



National Trust

Wicken Fen

Recording and Research Newsletter

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Wicken Fen National Nature Reserve, Lode Lane, Wicken, Cambs. CB7 5XP (Tel: 01353 720274)



An aerial photograph of Wicken Fen, August 2012.

The small pale areas on the old Fen show what limited sedge cutting was possible in this wet summer. The Mere shows clearly in the centre, just south of Wicken Lode, and across the bottom edge are several shallow flooded areas of the restored Baker's Fen. Contrast the much reduced extent of scrub here with the 1975 aerial photo later in this newsletter.

Wicken village is on the right. The photo was one of a series taken as part of the Fen Landscape-scale Restoration Monitoring Project, to enable detailed analysis of the habitat development.

Introduction

Happy New Year and welcome to the fifth issue of the Wicken Fen Recording and Research Newsletter. The aim of this Newsletter is keep you informed of what is going on at Wicken Fen nature reserve. We hope you find the contents interesting and that you might be encouraged to get involved.

Wicken Fen Nature Reserve is owned by the National Trust and is managed by a professional team guided by NT advisors and a highly experienced and knowledgeable Local Committee.

The 'Research and Recording Group' at Wicken helps to organise and co-ordinate the various scientific, recording and natural history activities on the property. Everyone who is interested in research and recording at Wicken is welcome to attend the Group's three meetings each year, one of which will be a summer field excursion. Contact Peter Bircham, the Chair.

Contact Addresses

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We hope that this Newsletter will find its way to everyone who has an interest in Wicken Fen. Please do tell Stuart Warrington, if you know of people who you think would like to receive it (postal or email address). Also if you don't want to receive this Newsletter again, just tell Stuart.

In this issue ... Weather in 2012, Site Management, the Wicken Archive, Birds (nests, ringing review, Baker's Fen), PhDs for Pete Stroh and Blaise Martay, Vegetation Surveys, A red-letter night for moths, notable species records, Research & Recording protocols and permits,

Two Wicken Fen Websites

The main Wicken Fen website for visitors, opening times and events is here:
<http://www.nationaltrust.org.uk/wickenfen/>

The Wicken Fen Natural History and Research website has been re-launched, with a new look, more photos and we shall be slowly adding more information. Please do visit and explore the pages. For example, all the monthly Ringing Group reports are here, as are synopses of the fauna and flora (several of which need updating). We welcome any feedback to help us improve the site. Check it out at: <http://www.wicken.org.uk/>

The weather in 2012

No-one needs reminding of just how difficult a year it was in the British countryside, for the wildlife and for the workers. The winter was dry and cold, and about 3 days after we held a meeting about 'what to do if the drought persists', it started raining and raining.

We all knew it was dull and wet, but here are some facts! Total rainfall in 2012 in Cambridge (Botanic Gardens) was 813 mm, which was more than twice that recorded in 2011 and was 46% above the 30 year mean. The wettest month was July with 130 mm of rain. Total annual sunshine

hours were 100 hours lower in 2012 than in 2011. The average temperature was 1.3 C lower than in 2011, although both years recorded the same max temp of 31.7 C (on 18th Aug, in 2012).

<http://www.botanic.cam.ac.uk/> (click the link to 'The Garden' and then 'Climate & Soils')

Site Management in 2012

A very detailed Site Management report is produced quarterly by Martin Lester for the Local Committee, but here are some highlights.

The high water table on the Sedge Fen meant that the full extent of sedge and litter harvests were not carried out in summer-autumn 2012, nor was the rotational ditch management. A few small areas were attempted, but were slow to cut and clear and we became worried that the machinery would damage the peat soil and the vegetation. It is not a problem to miss the fen harvest for a year and this must have happened many times over the centuries. The vegetation and associated species will be fine. But we do want to carry out the harvests to the planned rotation, as far as it is possible, so here's hoping for much better weather in 2013.

We reported on the new Windpump on the Sedge Fen in the last Newsletter and its operation and where the water went were carefully monitored through the winter of 2011/12. Dipwells were installed, water chemistry samples analysed, and vegetation monitoring is underway. More on this in a later Newsletter.

James Selby, the Ranger with main responsibility for the old fen, has been undertaking some scrub management trials on Verrall's Fen. Eight Highland cattle have joined the 16 Konik ponies on Verrall's Fen, to increase and diversify the grazing pressure, but some scrub management is still likely to be necessary to keep the open fen habitat, so James has been exploring various options. Initial observations reveal that the cattle will browse the alder buckthorn whereas the ponies avoided this species, but we wait to see if all of the scrub re-growth is better controlled by the mixed grazing.

There have been some very significant changes on Burwell Fen in 2012 with more planned for 2013. This large area was bought in 2001 and initially looked highly promising as it lay very wet in the winter. However, the shallow peaty soil dried out very rapidly each spring and wetland plants have been mainly restricted to the old field ditches. After much research and deliberation, it was decided to construct a low one metre clay bund around the south side of the site (using clay from under the peat). Water would be gravity fed into this bund area in winter to create several shallow-flooded zones with variable water depth. The evaporation of the water in the spring and summer would create lots of muddy drawdown zones and leave a few places with deeper water (e.g. where the ditches are). The bund was completed in the summer and has re-vegetated so rapidly it is hard to see where it is. Water was trickled into the area for the first time from November 2012. The next step-change in the management of Burwell Fen will be the introduction of the Trust's own herds of grazing animals, the Konik ponies and Highland cattle. Small herds of each will be established in summer 2013 and allowed to graze the site all year around. It will be fascinating to see how the soil, vegetation and wildlife respond.

We will want more surveys of the wildlife present on Burwell Fen in the future, especially of the birds and vegetation, but also of any other taxa, to see what species benefit from the work on Burwell. At present, it is the best place to spot Roe Deer – so we wonder what else might thrive on Burwell from now on.



Photo 1. Koniks grazing the plentiful vegetation in 2012 on Guinea Hall.

The Wicken Fen Archive

Peter Bircham

Wicken Fen had been studied by naturalists even before the National Trust purchased its first strip of land in 1899. Many entomologists, Lepidopterists in particular, visited the Fen to collect specimens. Some of these visitors were academics from the University of Cambridge. As a consequence of the University connection there has been a history of research at the site as is reflected by Gardiner and Tansley's classic book "The Natural History of Wicken Fen", which was published in six volumes from 1923 to 1932. This book is quite possibly the earliest example of a detailed study of a nature reserve. Additionally the site had a management committee, which first met in 1911 and really got involved in the 1920s, had many members who were Cambridge academics.

From around this time, we have the beginning of a Wicken Fen archive: minutes of meetings, correspondence, published articles and scientific papers. The Archive gives an invaluable historical perspective, but it also betrays the conflicting nature of the opinions of many of the people involved at the Fen even in the 1930s.

For example, a letter from two members of the Entomological Society of London, Bedwell and Edelsten, dated November 1931 complains about the lack of management with a concluding statement:

A rigid preservation of the fen "in its natural state" with no cutting of vegetation, or clearing of lodes and drains is the quickest way to exterminate most of the species it is desired to conserve.

This was neither the first nor the last in a series of complaints from the entomologists that the Fen was being allowed to grow over and that cutting regimes should be implemented. Professor Stanley Gardiner, the Chairman of the Executive Committee clearly became exasperated with this continual barrage of complaint and in 1933 responded rather crossly to a further letter from Edelsten who complained again about the (lack of) management and stated that as no entomologist was on the committee their wishes were being ignored. Gardiner tries to pacify the entomologists with a management plan.

The archive shows this to be a continual theme, where interested parties see management issues in entirely different ways and each interest area suggests differing priorities most of which were unachievable.

The archive is stored at present mainly in an annex of the University of Cambridge Central Science Library and comprises two four drawer filing cabinets, a two drawer cabinet, and about fifteen cardboard box files together with some cardboard boxes filled with maps. Most of the filing cabinet space is occupied with what might broadly be described as administrative papers. The box files contents include photographs, maps, research project reports and copies of the original series of guides of various fauna and flora. Some more recent documentation is stored at the Fen (much of it in the loft above the Education Building). At present the Research and Recording Group is overseeing a project to scan as much as possible of the useful material with a view to making an electronic archive available via a website.

The effect of the Second World War is revealed in letters relating to the possibility of using the Fen as a practice target for bombing, or to the other possibility of turning the Fen over to agriculture. This was repelled, largely due to the efforts of William Thorpe (after whom the Visitor Centre is named), not least by the possible usefulness of the alder buckthorn (*Frangula alnus*) that grew at Wicken in the manufacture of detonators. All of which came to naught. There was no bombing and the main Fen was untouched, nor did the alder buckthorn live up to expectations.

In the immediate post-war period the Fen became a focus for its botanical interest and the entomological value was given less emphasis. The botanical interest seems to have begun with the pre-war studies of Professor (Sir) Harry Godwin who used a series of dedicated plots to observe and record the changes in the vegetation over time and the archive contains much published and unpublished material of this origin. By July 1975 a six-page Report of the Scientific Sub-Committee contained survey findings and recommendations for management in which the criteria were entirely botanical, the only mention of fauna such as insects and birds is in the final two short paragraphs of the summary. The implication being that if the plant life was managed successfully then all else would follow.

