

ADASTRA

2011



An annual review
of wildlife recording in Sussex

published by
The Sussex Biodiversity Record Centre

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by the

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Cover picture: wool carder bee, *Anthidium manicatum*. Drawn by: Steven Falk.

A foreword from Henri Brocklebank, manager of the Sussex Biodiversity Record Centre

Thank you to all our contributors who have somehow managed to find the time in their busy lives to write their articles for this publication. They are always informative, often inspiring and sometimes really rather poetic. This year's Adastra has left a bitter sweet taste for me. There is incredible activity going on, and in such detail as we discover more and more about our biodiversity. However to temper this Colin Pratt states in his article that in his experience a moth trap now (and he names two very heavily recorded locations as way of example) will catch just a third of the moths that it would have caught in 1970. This shocking statistic unfortunately tallies with anecdotal references to the plummeting of aquatic invertebrate numbers that we often hear in our Committee for Biological Recording meetings. This highlights as always how crucial it is to bind biological recording into the Conservation movement, where for the first time, following this year's Natural Environment White Paper, the valuing of our natural environment is being taken more seriously by sectors other than our own. There is still a long way to go, but the biological recording community have and will play a hugely important role in the change in the political and moral tide.

We are privileged at SxBRC to work with so many inspiring recorders and recording groups. As you can gather from this booklet the pace of recording in Sussex continues to increase in momentum, and keeping up with you all is quite literally a full time job (for several people). We try to keep on top of data coming into the Record Centre but all the time very aware of some of the datasets that are not coming into the Centre. Each year we uncover more key historical datasets and get access to more surveys that have been carried out by individuals, or organizations that are not associated with the Sussex recording movement. There are discussions taking place nationally to try and capture some of the data coming from the large national consultancies and from some of the government's own agencies. National data flow issues can be very complex and like wading through treacle but my overall feeling is that progress has been made in 2011 not least by the fledgling Association of Local Record Centers. Which has made very impressive progress in its first couple of years of existence.

January 2012 marks a very significant departure for the Sussex recording community. After over 35 years Dr. Gerald Legg is retiring from the Booth Museum of Natural History in Brighton. He has been cataloguing the collections and promoting their use through numerous changes in Council funding and management. I would like to take this opportunity to thank him for all the support he has provided SxBRC over the years. Of course retiring from his day job means that we will probably see more of him as retirement for naturalists generally means that they have more time to pursue their interests. We expect to see a boost in our pseudoscorpion records! Meanwhile he is going to continue managing the marine recording database.

The Adastra Seminar and publication mark the end and beginning of the Sussex Biodiversity Record Centre year. This year I have really marveled at the tenacity of the Record Centre team as they continue to unravel complex data issues in order to get the best quality data out to our users. Of course the more you dig, the more you find, but over the year we have made some really significant steps in improving the Record Centre service to data suppliers like yourselves and data users. It is by no means a perfect system and we welcome feedback, comments and ideas from anyone that we work with. We can never take for granted that recorders wish to share their data with us and we appreciate not just the sharing of information, but the time you spend working with us and the time you spend helping us solve technical and conceptual problems. We hope that you all feel a sense of ownership towards the Sussex Biodiversity Record Centre and wish to carry on working with us to highlight the importance, uniqueness and vulnerability of our local flora and fauna.

January 2012

FLORA - VASCULAR PLANTS

by county flora recorders Paul Harmes (East Sussex) and Mike Shaw (West Sussex)

This year we have succeeded in the targeted recording for the new Flora of Sussex, by getting practically all of the complete tetrads, with less than 250 records, up to a point between 250 to 300 records. Thanks to the focused efforts of the Sussex Botanical Recording Society (SBRS) membership, we now have over 1000 of the 1046 tetrads, with in excess of 250 records.

Recording will continue for at least one more year and in 2012 will focus more on ensuring all tetrads have been visited a minimum of three times throughout the recording season and that all different habitat types in each tetrad have been addressed. Declining, as well as under-recorded species will also be targeted.

Thanks to the hard work of Roy Wells, with the expert help of Judith Linsell, the SBRS website is now, once again, fully functional. All new members who do not have access rights to specific areas of the site should contact Roy for a password. (physalis@hotmail.co.uk).

