records into *Recorder* via Excel spreadsheets in a simple format. Other priorities that were identified were the databases held by National Recorders and those incorporated within the Wicken Fen Book and Checklist.
- II. Access and involvement:** One of the chief roles of the R&R Group is to motivate recorders and all naturalists who work on the fen. A further objective is to provide rigorous checking of records as they are submitted. To these ends, it was proposed to start a Recording and Research Newsletter (edited by Stuart Warrington), and the first issue of this newsletter is imminent (June 2006). Similarly, the Group has discussed using the Wicken website to publish checklists and to provide a portal for submission of records.
- III. Hydrology:** Mike Harding produced two important reports on the hydrology of the old fen (Cook and Harding 2005; Harding *et al.* 2005). A series of problems with water (amount and quality) were clearly identified together with provisional suggestions for how these might be

remedied through engineering and water-management. Proposed solutions required constructive engagement with the *Environment Agency* and (to that end) a major meeting involving the Trust (including LMC and R&R members), *English Nature*, the *Environment Agency* (together with their consultant Halcrow) and the Internal Drainage Board took place on 19th April 2006. The outcome of this meeting is reported elsewhere. An important related development was the decision to develop a monitoring strategy for the new property (see **IV**).

IV. Monitoring the New Property: Considerable activity had already focussed on the new Trust land in terms of its hydrology (Swain 2004¹), soils (Morgan 2005) and flora (Blood-Smyth 2005 *etc*). However, it was decided that a more synoptic programme was needed and there were several meetings to discuss how this might be achieved. The *Environment Agency* (through Paul José) provided a great deal of information and funding to allow such work, and hydrological instrumentation was installed during the spring of 2006. Briefly this monitoring will include dipwells and tensiometers at a series of 19 stations (as exclosures from grazing) in the old fen and the new property chosen to represent variation in past management *i.e.* original fen and fen re-created either *ca* 1950 (Adventurers' Fen) or at varying dates between 1993 and the present (Baker's Fen, Guinea Hall Farm and Burwell Fen Farm). Further instrumentation will be installed in the main channels (lodes *etc*), and together with the terrestrial stations, these will be monitored by Ewan's (supervised and paid for by EA). In addition, volunteers from within the R&R Group will monitor the vegetation and, where possible, the invertebrates within these exclosures. An attempt (as yet unsuccessful) has been made to fund the ecological research and monitoring through a doctoral studentship, but at present, the efforts of the R&R Group members are likely to be supplemented primarily by BSc/MSc students from Anglia Ruskin University and through the continued work of Jennie Blood-Smyth supplying a floristic context. Other options to fund this vital work are also under active consideration.

V. Student projects: the links to Anglia Ruskin and Cranfield Universities continue to produce a valuable and interesting set of projects, not only covering conventional ecology but expanding to include hydrology, soil-development and animal behaviour and welfare. Amongst completed and proposed/ongoing projects are:

- Darren Cooke (Anglia Ruskin – supervised by Franc Hughes) is examining patterns in water quality in the old fen and new properties, following up some of Mike Harding's work.
- Fay Harrison (Anglia Ruskin – supervised by Franc Hughes) compared vegetation in Bakers Fen, Burwell Fen and in ditches.
- Natasha Hobday (Anglia Ruskin – supervised by Mark Kennedy) will be conducting a behavioural study of the Konik ponies.
- Julia Mackenzie (Anglia Ruskin – supervised by Nancy Harrison with inputs from Chris Thorne and from Shelley Hinsley (CEH)) is engaged in a PhD study of the impact of non-native flora on breeding success in blue tits and great tits using the Cambridge University Botanic Garden and Wicken Fen.
- Rachel Mason (Anglia Ruskin) supervised by Franc Hughes investigated regrowth of woody species on areas of Verrall's Fen grazed by ponies.
- Andy Morgan (Cranfield) on a comparison of soil physical properties within the old fen and the new land – following a complementary study on soil water-regime conducted by Frank Swain (also Cranfield).
- Keira Washtell (Anglia Ruskin – supervised by Franc Hughes) will be investigating the impacts of grazing on vegetation, probably focussing on the vision area.
- Another Cranfield MSc student (supervised by Mike Hann) has investigated pollution in the Brickpits and problems of de-oxygenation.

¹ See Secretaries' Report for 2004.

- Similarly Cranfield MSc students (all supervised by Mike Hann) will be examining a) ecology and hydrology of Guinea Hall; b) the relationship between soil penetrability for birds and soil-density; and c) the topography of Burwell Fen Farm.
- A student from Paisley University (supervised by Alan Silverside) will be looking at twigs of carr shrubs to investigate the apparent expansion of nitrophilous lichens.