An important facility is the collection of aerial photographs including a rather poor quality composite from 1923. Some of these are large and require specialist copying. There is a series dating from the immediate post war period up to 1980, many are repetitions of the previous year and as such their value is limited, nevertheless it will be possible to produce a series over the post war period.

There is also a small collection of photographs, mainly in black and white, and depicting subjects as varied as a particular plant, insect or bird up to panoramas and landscape views and some images showing the management of the Fen – cutting sedge etc. There is a nice sequence of photographs taken in 1960 showing various aspects of the Fen.

The main factor driving this project is the desire to have the results of the research undertaken over the years in an accessible form, both to use as reference but also to plan repeat surveying. Once they are available electronically we can ask specialists to search for species that have been recorded in the past using the previous survey data. Since the Fen has been the subject of many research projects by students (at least seventy dating from the 1970s and 80s are in the archive) there is a wealth of information to draw from.

Realistically the scanning of the useful material will take up to four more years and even then a great deal of the administrative paperwork will remain in hard copy only. It is anticipated that by the end of 2013 the bulk of the research reports will be copied as well as all of the photographic material but much of the management studies will take some time to analyse.



Photo 2. Wicken Lode, south-west, with Verrall's Fen to the left and Evan's Fen to the right, in the 1960s. [from the Wicken Fen archive at Cambridge University]



Photo 3. Max Walter's family boating on Wicken Mere, c. 1960. [from the Wicken Fen archive at Cambridge University]



Photo 4. Wicken Fen aerial photo in summer 1975.

This photo clearly shows the extent to which scrub had invaded the old Fen, with relatively small areas being maintained as open fen habitat by cutting. Adventurers' Fen and the Mere, south of Wicken Lode, look more open free from trees and scrub. The land further south is still in arable farming, but almost all of this is now part of the Wicken Vision habitat restoration project.

Birds

Wicken Fen Bird Ringing Group, report of 2012 activities

Chris Thorne

The Wicken Fen (Bird Ringing) Group has been in continuous operation for 45 years having been founded in 1968. In April 2012, the **100,000th** bird was ringed, and by the end of the year the overall ringing total was 102,782. Of this total, 546 birds have subsequently been reported away from the Fen (80 of them abroad).

The Group, at 31 December 2012, numbered 39 members and 22 registered "friends". This represents a slight fall in membership, and the corresponding coverage at the Fen was below the average of the last 6 years. Ringing operations were conducted on 175 different days, involving 4288 member- (man- & woman-) hours. Netting sessions were held in every month, with the majority of sessions, 84, being carried out on St. Edmund's Fen (Compartments 30-35). 62 sessions were at the Reedbed (Compartments 51-53), 39 were at North Field/Gallops (Compartments 20-23), 18 on the ride between Sedge Fen and Gardiner's Drovers (Compartment 15) and 7 at the Brickpits,

working from the Roger Clarke Hide. In addition there were 15 sessions in the more “remote” areas (Priory Farm/Burwell Fen/ Guinea Hall/Oily Hall). Several of these latter areas of the Fen were visited to ring nestling birds.

The 2012 ringing total was 3368 birds, of 58 different species. In addition to the 3368 “new” birds in 2012, 825 of the “retraps” (birds already bearing rings) had been originally ringed at the Fen in years earlier than 2012; and a further 15 were “controls” (birds originally ringed away from the Fen, but captured at Wicken). Several species topped the 100 mark, the highest scores being Reed Warbler with 469 ringed, Blackcap 292, Blue Tit 271, Great Tit 192, Goldfinch 151, Chaffinch 147, Reed Bunting 137, Wren 135, Redwing 126, Chiffchaff 125, Robin and Blackbird both 113 (this is the second year running that the totals for these two species have been identical), Greenfinch 111, Sedge Warbler 109, and Meadow Pipit and Goldcrest both 105; the next most numerous were Long-tailed Tit 73, Swallow 71, Lesser Redpoll 53, Bullfinch 49, Willow Warbler 42, Dunnock 37 and Pied Wagtail 36.

The Meadow Pipit and Goldcrest totals, as well as that for Bearded Tit (35) are all-time Wicken records. Other Wicken Fen ringing records broken in 2012 were the 14 Stock Doves, 2 Firecrests, 4 Coal Tits and 7 Siskins. Rather few of the more “unusual” species were handled in 2012 – Hobby 1, Water Rail 1, Lapwing 6, Woodcock 1, Collared Dove 1 and Tawny Owl 1. A few of the birds that once were much more numerous at the Fen were caught during the year – 53 Lesser Redpolls (the record catch was 261 in 1974), 5 Cuckoos (13 in 1985) and 2 Spotted Flycatchers (29 in 1974). Two new species were added to the Group’s ringing total, 3 Common Terns (nestlings on a raft at Pout Hall) and a Little Grebe (which had crash-landed close to a Member’s car); so the ‘all species’ total now stands at 105 species.

A major reason for the lower number of birds ringed at the Fen in 2012, was the very poor weather (the 2012 Cambridgeshire rainfall was the highest for many years). This result was also reflected in the Group’s nest recording. Although 93 nests of 25 species were found and monitored (these totals much the same as those for 2010 and 2011), nesting success was poor. The Group’s Tit nestboxes exemplify this: of the 85 boxes, 49 were used in 2012 but the success rate was only 22% for Great Tits (average 50 % for 2009-11) and 19% for Blue Tits (average 59% for 2009-11). Barn Owls, Jackdaws and Stock Doves were also ringed in the boxes designed for those species. 66 nestling birds of a further 5 species were ringed, the largest total (the 37 Reed Warblers) being the birds under study by Prof. Nick Davies and Dr. Rose Thorogood. A “nesters’ report” is published separately below.

During 2012 we received news of the origins of some ringed birds recently trapped at Wicken Fen – two Sedge Warblers from France, two Blackcaps from Belgium, a Lesser Redpoll from Wales, two Sedge Warblers from Lancashire, Reed Warblers from Wiltshire, Sussex, Suffolk and Norfolk, a Swallow from Hertfordshire and a Goldfinch from Suffolk. Several Wicken-ringed birds also travelled far – no fewer than four Reed Warblers to France and one to Portugal, three Sedge Warblers and a Sand Martin also to France. Within Britain, a Barn Owl apparently went to Yorkshire (but it is not unknown for a motor car casualty to be carried by its killer to a site far beyond where impact occurred), a Blackcap and a Pied Wagtail to Kent, Sand Martins, Sedge Warblers, Reed Warblers, a Swallow and a Lesser Redpoll to Sussex, a Swallow to Essex and a Great Tit and a Reed Bunting to Suffolk.

Longevity records broken in 2012 were a Chaffinch at 9 years 9 months and a Tree Creeper at 5 years 9 months; a Jay came close to its record at 6 years 4 months. The oldest birds (or rather the

longest intervals between ringing and recapture) of other species were a Reed Bunting at 7 years 11 months, a Long-tailed Tit and a Reed Warbler both at 7 years 1 month, a Garden Warbler at 7 years 0 months, a Great Tit at 6 years 6 months, a Bullfinch at 6 years 0 months, a Blue Tit at 5 years 10 months, a Robin at 5 years 9 months, a Blackbird and a Blackcap both at 4 years 11 months and a Wren at 4 years and 5 months.

In summer 2012 we continued (for the 43rd successive year) our “Standard Sites Sessions”. These special ringing visits involve placing nets in exactly the same sites, for exactly the same time, at the same dates every year, and enable us to monitor the breeding population of birds at the Fen. In addition, in 2012, we continued, for its second year, the parallel monitoring of the “Constant Effort Sites” at the Reedbed. An analysis of the CES work in 2012 confirmed that juvenile bird numbers were less than 60% of those seen in 2011 (adult bird numbers, aside from Sedge Warblers, were less affected), and that insectivorous warblers fared the worst. Although a single day’s catching produced all of the year’s Cuckoos (5, the highest total since 2008), for perhaps the first year ever, no Cuckoo was reared at Wicken Fen in 2012.

The Group is grateful to the National Trust for granting permission for ringing on the reserve, and for assisting financially with expenses. In turn, the Group in 2012 assisted the National Trust staff by helping to run some of the “bird walks”, and put on a few “ringing displays” for visitors to the Fen. Group members also collaborated with Anglia Ruskin University by conducting bird ringing and analysis demonstrations for its MSc (Animal Behaviour) students. Scientific support was also given, by Group members, to the Great and Blue Tit studies of Dr. Hannah Rowland, in assisting with the netting, and PIT tagging, of some 250 birds at Madingley Wood.

The Secretary has maintained his production of regular Bulletins (7 in year 2012), keeping Members and Friends informed, not only of ringing activities, but also of general bird observations at Wicken Fen. He also produced monthly summaries of the Group’s activities, which are displayed in the Thorpe Building and included in the National Trust Wicken Fen website (<http://www.wicken.org.uk>). Anyone interested in joining the Group is welcome to contact him, Dr. Chris Thorne, at St. Catharine’s College, Cambridge, CB2 1RL (phone 01954-210566, email cjrt@cam.ac.uk).

Nest Record Summary, 2012.

Jo Jones

Nest Records Officer, Wicken Fen Ringing Group

We were delighted to gain three new nest recorders to the Group at the beginning of the season, including Fen Cottage volunteer Roger Bailey. However, the terrible spring weather made this a difficult and disheartening year to monitor nests at the Fen. As a result the number of nests of open nesting birds is considerably down on our 2011 numbers. We monitored 93 nests of 25 species (see Table 1). The data do not include the Reed Warbler nests collected by Nick Davies.