Interesting finds this year in East Sussex include **common butterwort** *Pinguicula vulgaris* has been re-found on Ashdown Forest. It was last recorded with certainty in 1933. A particularly interesting plant is **Mediterranean nettle** *Urtica membranacea*. This has been found in three separate locations, Brighton, Lewes and Eastbourne. The recent reed-bed works at Rye Harbour Nature Reserve have caused a significant increase in **lesser water plantain** *Baldellia ranunculoides*, and there have been a number of records for the hybrid **welted thistle x musk thistle** *Carduus x stangii*. Near Wivelsfield, **purple small reed** *Calamagrostis canescens* has been found in a wet ditch only a short distance from where it had been previously found in the 1960s. Finally, there have been several new alien species recorded. These include, **Egyptian clover** *Trifolium alexandrianum* and **tall nightshade** *Solanum chenopodioides* in Brighton, and **beautiful cotoneaster** *Cotoneaster amoenus* and **Armenian star of Bethlehem** *Ornithogalum bajastanicum* in Eastbourne.

In West Sussex, one of the most exciting finds has been **slender tufted sedge x tufted sedge** *Carex x proluxa*. In the spring of 2010 Mike Shaw went in search of old records for **tufted sedge** *Carex elata*. He passed specimens of plants he found to Paul Harmes, who, upon examination felt that they could be a hybrid. Further specimens were collected in 2011 by Mike, and sent to the BSBI Referee, who confirmed that the specimens were of *Carex x proluxa*. The excitement comes from the fact that this increases the UK populations from 5 to 6 localities! Other interesting finds include a new location for **cowbane** *Cicuta virosa*, **Bythnian vetch** *Vicia bithynica* in Portslade, **dune fescue** *Vulpia fasciculata* at Elmer and **perennial centaury** *Centaureum scilloides*, near Cowfold. Also three new dandelions, *Taraxacum ekmanii* and *Taraxacum lamprophyllum* at Midhurst and *Taraxacum wallonicum* at Bignor and several new bramble species, including *Rubus prolongatus* north west of Chichester and *Rubus criniger* from Shopwyke.

ORCHIDS

ORCHIDS IN SUSSEX, 2011

David C. Lang, recorder for orchids in Sussex.

Reading the report I wrote last year, I am struck by the similarities of 2011, when once again a bitter winter spell followed by a relative drought in early summer wrecked havoc on our orchids. However, there were one or two bright spots.

Early spider orchid (*Ophrys sphegodes*) once again had a poor season, flowering in small numbers. The three-year cycle of reproduction from seed to flowering will be severely affected if we continue to have poor seasons.

Green-winged orchid (*Orchis morio*) flowered relatively well in its best sites and produced a newly recorded colony of 1,000 + at a confidential site in the north-east of the county.

Fragrant orchid (*Gymnadenia conopsea*) flowered poorly, but the two newly recognised species (formerly sub-species) *G. borealis* on Ashdown Forest and *G. densiflora* on the Downs did reasonably well.

Musk orchid (*Herminium monorchis*) flowered poorly. A very shallow-rooted species, it dislikes drought conditions.

Bird's-nest orchids (*Neottia nidus-avis*) failed to appear at most sites but was recorded from a new location in Brede High Woods 9 km (5½ miles) north of Hastings.

Greater butterfly-orchid (*Platanthera chlorantha*) once again bucked the trend and flowered superbly (178 spikes) at Wolstonbury and with some pleasing new sites also recorded.

Bee orchid (*Ophrys apifera*) had a season of mixed fortunes, with few recorded except near the visitor centre at Wakehurst Place where 102 spikes were counted.

Fly orchid (*Ophrys insectifera*) had a very poor season. The last 15 years have seen a steady decline, due both to weather conditions and to changes in, and lack of, woodland management. One can foresee the species disappearing from Sussex with a couple of decades.

Lizard orchid (*Himantoglossum hircinum*) failed by the river Ouse, but flowered again in the three sites previously recorded.

Lady orchid (*Orchis purpurea*) flowered for the fourth year running at Beachy Head.

Burnt orchid (*Orchis ustulata*). Once again very poor season, definitely affected by drought, with one prime site having only 12 in flower where the count can often exceed 2000. Only one site out of sixteen for the late-flowering form var. *serotina* produced any flowers at all.