Further studentships are proposed, and a list of possible projects will be circulated to all Universities in the area including those in London. The lack of input from Cambridge University largely reflects curriculum changes but it was agreed to pursue involvement from CU in addition to that ongoing from Nick Davis (reed warblers) and David Aldridge (mussels).

VI. Other surveys and research (ongoing and planned): Other work being conducted by members of the R&R Group includes a huge body of species recording, especially of invertebrates. Projects with more restricted scope include:

- a) NVC survey of the old fen was completed in 2004, but published in 2005, and will now be converted into a vegetation map and database, allowing the floristic composition of individual compartments to be incorporated within *Recorder*.
- b) In 2005, a start was made on a survey of the drainage channels, but deferred for completion until 2006 due to management status of the ditches.
- c) A Phase I habitat survey is necessary, simply to make the site description for the Fen consistent with all those held by the NT central biodiversity unit. This survey will include the use of recently flown aerial photography.
- d) A visit by the Cambridgeshire group of the *British Bryological Society* on 15th October 2005 produced many new records for Adventurers' and Baker's Fens, including not only extensions to the known distributions of species on the Trust's property but also several previously unrecorded new species (see section below on plant records).
- e) Jennie Blood-Smyth will conduct further surveys this year in Burwell Fen Farm and Guinea Hall Farm, with input from Owen Mountford on ordination.
- f) A targeted survey of thistles will take place in 2006 (Owen Mountford) to ascertain their abundance in the new property and thus cross-compliance for Countryside Stewardship.
- g) Alan Silverside has continued his fungal surveys, discovering (amongst others) a fairy club (*Typhula*) in Little Breed Fen
- h) Studies of particular scarce vascular plants are proposed for 2006 onward e.g. *Carex appropinquata*.
- i) Margaret Palmer (Anglia Ruskin) will be looking at the restoration outcome for Fen Violet and Fen Ragwort, including a return to the Buried Seed Experiment.
- j) Gavin Broad (CEH Monks Wood) will be monitoring parasitic wasps using a malaise trap and other proposals for other insect recording (notably on Lepidoptera) have recently been approved by the R&R Group.
- k) Norman Moore has conducted dragonfly surveys.
- l) Research on the Konik ponies includes a review on behaviour to be produced by Carol Laidlaw (NT Wicken) and a future study of reproductive behaviour by Mark Kennedy (Anglia Ruskin).
- m) Peter Brown (CEH Monks Wood and Anglia Ruskin) has been conducting regular ladybird surveys.

Plant records of interest in 2005-6

The following species were seen either for the first time on the Trust's property in 2005-6 (marked *) or comprise observations of interest for less common species. Several notable records were made during the *British Bryological Society* visit (accompanied by the Botanical Secretary) on 15th October 2005 –these are annotated with *BBS* in the list below.

A. Vascular Plants

Bidens tripartita has been shown to be predominantly a plant of the new property, notably common on the edge of wet depressions in the northern part of Baker's Fen.

**Cirsium x forsteri* (*C. dissectum x C. palustre*) was confirmed for the first time at Wicken in litter near the windpump. It was found by Alan Silverside. There are earlier unlocalised records for the two 10km squares that cover Wicken.

**Crassula helmsii* is a potential pest species that was discovered by Andy Morgan during his study of soil properties and vegetation. Later survey (*BBS*) revealed it to be locally dominant in the southern part of compartment 106 (Baker's Fen) and also to occur rarely on the mere shore.

Eleocharis acicularis has previously been seen mainly in the lodes, but was also found to occur very sparingly on the peaty northern shore of the mere (*BBS*).

Juncus compressus was formerly thought to be rare in short wet grassland, but surveys in 2005 showed it to be common in the lower-lying northern parts of Baker's Fen. This may now be one of the most important Cambridgeshire sites for this rush.

**Lamium hybridum* – a few plants were found on the open upper shore of the mere (*BBS*).

**Lolium multiflorum* is a relic of cultivation on Burwell Fen Farm (Jennie Blood-Smyth)

**Malva neglecta* grows on rough ground by the parking for disabled people near the William Thorpe Building.

Rumex maritimus had not been seen on the Trust's property since before 1975, but a few plants were found with *Eleocharis acicularis* during the *BBS* visit. The rather similar *Rumex palustris* is fairly frequent on Baker's Fen within drawdown habitats.

Triglochin palustre is amongst the more demanding species of fen habitats to have been found in Adventurers' Fen by Andy Morgan, providing some evidence of successful "restoration".

B. Bryophytes

The *BBS* group, including Mark Hill, Chris Preston and Kevin Walker, added many species to the list for Adventurers' and Baker's Fens, but below only new species for the Trust property are listed together with one earlier record made during the ditch survey by James Cadbury and the Botanical Secretary. Of the records, those for *Riccia cavernosa* and **Physcomitrella patens* are of particular interest. Both are local plants in Cambridgeshire that are rare away from those seasonally wet pools that support *Lythrum hyssopifolia*, although *P. patens* is now known to be locally common on the Ouse and Nene Washes. The drawdown habitat of the Baker's Fen scrapes has produced an important new habitat for such plants.