We once again had the benefit of the experience and commitment of Carl Barimore, who spent many hours on the Fen. As well as having considerable success finding Chiffchaff nests, he also found the first Cetti’s Warbler nest found on the Fen by the Group for some years. Alan Wadsworth once again assiduously searched Gallops for nests: amongst his finds were two Blackcap nests rather bizarrely built in the top of stumps of coppiced Hawthorn. Roger Bailey attempted to monitor Coots’ nests and found many nests, but they were difficult to follow up because of growth in vegetation and outcome of nests being uncertain because of chicks leaving nests soon after hatching. Although the one Lapwing nest we found at egg stage subsequently failed, we were pleased to ring six Lapwing chicks, five on Adventurers’ Fen, and one on Baker’s Fen, the first of

this species ringed since 2007 and at least two of which were close to fledging. The wet conditions probably assisted this species to be more successful in breeding than in recent years. The short scrub at the far end of Monk's Lode was once again a good place to find Linnet and Whitethroat nests, however, the long grass, dripping wet after heavy rain, made it difficult to search this area safely this year.

The nest boxes were again monitored and chicks ringed. Only one Barn Owl nest was successful and once again Stock Doves took over Owl boxes. We have to console ourselves these Doves are amber listed species so also in need of a good breeding home! Egg predation in the Blue and Great Tit boxes was high this year and when we went to ring chicks a number were very small for their age. Overall success rate was poor (see Table 2 and Figure 1).

A Blackcap nest, delicately built of dry grass, at the back of fronds of hanging ivy, about 1m off the ground, illustrated the fragility and secret world of breeding birds at the Fen. Alongside the busy footpath between Monk's Lode and Baker's Fen, the parent birds were unnoticed by the majority of visitors, and the nest and contents survived a weekend of the ivy being blown in howling gales. We were delighted to ring four chicks, and then find they had successfully fledged. It was an additional pleasure to show two passing visitors the empty nest and give them a glimpse of what is going on all around the Fen, hidden from sight.

I am pleased to report that Carl Barimore, who is Nest Recording Officer for the British Trust for Ornithology, is taking over from me as the Ringing Group's Nest Records Officer next year. We are once again grateful for the support given us by staff and volunteers at the Fen.



Photo 5. Coot Chicks (by Vicky Knight).

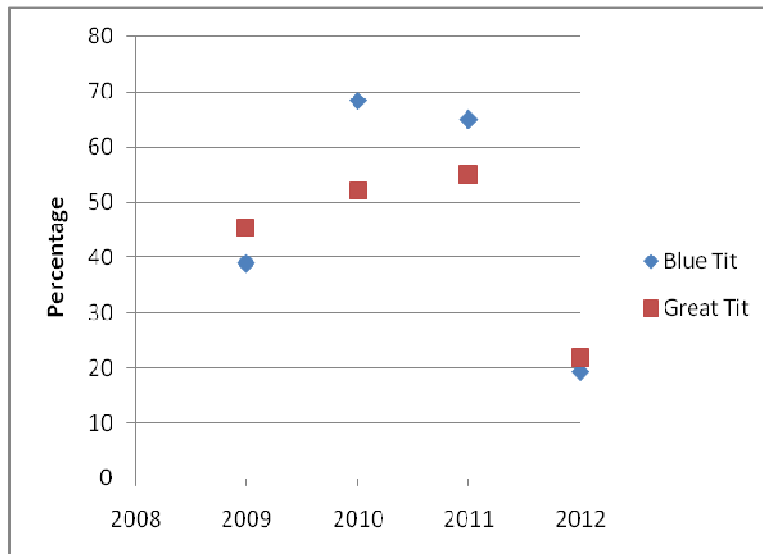
Table 1. Summary of nests found at Wicken Fen, 2012, with success and failure rates (where Outcomes do not add up to 100%, the remainder are Unknown)

| Species | Nests | Average number of eggs | Average number of pulli | Outcome Success | Outcome Failure |
|-------------------|-----------|------------------------|-------------------------|-----------------|-----------------|
| Barn owl | 1 | 5 | 3 | 0% | 100% |
| Blackbird | 6 | 3.5 | 2.3 | 33% | 50% |
| Blackcap | 3 | 4 | 3 | 33% | 33% |
| Blue Tit | 26 | 7.2 | 3.5 | 19% | 69% |
| Bullfinch | 1 | 4 | 0 | 0% | 100% |
| Cetti's Warbler | 1 | 2 | 0 | 0% | 100% |
| Chaffinch | 4 | 2.8 | 1 | 25% | 50% |
| Chiffchaff | 6 | 4.7 | 2.8 | 17% | 67% |
| Collared Dove | 1 | 2 | 2 | 100% | 0% |
| Coot | 1 | 3 | 3 | 100% | 0% |
| Dunnock | 1 | 3 | 3 | 100% | 0% |
| Goldfinch | 1 | 2 | 0 | 0% | 0% |
| Great Tit | 23 | 7 | 2.5 | 22% | 78% |
| Lapwing | 1 | 4 | 0 | 0% | 100% |
| Linnet | 2 | 4 | 2 | 0% | 50% |
| Long-tailed Tit | 1 | 3 | 3 | 100% | 0% |
| Moorhen | 1 | 4 | 4 | 0% | 0% |
| Mute Swan | 1 | 1 | 0 | 0% | 100% |
| Reed Warbler | 1 | 4 | 3 | 0% | 0% |
| Song Thrush | 1 | 4 | 0 | 0% | 100% |
| Stock Dove | 3 | 3.3 | 2.7 | 100% | 0% |
| Swallow | 2 | 5 | 5 | 100% | 0% |
| Whitethroat | 2 | 4.5 | 0.5 | 0% | 100% |
| Willow Warbler | 1 | 2 | 2 | 100% | 0% |
| Wren | 2 | 5 | 3 | 50% | 50% |
| Total 2012 | 93 | 4.6 | 28% | 12% | 0% |

Table 2. Summary of results from Great Tit and Blue Tits nesting in boxes at the Fen, 2009-2012

| Year | Great Tit | | | | Blue Tit | | | |
|-------------|--------------|--------------------|--------------|--------------|--------------|--------------------|--------------|--------------|
| | No. of nests | Average no of eggs | Success rate | Failure rate | No. of nests | Average no of eggs | Success rate | Failure rate |
| 2009 | 21 | 5.2 | 48% | 52% | 18 | 5.3 | 39% | 61% |
| 2010 | 23 | 6.8 | 52% | 43% | 18 | 7.3 | 72% | 28% |
| 2011 | 21 | 8.1 | 52% | 48% | 20 | 8.6 | 65% | 30% |
| 2012 | 23 | 7.0 | 22% | 78% | 26 | 7.2 | 19% | 69% |

Figure 1. Percentage of Blue Tit and Great Tit nests from which chicks were successfully fledged.



Birds on Baker's Fen

Martin O'Leary

Martin carried out a detailed survey of the birds seen on Baker's Fen from winter 2011/12 into the summer of 2012 (41 visits in all). Baker's Fen was the first area to be restored by the NT from arable farmland to a wet grassland habitat in the late 1990s, and now has large expanses of shallow water present in winter which drawdown slowly in the spring. Martin has amassed a huge amount of data, so here are some key findings.

Overall, in winter a total of 59 species were counted and 73 in summer. Surprisingly over half the species recorded were counted on 4 or fewer visits and no species were counted on every visit. In fact only 11 species were counted on more than half the counts, these were jackdaw, carrion crow, woodpigeon, coot, mallard, lapwing, black-headed gull, pheasant, greylag goose, gadwall and shoveler. In winter, teal, wigeon, fieldfare, short-eared owl and goldfinch were recorded frequently. In the summer, there were more frequent sightings of reed bunting, magpie, little grebe, shelduck redshank, reed warbler, and grey heron.

The number of species recorded per visit (richness) was lower in winter, higher in summer and peaked in May, with the presence temporarily of birds on passage. In the autumn, as might be expected, the number of species recorded rises as the water level rises to create pools across this Fen. The changes in the bird community on Baker's Fen probably reflect the habitat changes through the year as the water level fluctuates, and the movements of migrating birds.



Photo 6. A view across Baker's Fen

Research

Firstly, and most importantly, many congratulations to Dr Pete Stroh and Dr Blaise Martay, both based at Anglia Ruskin University, who successfully completed their **PhDs** based largely on ecological field work carried out at Wicken Fen in recent years.

Pete Stroh was the Project Officer to monitor and evaluate landscape scale restoration projects, from 2007 to autumn 2012 supervised by Dr Francine Hughes. This project was funded by the Esmée Fairbairn Foundation and worked on the two landscape-scale, wetland restoration projects in the Fenlands of Cambridgeshire, the **Wicken Vision**, and the **Great Fen Project** near Peterborough. The work included:

- Vegetation surveys, including terrestrial and aquatic species, and areas with/without grazing
- Hydrological monitoring, including water tables, soil porosity, changes in relation to rainfall.
- Experimental work on seed bank composition and seeds carried in the dung of grazing animals
- Vegetation mapping using aerial photographs in conjunction with digital topographical data.
- A key outcome was the design of monitoring protocols suitable for ecosystem monitoring with a primary emphasis on hydrological and botanical monitoring. See Stroh, P. and Hughes, F.M.R. (2010)

Publications from Pete Stroh's and Blaise Martay's research.

Hughes, F.M.R., Stroh, P., Mountford, J.O., Warrington, S., Gerrard, C. and Jose, P. (2008) Monitoring large-scale wetland restoration projects: Is there an end in sight? in P. Carey (ed.) *Landscape Ecology and Conservation*. Proceedings of the 15th Annual Conference of the International Association for Landscape Ecology, Cambridge, UK, Sep 8-11, 2008 p.170-179

Hughes, F.M.R., Stroh, P.A., Adams, W.M., Kirby, K.J., Mountford, J.O. & Warrington, S. (2011). Monitoring and evaluating large-scale, 'open-ended' habitat creation projects: a journey rather than a destination. *Journal for Nature Conservation*, **19**: 245-253

Martay, B., Hughes, F. & Doberski, J. (2011) A comparison of created and ancient fenland using ground beetles as a measure of conservation value. *Insect Conservation and Diversity* **5**: 251-263

Abstract

1. Ground beetles (Coleoptera: Carabidae) were used to assess the conservation value of created and undrained fenland on Wicken Fen, UK. We investigated whether the number of years since agricultural use affected the numbers of Nationally Scarce and wetland ground beetles on created fens. We also compared the created wetland with ancient undrained fenland.

2. Common wetland ground beetles increased with time since agricultural use. However, Nationally Scarce ground beetles did not increase over time. All areas of created wetland had fewer Nationally Scarce and common wetland ground beetles than undrained fenland except for the area not used for agriculture for 60 years. This area had fewer Nationally Scarce ground beetles than undrained fenland but not significantly fewer common wetland ground beetles.

3. The proportion of wetland ground beetles with high dispersal abilities did not vary in relation to time since agricultural use or distance from the nearest drainage ditch, indicating that dispersal did not limit colonisation. Therefore, proximity between the created wetland and established fenlands was not essential for wetland species to colonise the new habitat.

4. The ground beetle assemblage was influenced by soil moisture, cover of grasses and vegetation density. Of these variables, high soil moisture and low vegetation density increased the abundance of Nationally Scarce and common wetland ground beetles. High vegetation density was more detrimental to Nationally Scarce ground beetles than to common wetland beetles. Decreasing the vegetation density by increasing the grazing intensity on created wetland may increase the abundance of Nationally Scarce ground beetles.

Stroh, P. & Hughes, F.M.R. (2010) Practical approaches to wetland monitoring: Guidelines for landscape-scale, long-term projects. 45pp – download .pdf from:

http://www.anglia.ac.uk/ruskin/en/home/microsites/aerg/research_projects/evaluating_habitat.html

Stroh, P.A., Hughes, F.M.R., Mountford, J.O., & Sparks, T.H. (2012). The influence of time on the soil seed bank and vegetation across a landscape-scale wetland restoration project. *Restoration Ecology* **20**: 103-112

Stroh, P.A., Mountford, J.O. & Hughes, F.M.R. (2011) The potential for endozoochorous dispersal of temperate fen plant species by free-roaming horses. *Applied Vegetation Science* **15**: 359-368

Abstract

Questions: Can free-roaming Konik horses digest and subsequently disperse seeds of plant species growing in a temperate fen environment? Which species have the potential to be dispersed internally (endozoochory), and do they share common plant and seed traits? How could potential dispersal via endozoochory impact upon grazing management and the natural recolonization of wetland vegetation at a landscape scale?

Methods: Twelve dung samples were collected for one calendar year (Jun 2009–May 2010) from a free-roaming herd of Konik horses grazing vegetation at Wicken Fen NNR. Germinable seed content of the dung was determined by means of a seedling emergence study. Species presence and estimated cover/ abundance were recorded for the grazed (background) vegetation in spring and summer 2009.

Results: Almost one-third of all species present in the background vegetation were also identified in the dung samples. There was an equal split between graminoids and forbs, but substantially more graminoid germinable seeds. Species were dispersed year-round, with the number of species peaking in Sep and again in Dec. Of the 13 traits measured, there were significant differences between dung and background vegetation for six traits. Mean values for seed release heights (min and max) and dispersule weight were significantly lower in species found in the dung, whilst dung species had significantly greater numbers of seeds per shoot, inferred Ellenberg nitrogen values and seed bank persistence.

Conclusion: Year-round free-roaming grazing has the potential to make a considerable contribution to the long-range dispersal of species growing in temperate fen habitats, and is likely to complement alternative dispersal strategies. However, germination and establishment of species post-dispersal fate will be governed by a wide range of environmental conditions.

Hughes, F.M.R., Adams, W.M. & Stroh, P.A. (2012) When is Open-endedness Desirable in Restoration Projects? *Restoration Ecology* **20**: 291–295

Abstract

A low-intervention approach to restoration that also allows restoration outcomes to be framed as trajectories of ecosystem change can be described as “open-ended” restoration. It is an approach which recognizes that long-term ecosystem behaviour involves continual change at small and large spatial and temporal scales. There are a number of situations in which it is appropriate to adopt an open-ended approach to restoration including: in remote and large areas, where ecological limiting factors will be changed by future climates, where antecedent conditions cannot be replicated, where there are novel starting points for restoration, where restoration relies strongly on processes outside the restoration area, in inherently dynamic systems, where costs are high and where the public demands “wildness.”

Where this approach is adopted managers need to explain the project and deal with public expectations and public risk. Monitoring biotic and abiotic components of the project are very important as an open-ended approach does not equate to “abandon and ignore it.”

Stroh, P.A., Mountford, J.O., Araya, Y.N. & M.R. Hughes, F.M.R. (2013) Quantifying soil hydrology to explain the development of vegetation at an ex-arable wetland restoration site.

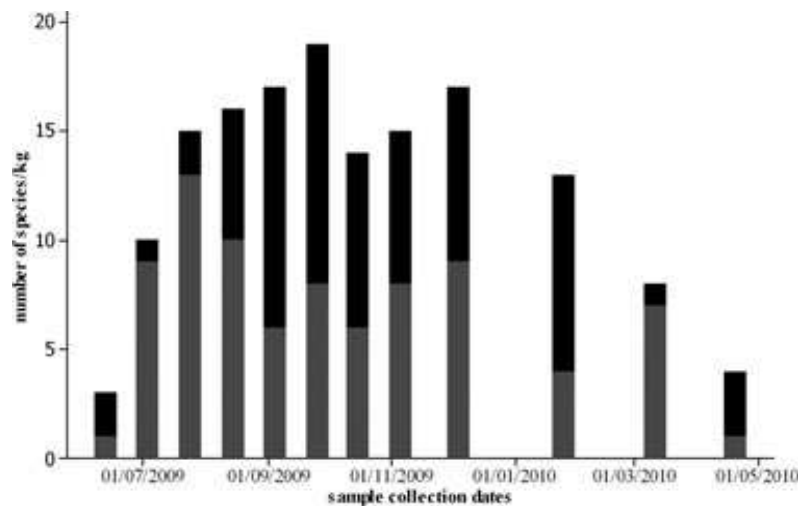
Wetlands (in press)

Abstract:

Wetland restoration often sets vegetation targets that are well-defined in terms of species and their preferred hydrological conditions. However, in many cases land acquired for wetland restoration is highly degraded and targets cannot be achieved. In such cases, it might be better to set looser targets that reflect both the novel starting point for restoration and the need to acknowledge that vegetation assemblages do not remain fixed in space or time. Such an approach to setting targets also requires novel surveillance techniques that incorporate the main factors that determine vegetation outcomes. Water regime and soil structure are known to have considerable influence over the distribution and composition of developing wetland vegetation. The importance of these two factors in explaining the patterns in naturally colonizing vegetation on restored land was explored at a wetland restoration site in the Cambridgeshire Fens (UK). Water, soil and botanical data were collected from ten field positions across the site, and the water regime for each position quantified in terms of Sum Exceedence Values (SEV). SEVs combine the extent and duration of waterlogging stress and drought stress to which vegetation is subjected as a result of fluctuating water table depths using defined soil aeration and drought stress thresholds.

Soil structure was heterogeneous across field positions, ranging from well aerated to exceptionally compact. Five ex-arable field positions exhibited shallow soil aeration stress thresholds and so had the potential to support diverse wetland assemblages. However, three of the five field positions experienced lengthy periods of drought and

consequently supported dry vegetation assemblages. Low SEVa (soil aeration SEV) with low SEVd (soil drought SEV) and well aerated soils were associated with species-rich wetland vegetation. Low SEVa and high SEVd were associated with species-poor dry vegetation. A combination of high SEVa, high SEVd and deep soil aeration thresholds was associated with species-poor vegetation. SEV was found to be a useful tool for surveillance where restoration targets are not specified in detail at the outset.



Total number of plant species per collection date [dry kg/1 of Konik dung].

Bars represent the total number of species that germinated from each dung samples. Grey shaded area represents the number of graminoid species that germinated from each sample.