**Barbula unguiculata* – scattered in Baker's and Adventurers' Fens (*BBS*).

**Bryum gemmiferum* – scrapes in northern part of Baker's Fen (*BBS*).

**Dicranella varia* – scattered in Baker's and Adventurers' Fens (*BBS*).

**Didymodon fallax* – scrapes in northern part of Baker's Fen and Harrison's Drove recently made up with limestone (*BBS*).

**Leptobryum pyriforme* – scrapes in northern part of Baker's Fen and peaty mere shore (*BBS*).

**Microbryum davallianum* – scrape in northern part of Baker's Fen (*BBS*).

**Physcomitrella patens* – scrapes in Baker's Fen and peaty shore of mere (*BBS*).

**Pseudocrossidium hornschurchianum* – Harrison's Drove recently made up with limestone (*BBS*).

**Riccia cavernosa* – sparse on peaty shore of mere, but locally abundant (especially by grip) in compartment 106 of Baker's Fen (*BBS*).

Ricciocarpos natans was known in the brickpits by Harold Whitehouse and others, but was found for the first time south of Wicken Lode growing abundantly in shallow water at the northeast edge of the "New Reedbed" (compartment 53).

**Tortula acaulon* (*Phascum cuspidatum*) - scrapes in north part of Baker's Fen and shores of mere (*BBS*).

Animal records of interest in 2005-6

There has been huge activity in recording insects at Wicken during recent years, and this effort has been complemented by compiling information onto *Recorder*. The first issue of the *Wicken Fen Recording and Research Newsletter* includes reviews of several insect orders together with recent notable records: *Lepidoptera* (moths), *Trichoptera* (Caddisflies), *Hemiptera* (Bugs), *Coleoptera* (beetles) and *Hymenoptera* (bees). Two other records of interest for 2005 are:

Scarce Chaser (*Libellula fulva*) was found by Norman Moore during his regular dragonfly surveys, and may be breeding at Burwell Lode.

Orange ladybird (*Halysia 16-guttata*) was found by a group of botanists (!) from Madingley Hall in the Sedge Fen on 3rd April 2005, sheltering in carr by the boardwalk.

The composition of the Recording and Research Group in 2005-6

Membership of the group includes not only the Botanical and Zoological Secretaries and the reserve staff but also all the recorders for particular taxonomic groups and indeed anyone actively engaged in research or recording within the National Trust's properties at Wicken. In effect membership is neither by election nor invitation but by input *i.e.* if a person is contributing new information on the distribution of Wicken species or their ecology *etc.*, we would be delighted to have their participation! The next discussion meeting is proposed for 30th October 2006. Please notify one of us if you would like to attend. You can also keep in touch with recording and research at Wicken via the *Newsletter* (contact Stuart Warrington at stuart.warrington@nationaltrust.org.uk).

Although many new people have become involved, two members of the group have resigned from active membership over the past 18 months. Mike Brooke was Zoological Secretary for many years and the first Secretary of the R&R Group. His rigorous input to discussion, his efficiency as Secretary and his all-round contribution to recording and research at Wicken were outstanding. Ivan Perry has contributed more records to our knowledge of Wicken Fen than anyone else and made Wicken the premier *Diptera* site in the UK. We are delighted that although he will not be an active member of the R&R Group, he will continue as recorder for *Diptera* – a position where he is all but irreplaceable.

Papers, theses and reports 2005-6

Blood-Smyth, J. (2005). *Plant Survey – Burwell Fen Farm and Guinea Hall Farm*

Cook A and M Harding (2005). *An evapotranspiration-groundwater water balance for Wicken Fen*. Ecology, Land and People for The National Trust, Wicken Fen.

Harding M, Smith K and B Williamson (2005) *The ecohydrology of Wicken Fen and a water level management strategy*. Ecology, Land and People for the National Trust, Wicken Fen.

Mason, R. (2005). *The impact of grazing by Konig Ponies on regrowth of woody species on Verrall's Fen*. BSc dissertation, Anglia Ruskin University.

Morgan, A. (2005). *Investigation into the Influence of Farming Methods on Changes in Vegetation and Soil Properties of Restored Fenlands over Time*. MSc thesis, Cranfield University at Silsoe (Land Reclamation and Restoration)

Mountford, J.O., Colston, A. and Lester, M. (2005). Management for diversity: the sedge and litter vegetation at Wicken Fen NNR in 2004. *Nature in Cambridgeshire* **47**: 15 – 23

J. Owen Mountford (Botanical Secretary and R&R Chair)

Helen Roy (Zoological Secretary and R&R Secretary)

6th June 2006