This graph is an example of the wealth of published data from Wicken Fen, taken from Stroh et al (2011) *Applied Veg Science* **15**: 359-68

The highest number of species per sample occurred in late September, coinciding with the conclusion of flowering and peak seed production for the majority of species within the background vegetation. Based on these seedling emergence results, free-roaming Konik horses have the ability to transport hundreds of thousands of seeds in each calendar year, especially of grass, sedge, and rush species with their high viability.



Photo 7. Pete Stroh talking about his experiments on seed germination from konik horse dung.

Further Research

Small Mammals

The Cambridgeshire Mammal Group carried out a survey for small mammals at Wicken Fen in the autumn of 2012. Surprisingly, such surveys have been rarely carried out at Wicken despite the site being a key one for the research of John Flowerdew of Cambridge University in the 1970s.

Ten different habitat areas of the nature reserve, in Sedge Fen, Little Breed Fen and Adventurers' Fen were surveyed using numerous Longworth traps from 28 Sept to 4 October. Mark Hows and Peter Pilbeam did the bulk of the surveying with Gavin Young and Roger Featherstone assisting during some sessions. Frequent records were made of common shrew, pygmy shrew, bank vole and wood mouse. An interesting discovery was a population of water shrew *Neomys fodiens* on Adventurers' Fen, alongside Harrison's Drove (at c. TL556695). Previously we only had evidence of their occurrence here from analysis of droppings, found in 2009.

No records were made of harvest mouse *Micromys minutus*, a species which does not often turn up in Longworth traps set on the ground. We have rather few records of this species, which should find the reed and sedge habitats at Wicken ideal. The last observation we have is one in 1999, one in 1998, and then none until John Flowerdew's detailed survey in 1973-75, published in 1977.

Flowerdew, J.R., Hall, S.J.G. & Brown, J.C. (1977) Small rodents, their habitats, and the effects of flooding at Wicken Fen. *Journal of Zoology*, **182**: 323-342



Photo 8.
A water shrew
(photo by Vicky Knight)

Grazing

Carol Laidlaw (Wicken Grazing Ranger) wrote an article in *Conservation Land Management*, a magazine with a practical focus, about the grazing scheme at Wicken Fen describing the introduction and management of the free roaming Highland cattle and Konik horses at Wicken. "The Wicken Fen Vision: grazing an evolving landscape" *Conservation Land Management*, Spring 2011, p5-8. A copy can be downloaded here:

<http://www.equiculture.com.au/CLM91wickenfen.pdf>

The Fenflux Project

Dr Jörg Kaduk, Senior Lecturer in Physical Geography, University of Leicester, is continuing his research into carbon and water fluxes from the regenerating peat land at Wicken Fen. Jörg and his students, Ross Morrison and Gong Pan, have been investigating gas and water exchange, on both the undrained Sedge Fen and the restored Baker's Fen. Their hi-tech equipment towers are powered by solar cells and batteries. More on this exciting project in a later newsletter.

<http://www.geog.le.ac.uk/staff/jk61/FENFLUX.html>

Recording

A huge quantity of species records have been acquired in the last 15 months at Wicken Fen. We have the PhD field work of Pete Stroh (restoration land vegetation, which is hugely impressive in its depth and coverage) and Blaise Martay (carabid beetles and plant hoppers). Jennie Blood-Smyth also undertook vegetation surveys of the restoration land, covering a number of compartments that might otherwise be missed (see below). There was a specially commissioned plant survey of various fen water bodies by Jonathan Graham. Owen Mountford continued the detailed vegetation survey of the National Nature Reserve, including little visited parts of Adventurers' Fen, and a focus on drove edge vegetation on the old fen which had missed out from a grid-square survey. We shall report on this important study in next year's Newsletter.

Dave Grundy and colleagues carried out sterling survey work on the moth fauna in various locations (see below for more details). Peter Kirby continued his superb invertebrate surveys as part of the Fen Restoration Project (also at Great Fen), covering a diverse range of species and using suction sampling as well as sweep netting to gather wider range of species.

Stuart Warrington continued his research into the Fen's archives for species records from the 1850s to 1930s, uncovering a number of interesting records of fen plants from University Herbaria, Wicken beetles in the Entomology Room of Cambridge University Zoological Museum, and moth records in the old entomological literature.

We think there are probably in excess of 10,000 species records to be collated and added to our growing database sent in to us in 2011-12. So far, we have collated 5,000.

Plant surveys on the restoration land at Wicken

Jennie Blood-Smyth

Annual plant surveys commenced in 2003 on several fields which had been arable farmland prior to purchase by the National Trust and the commencement of wetland habitat restoration. The objective of the survey was to obtain baseline information and to look at changes in the vegetation over time. A broad brush approach was taken, with a 'w' walk across each field recording plants en route. Plant abundances were noted using the DAFOR index.

In summer 2012, the survey was repeated on a selection of fields at Burwell Fen Farm and Guinea Hall Farm, Wicken. These fields developed through natural regeneration and are now dominated by coarse grasses such as false oat-grass *Arrhenatherum elatius*. On the dry peaty fields on Burwell Fen Farm creeping thistles *Cirsium arvense* were often frequent. For example, in Burwell Field 201 (TL558688) 48 plant species were recorded in 2012, with False oat-grass abundant, Creeping and Spear thistles were occasional along with Common Couch, Bristly Ox-tongue and Ground Ivy. The rest of the species were rare within the field, but included Wood Small-reed, False Fox-sedge, Creeping Cinquefoil, Hemlock, Goat's-beard and Common Meadow-Rue (especially interesting as a plant of the 'old fen'). There were few damp loving species, but it will be interesting to see if this may change with the new Bund around the southern fields. Subsequent surveys at Burwell will include fields within and immediately outside the bund.

Guinea Hall fields are on different, chalky-clay soils, but are also grass-dominated, especially by False oat-grass, Cock's-foot and Common Couch. A few other plant species are turning up here such as Cowslip (some scattered patches but spreading, many seedlings), Selfheal, Knapweed, Black Medick, Yarrow, Wild Parsnip, Meadowsweet and Oxeye Daisy.



Oxeye Daisy (left) and Selfheal (right)

A survey of aquatic macrophytes at Wicken

In July and August 2012 Jonathan Graham undertook a survey of macrophytes at 32 locations to cover a representative sample of water bodies occurring within the Wicken Fen Vision area. These were 7 locations on lodes, 10 at field drains, 7 at meres or ponds and 8 at scrapes.

The richest water body type in terms of total number of species were lodes. However, there are sample points from all water body types within the richest category (23-32 species). There were 2 sample points with greater than 30 total species (Monk's Lode and Lode Pond, on Tubney Fen). 12 of 32 sample points (37%) had 3 or more quality indicator species. This is a higher proportion than would be expected generally within the wider fenland area and comprises sample points associated with both "older" and "newer" fen restoration sites.

Lodes (typically mid-successional stage due to routine annual maintenance) generally provided habitat for the richest macrophyte assemblages including the rarest species (2 Near Threatened species, Flat-stalked Pondweed *Potamogeton freisii* and Long-stalked Pondweed *Potamogeton praelongus*) and included 10 quality indicator species recorded only from this water body type.

The general richness of lode sample points is partly based on their depth and ability to hold permanent significant water levels. This allows a number of perennial species to persist or thrive which have a requirement for deeper water. While meres/ponds, field drains and scrapes had significantly fewer quality indicator species, these water body types provide habitat for a number of species that are either rare or absent from lodes including locally important species such as Common Bladderwort *Utricularia vulgaris*, Hairlike Pondweed *Potamogeton trichoides*, the floating liverwort *Ricciocarpos natans* and Small Pondweed *Potamogeton berchtoldii* (found in one site only).

There is concern regarding the invasive plant New Zealand Pigmyweed *Crassula helmsii* which was recorded from 3 sample points in the restoration land.

Some interesting plant records from Jonathan Graham and other surveys

Flat-stalked Pondweed *Potamogeton freisii*. Near Threatened. Wicken Lode near Verrall's Fen Cmpt 1 (TL54796972), rare in sample, on 06/07/2012. Jonathan Graham.

Long-stalked Pondweed *Potamogeton praelongus*. Near Threatened. In Wicken Lode near Sedge Fen Tower Hide (TL55757012) but rare in the sample, on 27/07/2012. Jonathan Graham.

Small Pondweed *Potamogeton berchtoldii*. Locally abundant in a reed-dominated field ditch, with 30cm water depth, on Baker's Fen close to the cycleway at TL56736967, on 20/07/2012. Jonathan Graham (confirmed by C.D. Preston).

Hairlike Pondweed *Potamogeton trichoides*. A locally uncommon species in the fens. Found at 3 locations. Ditch by the Borrowpit on Adventurers' Fen (TL55426924) on 06/07/2012, Tubney Fen New Mere and Tubney Fen Pond on 03/07/2012. Jonathan Graham.

Narrow-leaved Water-plantain *Alisma lanceolatum*. Monk's Lode at St Edmunds Fen, TL56057012, rare in sample on 27/07/2012. Jonathan Graham.

Fringed Heartwort *Ricciocarpos natans*. This nationally scarce floating liverwort was found to be locally dominant in a ditch by the Borrowpit on Adventurers' Fen (TL55426924) on 06/07/2012. Also abundant in a field drain by Harrison's Drove, Adventurers' Fen (TL56066930 on 27/07/2012. Jonathan Graham.

Spear-leaved Orache *Atriplex prostrata*. Second Wicken record of this ruderal species, on the edge of Tubney Fen Pond (TL55986710) on 03/07/2012. Jonathan Graham.



Small Pondweed *Potamogeton berchtoldii* (Left): Fringed Heartwort *Ricciocarpos natans* (Right)

Dark-leaved Willow *Salix myrsinifolia*. One large shrub was found by Alan Leslie, on 23/07/2011, on the north side of strip of carr running along south edge of Sedge Fen at TL55937022 (confirming A.J. Silverside's record in 1995 in this location). An important record of this willow, which Alan also found near Fordham, as this is predominantly a northern England and Scotland species, and is very rare in East Anglia and southern England. In the same Wicken location Alan found one large shrub of the willow hybrid *Salix cinerea x Salix myrsinifolia*, with both parents.

The Rusty Willow *Salix cinerea subsp. oleifolia* was found by Tim Pankhurst on 22/07/2012 by the Windpump, on the Sedge Fen.

Pete Stroh reports that Marsh Arrowgrass *Triglochin palustre* had a bumper year in 2012 on Verrall's Fen with huge numbers of plants seen in the horse-grazed lawns alongside many of the ditches. Horned pondweed *Zannichellia palustris* has colonised Baker's Fen and Yellow Loosestrife *Lysimachia vulgaris* is also spreading across the restored habitats of Baker's Fen.

Japanese-lantern *Physalis alkekengi*. Burwell Fen: Compartment 200: Pout Hall Pond (TL548691), a patch of this alien species growing and flowering on the pond/lode bank, at this remote site. New to the Wicken list, but a spreading species in England. 13/09/2012 by S. Warrington.

BioBlitz at Wicken on 21st and 22nd July 2012

A “BioBlitz” was held at Wicken Fen and Great Fen over the same weekend in July last summer. We were fortunate that the weather was kind, sunny and dry, given that July was the wettest month of the year. The idea was to engage lots of people with biodiversity, inviting them to get directly involved in recording species on these sites, helped by a team of experts and staff. Nets and containers were available to be borrowed and a lab with trays, microscopes and identification books was set up in the Wicken Education Room. During the day, many people brought in what they had caught to be identified. Digital cameras proved to be invaluable and we managed to identify several species from the images taken. We tried to keep a running list of records on a laptop computer, and were able to add more species to this as people sent in their lists after the event.

Overall, just over 900 species were seen at Wicken during the weekend, a very impressive total, and one that included quite a few notable records of rare species or even species new to the Fen. Mark Powell, a lichen expert, visited for half a day and managed to add a remarkable 33 species to the site list. Mark’s occasional visits since 2008 have hugely increased the site list from 38 species in 1972, to 118 species now! The majority of records submitted during the day were of plants, birds, butterflies and dragonflies, and a couple of hundred moth species were added overnight.

The weekend was so successful that we are planning another Wicken Fen BioBlitz for 12th and 13th July, 2013. Do come along if you are able to.

A Red-letter Moth Night at Wicken Fen.

2012 was not a great year for field work, and was an especially hard one for people interested in flying insects. So, we are delighted to report that Dave Grundy and colleagues, R. Hemming, C. Williams and M. Dale, recorded a remarkable **254** species of moth on their visit on 24th July 2012. This was quite possibly the best moth night in terms of number of species recorded anywhere in Britain in 2012 (does anyone know?). Fourteen light traps were used and **2860** specimens were identified. Dave’s team also visited on 12th June, 9th July and 3rd September, and made a number of valuable records (see below for some highlights).

I did a little bit of research into our Wicken data, and I found that on the 28th June 2009 Mark Skevington, Ron Follows and Adrian Russell recorded 261 moth species and 4279 individuals on their visit to Wicken (from 18 traps, probably the highest ever one day total), and the same team identified 246 species (from 21 traps) on 2nd July 2005.

Wicken Fen has been famous for its Lepidoptera for over 150 years since the visits Messers F. Bond, W. Farren, G.T. Porritt, E. Meyrick and Lord Walsingham, and it does seem to be just as important in the 21st century, despite the loss of the great rarity, the Marsh Moth *Athetis pallustris*, last found at Wicken Fen on 20/06/1936 (one specimen by H.E. Chipperfield).

The notable Lepidopterist R.P. Demuth wrote of some of his moth-ing memories in the *Entomologist’s Record* of 1979, and described his encounter with the Marsh Moth at Wicken 50 years earlier on the 7th June 1929; “*pallustris* came at 11.10pm fluttered about in the grass for some time ... and climbed up a support of the sheet away from the light.” This species was usually observed around but not actually coming to the light traps or sheets set up beside the lights. It was best to turn your back to the light and look in the tall fen vegetation in the vicinity.

Notable invertebrate species records at Wicken Fen

These records come from a variety of sources, and include surveys from the last few years, that we have not reported in a previous Newsletter.

Moths

Cochylis molliculana (Tortricidae): A new species for the Wicken Moth list. 1 female to light in Adventurers' Fen: Cmpt 45, edge (TL558696) on 3/09/2012 by D. Grundy and M. Dale.

Endothenia marginana (Tortricidae): 1 male in a Skinner Trap (125W MV) on the boardwalk by the Visitor Centre on 24/07/2012 by D. Grundy and A. Graham. 1st Wicken record for c.100 yrs

Eucosma metzneriana (Tortricidae): Adventurers' Fen: Cmpt 45, edge (TL557695) on 9/07/2012 by D. Grundy and A. Graham. 1 female in a Skinner Trap (125W MV). A new species for the Wicken list, a recent UK colonist.

Eucosma obumbratana (Tortricidae): Taken in light traps at two locations along Adventurers' Fen: Harrison's Drove, on 3/09/2012 in Skinner Traps (125W MV) by M. Dale. A new species for the habitat restoration land and only the 3rd record since 1973.

Cnephasia genitalana (Tortricidae): A new, scarce species for the Wicken list, when two were taken in a Skinner Trap (125W MV) on 24/07/2012 in Cmpt 19 of the Sedge Fen, TL562704, by M. Dale.

Epinotia brunnichana (Tortricidae): 1st Wicken record for 80 years, when a few were taken in Skinner Traps (125W MV) on the Boardwalk around Cmpt 19 of the Sedge Fen on 24/07/2012 by D. Grundy and M. Dale.

Bryotropha desertella (Gelechiidae): Adventurers' Fen: Harrison's Drove (TL556695) on 3/09/2012, 1 female in a Skinner Trap (125W MV) by D. Grundy and A. Graham. First Wicken record for c.100 years (a wanderer from the coast or from nearby Breckland?).

Gelechia muscosella (Gelechiidae): 1 male in a Skinner Trap (125W MV) by the top end of Wicken Lode on 8/07/2012 by D. Grundy and A. Graham. A nationally rare species and a Wicken Fen speciality, first recorded here by Lord Walsingham in 1869.

Monochroa palustrella (Gelechiidae): 1 on 3/09/2012, Adventurers' Fen: Harrison's Drove (TL558696) in a Skinner Trap (125W MV) by M. Dale. The last Wicken record was in 1989 and this was the first of this nationally scarce (Nb) species on the habitat restoration land.

Coleophora paripennella (Coleophoridae): Adventurers' Fen: Flood Bank, south (TL558695) on 9/07/2012 by D. Grundy and A. Graham. 1 male in a Skinner Trap (125W MV). First Wicken record for c.130 years.

Nascia ciliaris (Pyrilidae): This rather beautiful nationally scarce (Nb) species is one of the Wicken specialities, and was noted on the Fen as early as 1850 by F. Bond. On 8/07/2012 R. Hemming took a few at two locations on the Sedge Fen, and on 9/07/2012, D. Grundy took a specimen on Harrison's Drove on the edge of the fen restoration land, which is pleasing.

Emmelina argoteles (Pterophoridae): This scarce plume moth was discovered new to Britain in 2005 at Wicken Fen by Jeff Higgott, and larvae bred through have confirmed that it breeds on the nature reserve. As far as we know, this species has only been found at Wicken Fen and Chippenham Fen (c. 6 miles east). Dave Grundy and colleagues found it across the old Fen on 9/7 and 24/7 and also at Harrison's Drove on the edge of the restoration land on 3/9/2012, which is very interesting.

Narrow-Winged Pug (*Eupithecia nanata*): The first record of this species for over 20 years at Wicken, probably a wanderer from Breckland, MV Light on the Sedge Fen, 26/05/2012 by Tim Pickering. On the same night, other nice finds by Tim Pickering included Early Tooth-striped (*Trichopteryx carpinata*) (only our third record of this widespread species), Chocolate Tip (*Clostera curtula*) and Orange Footman (*Eilema sororcula*).



Two of Wicken Fen's specialities, the very scarce micro-moths *Nascia ciliaris* (Pyralidae) (Left), *Gelechia muscosella* (Gelechiidae) (Right) By Mark Skevington.

Hemiptera (True bugs)

Quite a few new records or re-discoveries in this insect group, several through suction sampling, employed by Peter Kirby, rather than the usual sweep netting or beating.

Salda muelleri (Saldidae): Literature research turned up two records (male and female) for this rather scarce 'shore-bug' species at Wicken, Sedge Fen in April 1943 by E.C. Bedwell and C. Henderson (Entomologists' Monthly Magazine 1943), at that time, a new species for Wicken and Cambridgeshire. It has not been re-found at Wicken since then.

Cyphostethus tristriatus (Acanthosomatidae): Adult on Cupressus on the lane next to the Fen by B.S. Nau, during the Bioblitz on 21/07/2012, a new species for the Wicken lists.

Temnostethus gracilis (Anthocoridae): Adult on Oaks in the car-park by B.S. Nau, during the Bioblitz on 21/07/2012, a new species for the Wicken lists.

Notonecta maculata (Notonectidae): Surprisingly this common greater water boatman was new to the Wicken list when spotted by B.S. Nau in the plastic-lined raised pond by the Dragonfly Centre on Lode Lane, on 21/07/2012.

Agallia brachyptera (Cicadellidae): Adults were collected by Peter Kirby on 3/07/2011 by suction sampling on Sedge and Verrall's Fens. Last record was more than 25 years ago, so this confirms this scarce species (Nb) is still present at Wicken.

Anoscopus albifrons (Cicadellidae): We had only three records of this scarce (Nb) species until the work of Blaise Martay and Peter Kirby (2008-11), who have found it to be widespread across the old Fen and the restoration land (28 locations).

Arthaldeus arenarius (Cicadellidae): A recent addition to the UK list, and new to Wicken when found by Peter Kirby on 3/07/2011 at Verrall's Fen: Compartment 5 by suction sampling.

Dikraneura variata (Cicadellidae): A common species but new to Wicken when found at Verrall's Fen: Compartment 2 on 30/09/2008 by Blaise Martay as part of her PhD survey work.

Forcipata forcipata (Cicadellidae): New to Wicken when adults were collected by Peter Kirby on 3/07/2011 by suction sampling on Sedge and Verrall's Fens.

Megophthalmus scabripennis (Cicadellidae): A common species but new to Wicken when adults were collected by Peter Kirby at four sites from the ancient fen, to Adventurers' Fen and onto the restoration site of Baker's Fen, by suction sampling on 3/07/2011.

Delphacodes capnodes (Delphacidae): A scarce species (Nb), new to Wicken, found on Adventurers' Fen: Compartment 46 by Peter Kirby, by suction sampling on 3/07/2011. The local *Delphacodes venosus* was found close by on the same day, the first record since pre-1950.

Florodelphax paryphasma (Delphacidae): This very scarce species (Na), new to Wicken, was found on Adventurers' Fen: Compartment 46 by Peter Kirby, by suction sampling on 3/07/2011.

Kelisia punctulum (Delphacidae): A relatively common species but new to Wicken when taken by Peter Kirby, close to the Adventurers' Fen Mere, by suction sampling on 3/07/2011.

Megalonotus antennatus (Lygaeidae): A scarce species (Nb), new to Wicken, found on Baker's Fen: Compartment 101 (TL562698) by Peter Kirby, close to a pond, by suction sampling on 3/07/2011.

Myrmedobia distinguenda (Microphysidae): A local species, new to Wicken, found on Verrall's Fen: Compartment 5 (TL553701) by Peter Kirby by suction sampling on 3/07/2011.

Lygus pratensis (Miridae): A rare (RDB3) but spreading species, re-discovered at Wicken after 75 years by Peter Kirby when found by sweep-netting on Verrall's Fen: Compartment 5 (TL553701) by Peter Kirby on 3/07/2011.

Trigonotylus ruficornis (Miridae): A common species of dry grassland but new to the Wicken list when swept from a dry part of Adventurers' Fen: Compartment 62 by Peter Kirby on 3/07/2011.



Three interesting Hemiptera (true bug) species recorded at Wicken recently.

Left - *Megalonotus antennatus* : Centre - *Lygus pratensis* : Right - *Notonecta maculata*.

Coleoptera (Beetles)

Almost 2000 species records were added to our beetle database from surveys in 2008 to 2012, plus a few more from specimens in Museum collections and published in the older literature. Perhaps a surprise was the number of new to Wicken or first record for many years of the Carabidae (ground beetles), a beetle family that is usually well-worked on sites such as Wicken.

Agonum nigrum (Carabidae): A new scarce (Nb) ground beetle for the Wicken lists, when one was found in pitfall traps collected on 30/06/2008 set both in Adventurers' Fen, Compartment 47 and in Baker's Fen, Compartment 104 by Blaise Martay.

Amara bifrons, *Amara apricaria* and *Amara convexiuscula* (Carabidae): Widespread ground beetles, but these three species had their first Wicken record for 50 or 80 years when found in pitfall traps on 31/07/2008 by Blaise Martay, in fields on Hurdle Hall Farm (TL5667), a dryish site in the early stages of being restored to grassland from arable crops.

Anisodactylus binotatus (Carabidae): Numerous records by Blaise Martay in pitfall traps in 8 locations on the old Fen and restored land in 2008 of this ground beetle, but surprisingly these were the first for 80 years.

Harpalus tardus (Carabidae): Numerous specimens noted by Blaise Martay in pitfall traps in 6 locations across the restored land in 2008. A widespread, common ground beetle, and a surprise that this is a new species for the Wicken list.

Ophonus (Metoponus) puncticeps (Carabidae): A new species for the Wicken list, when swept on 29/06/2011 by Peter Kirby, in Adventurers' Fen, Compartment 62.

Ophonus (Metoponus) melletii (Carabidae): First record for 80 years, in pitfall traps in Baker's Fen: Compartment 102, 31/07/2008 by Blaise Martay.

Stenolophus teutonius (Carabidae): First record for 80 years of this scarce (Nb) ground beetle, when found in pitfall traps on 31/08/2008 set in Hurdle Hall Farm (TL5667), by Blaise Martay.

Synuchus vivalis (Carabidae): A common ground beetle but new to the Wicken list when found on 4 sites of the restoration land of Baker's, Burwell and Hurdle Hall by Blaise Martay in 2008.

Acrotrichis sericans and *Acrotrichis atomaria* (Ptiliidae): First Wicken records for more than 40 years when found in sedge heaps during the Bioblitz (21/07/2012) by R.J. (Bob) Marsh.

Nephanes titan (Ptiliidae): Sieved from piles of cuttings in two places on the Sedge Fen on 21/07/2012 by R.J. Marsh. Excellent to find, as this is Britain's smallest beetle at 0.4 mm !

Oulema obscura (Chrysomelidae): A new species for the Wicken list when adults were swept from beside a pond in Cmpt 101, on Baker's Fen, 29/06/2011 by Peter Kirby.

Cryptophagus distinguendus (Cryptophagidae): First record for 85 years, found by sieving a heap of cuttings in Compartment 11 of the Sedge Fen, on 21/07/2012 by R.J. Marsh.

Malthinus frontalis (Cantharidae): A new scarce (Nb) soldier beetle for the Wicken lists, found by sieving a heap of cuttings in Compartment 11 of the Sedge Fen, on 21/07/2012 by R.J. Marsh.

Amphimallon solstitiale (Scarabaeidae): A surprise to find that this widespread species in southern England, the Summer Chafer, was new to Wicken Fen lists, when Rachel Beaumont, one of the Wicken education staff, found a specimen during the BioBlitz (21/07/2012).

Rhamphus oxyacanthae (Curculionidae): A weevil whose larvae form tiny blotch mines in hawthorn. A new species to Wicken, when swept on the Sedge Fen 21/07/2012 by R.J. Marsh.

Protapion nigrirarse (Apionidae): First Wicken record for c. 90 yrs. Swept in a clearing in the carr in Cmpt 15 of the Sedge Fen on 21/07/2012 by R.J. Marsh.

Quedius balticus (Staphylinidae): An excellent find by Peter Kirby of this very rare (RDB1 Endangered) rove beetle, taken in a suction sample from beside the Brickpit Ponds, Adventurers' Fen (TL552698) on 3/07/2011. On the NBN there are numerous records in Warwickshire and the north-east, but these are probably data entry errors, for this is a very rare species of fens.

Oxypoda haemorrhoea (Staphylinidae): First Wicken record for c.85 yrs. By sieving heap of cuttings just off pathway, Cmpt 11, on 21/07/2012 by R.J. Marsh.

Mycetoporus clavicornis (Staphylinidae): A new rove beetle for the Wicken lists, found by sieving a heap of cuttings in Compartment 11 of the Sedge Fen, on 21/07/2012 by R.J. Marsh.

Hymenoptera, Parasitica.

Several Ichneumonidae species (small parasitic wasps) new to the Wicken lists were discovered by Gavin Broad and Mark Shaw on their visit to Wicken Fen on 16th May 2011. These included, *Atractodes pauxillus*, *Polyaulon paradoxus*, *Collyria trichophthalma*, and *Dusona myrtilla*. In the related family Braconidae, *Hygroplitis pseudorussatus* and *Ontsira ignea* were new to the Wicken list. Very few people investigate and record these species, so in addition to these new species, almost every other species they found were the first site records since before 1940 !

Hymenoptera, Aculeata

The Agriland Project by the University of Reading set out several water traps across the old fen in summer 2011 to catch bees and wasps, and made a number of useful discoveries. For example, they found two females of the RDB Vulnerable wasp *Rhopalum gracile* (Sphecidae) on 21/06/2011, confirming the presence of this rare species, last recorded at Wicken Fen in 1998, 1973 and prior to that 1929 ! The record of the small bee *Osmia caerulea* (Megachilidae) was the first on the Fen for 100 years. The team made records of nine bumblebees species; *Bombus hortorum*, *Bombus lapidarius*, *Bombus lucorum*, *Bombus pascuorum*, *Bombus pratorum*, *Bombus rupestris*, *Bombus sylvestris*, *Bombus terrestris* and *Bombus vestalis*.

We can also add *Bombus hypnorum*, the tree bumblebee, to the Wicken list. This species has recently arrived in the UK from Europe (in 2001), and is spreading. Peter Kirby netted one in Adventurers' Fen on 29/06/2011 and Rachel Beaumont photographed a few on 21/07/2012.

John Dawson found the nationally scarce (Na) Black-headed Mason Wasp *Odynerus melanocephalus*, by the boathouse on 22/07/2012, during the BioBlitz weekend, a new rare species for Wicken Fen.

Peter Kirby found the small ant *Myrmica scabrinodis* at several places across the NNR in 2010-11, thanks to the use of a suction sampler. Prior to this we had only one, old 1928 record. The same is true for the ant *Myrmica ruginodis*, although this one was also found on Baker's Fen. Peter's 2011 survey also added the small bee *Lasioglossum morio* (Halictidae) to our lists with records from Adventurers' and Baker's Fens.

Diptera (true flies)

Hydrophorus viridis (Dolichopodidae): A new rare species for the Wicken Fen list, found by Peter Kirby sweep netting in Cmpt 62 of Adventurers' Fen (TL557692) on 29/06/2011.

Tephritis matricariae (Tephritidae): New to Wicken lists, an uncommon fly, swept from Verrall's Fen by Peter Kirby, 3/07/2011.

Platypalpus ciliaris (Hybotidae): New to Wicken lists, suction sampling, by Peter Kirby alongside a ditch on Adventurers' Fen, 3/07/2011. Probably a widespread species.

Volucella inanis (Syrphidae): This large hoverfly, which mimics large wasps, has been recorded several times on the Fen since 2003 and was seen by several visitors feeding on bramble flowers during the BioBlitz. It is still rated as nationally scarce, but is clearly spreading northwards and expanding its range.

Eumerus funeralis (Syrphidae): Only the second ever Wicken record of this small hoverfly (last was 25 years ago) when Peter Kirby found it in Baker's Fen on 29/06/2011.

Limonia modesta (Limoniidae): A new crane fly for the Fen when this species turned up in a suction sample taken from by the Mere by Peter Kirby on 3/07/2011, most commonly found in the west and especially in Wales.

Cnodacophora sellata (Micropezidae): A new species for Wicken when swept from Adventurers' Fen: Brickpit Ponds on 29/06/2011 by Peter Kirby. A few widely scattered records for this species are on the NBN, and this may be the first for Cambridgeshire.

Oxycera nigricornis (Stratiomyidae): Peter Kirby found this soldierfly, sometimes called the Delicate Soldier, on the Sedge Fen on 3/07/2011, which was the first record of this species at Wicken for 120 years! Twelve species of Soldierfly were recorded in 2011 at Wicken.



The soldierfly *Oxycera nigricornis* (left); The tree bumblebee *Bombus hynorum* (centre); The large hoverfly *Volucella inanis* (right).

Mollusca (Snails)

Columella edentula (Toothless Chrysalis Snail): A widespread and common snail species, but new to our Wicken lists when Peter Kirby found it in a suction sample from Verrall's Fen: Cmpt 5 on 3/07/2011. *Acanthinula aculeata* (the Prickly Snail), was also present in the same suction sample, and is also a new snail species for Wicken. Quite a surprise, two new snail species in the same place, same day, on the old Fen! Suction sampling does a good job.

Wicken Fen data on the NBN

In March 2012, we further updated our Wicken Fen dataset species on the NBN Gateway. **There are currently 73,500 records of more than 8,700 taxa (species and subspecies).** All of these records can be viewed and downloaded via the NBN. The NBN Gateway can be found at: www.searchnbn.net

You can find the Wicken dataset by working through the Browse by Sites link (go to National Trust sites) on the NBN Gateway home page or by following the link at the bottom of this page on our website: http://www.wicken.org.uk/wildlife_species.htm

We hope to do a further update to the Wicken Fen dataset on the NBN later in 2013.

We welcome feedback on our species data, such as new species, corrections, and information on our older data that may need to be reviewed in the light of modern taxonomic or distribution information. If anyone would like a **list** of the Wicken records for a taxon group, such as Moths, Beetles, Vascular Plants etc. supplied as an Excel file, this is easily done. Just contact Stuart Warrington by email.

Carrying out a Research Project at Wicken Fen

If you wish to carry out research at Wicken Fen, you will need to have the support of the Wicken Research and Recording Group and you must get a permit.

For research proposals, please use the form provided in the research section of the Wicken Fen web at <http://www.wicken.org.uk/research.htm> Then email it to: wfresearch@nationaltrust.org.uk

The R&R Group will consider the research proposal and get back to you as soon as we can. We like to have the site used for research (there have been 20 students projects (BSc, MSc, PhD) at Wicken in the last 4 years). However, we do need to co-ordinate and manage the research work. We also have ideas for useful projects and can guide you to good sites on the property, provide maps etc. We have risk assessments available if you wish to work on areas where we have grazing animals.

Recording species at Wicken Fen

Please do come to Wicken Fen to observe and record its flora and fauna. Don't assume that because the site has such a long history of recording that nothing new or unusual can be found. This Newsletter has highlighted a number of species found new to the property or the first record for many decades. Also, the Reserve is getting larger and it is very interesting to find out what species occur on the restoration land, so do look at the new land as well as the classic fen.

We can send you a Map of the site too, to help you get around and find the new areas of habitat.

Please get a Permit

You will need a permit to use a trap, net or collect specimens, but these are readily obtained, with the understanding that you will send us your records. To get a Recording Permit, email (or write) with your address and what you want to do study (eg 'Moth trapping', 'collect Coleoptera and Hemiptera using a sweep net'), to either:

Karen Staines, Administrator, Wicken Fen. Address and telephone number on p1.

Email Karen.staines@nationaltrust.org.uk or Email stuart.warrington@nationaltrust.org.uk

Sending in your Records

The key information we need is:

Species Name, Location, OS Grid Ref., Date, Recorder.

It is also useful to add Comments (exactly where found, the habitat, notes on the behaviour etc.), Determiner (if different to the recorder), and Numerical Abundance (how many). The ideal Format for us is an Excel Spreadsheet, with each individual record on a separate line, with separate columns for Species Name, Location, Grid Ref., Date, etc. This can then be emailed to wickenfen@nationaltrust.org.uk or to stuart.warrington@nationaltrust.org.uk

If you don't have access to email and computers, than a typed or hand-written list is quite acceptable.

With Moth records, it is very useful if the Bradley Checklist Code number can be included.

| | | | | | | |
|---------------|-----------------------|----------|------------|------------|--------------------|----|
| Small Copper | Compartment 22 | TL562706 | 15/07/2005 | John Smith | Basking on path | 4 |
| Gatekeeper | Sedge Fen Drove | TL556706 | 15/07/2005 | John Smith | 15 over 100 metres | 15 |
| Speckled Wood | St Edmunds Fen | TL564702 | 15/07/2005 | J.B. Jones | A few noted | |
| Peacock | Burwell Fen: Cmpt 208 | TL563689 | 15/07/2005 | J.B. Jones | 5 around thistles | 5 |

| | | | | | | |
|------|------------------|-----------------|----------|------------|------------|---|
| 1634 | Lackey | Sedge Fen Drove | TL556706 | 10/06/2006 | C.C. Brown | 5 |
| 1640 | Drinker | Sedge Fen Drove | TL556706 | 10/06/2006 | C.C. Brown | 1 |
| 1713 | Riband Wave | Sedge Fen Drove | TL556706 | 10/06/2006 | C.C. Brown | 1 |
| 926 | Phalonia maniana | St Edmunds Fen | TL564702 | 11/06/2006 | C.C. Brown | 1 |

Wicken on the Web

Watch 'Bill Oddie's goes wild at Wicken' - an evening stroll in 2002 through Wicken Fen reveals marsh harriers and muntjac deer.

http://www.bbc.co.uk/nature/life/Western_Marsh_Harrier#p0081gbs

Read John Hughes' blog about his work as a Ranger on the Wicken Fen Vision

<http://wickenvision.blogspot.co.uk/>

Laura Barton and Felix Clay travel to Wicken Fen to search for the first cuckoo of spring (2 minutes, shot in April 2009).

<http://www.guardian.co.uk/travel/video/2009/apr/14/bartons-britain-wicken-fen>

Classic edition of the BBC Radio 4 programme 'Open Country' featuring Norman Moore, one of the pioneers of modern nature conservation, who has a long relationship with Wicken Fen. He talks to Helen Mark about Wicken and his passion for dragonflies.

http://www.bbc.co.uk/radio4/factual/opencountry_20070915.shtml





A common crane landed in Baker's Fen at Wicken on 16 May 2012 (Photo by Richard Nicholl).



Mike Dilger of 'The One Show' visited Wicken Fen on 12 June 2012.

Martin Lester, Wicken Fen's Countryside and Community Manager is on the left.