Pendulous-flowered helleborine (*Epipactis phyllanthoides*) flowered sparsely in all its known sites.

Broad-leaved helleborine (*Epipactis helleborine*) did moderately well, following a brief wet spell and in Friston Forest one colony produced a great display of more than 300 flowering spikes.

Violet helleborine (*Epipactis purpurata*). An intensive search by Jacqui Hutson produced six new sites and elsewhere it flowered in small numbers.

Common spotted-orchid (*Dactylorhiza fuchsii*) flowered in reduced numbers in most sites. However, at Wakehurst Place one plant produced a spike 96 cm tall – a national record!

Looking back at my own orchid records since 1949, evidence of big changes in our national orchid populations is clear. How much is due to climate change, and how much due to changes in woodland and land management is difficult to evaluate. Most species are reduced both in number of recorded sites and in the size of populations, and localised extinction of species in southern counties has occurred, with the focus on chalk downland and the loss of fen and bog habitat. Several species are showing a distinct northward spread in their distribution, particularly the lizard orchid, which is reappearing in localities from which it disappeared following the bitter winters of the early 1940s. Its reappearance in precise localities where it was last seen flowering more than 60 years ago raises the possibility of persistence in a vegetative state underground. Persistence as seed is highly unlikely, given the minute size of orchid seeds and the paucity of ectosperm in the seed.

Black poplars. Sussex is now known to be host to 38 mature native black poplars (*Populus nigra* ssp. *betulifolia*) made up of 5 genetic clones. A few further mature trees are being investigated as potential black poplars at the time of going to press. Around 6000 young black poplars have been planted throughout the county, including a number in nearly ten hectares of restored floodplain woodland. The Sussex Black Poplar Working Group are keen to speak to landowners who wish to plant areas of floodplain woodland – the natural habitat of the black poplar. Contact: fransouthgate@sussexwt.org.uk; 01273 497555

BRYOPHYTES (MOSESSES, LIVERWORTS & HORNWORTS)

by Howard Matcham, county recorder for Bryophytes

The end of June 2011 and I had completed the Sussex Atlas database comprising some 9,500 post-1960 tetrad and hectad bryophyte records; as I have mentioned previously in AdastrA 2010, page 6, the database is a compilation of first tetrad and hectad records not all records of bryophytes recorded, these are in the tens of thousands. The database was sent to SxBRC who kindly agreed to pass them on to the NBN Gateway where they were published on 14th September 2011. SxBRC have also agreed to the British Bryological Society accessing my database for the forthcoming second edition of Atlas of Bryophytes of Britain and Ireland.

For a well worked county such as Sussex, new vice-county records are few and far between but this year has been an exception and in April I found the liverwort *Lophocolea fragrans* (fragrant crestwort) on flints at Goodwood in secondary woodland where literally thousands of flints cover the woodland floor and dozens are covered with this minute species. Elsewhere in southern England this species can be seen under dense scrub at Fairlight Glen in East Sussex, small colonies exist on the Isle of Wight and at Portland in Dorset.

The moss *Myrinia pulvinata* (flood-moss) has been discovered by Tom Ottley at New Bridge, Billingshurst growing on the trunks of oak and ash by the side of the partially restored Wey and Arun Canal which at this point is above the adjacent river Arun, there is very little flow in this part of the canal caused by the incomplete nature of the restoration, however there is considerable silt on the trunks of the trees which has been carried down by the adjacent river; this is an incredible find as apart from a record from Dorset its next closest sites are in Monmouthshire and Herefordshire. There is a 1913 record from Barcombe Mill on the river Ouse in vice county 14, East Sussex, collected by W.E. Nicholson and deposited in the herbarium at Cambridge University (CGE), two collections are in the herbarium and they were subsequently checked and are correctly identified. This moss is very similar to *Leskea polycarpa* (many-fruited leskea) and may well have been overlooked as both grow in the flood zone of rivers and canals. My thanks to Tom for supplying me with details of his find.

At the beginning of December the British Bryological Society southern group visited Graffham Common and submerged in a deep ditch Peter Jones found a large thallus with markedly crisped lobes, this appeared to be a hornwort, plants which normally grow on soil. It was sent to the British Bryological Society Recorder for hepatics and proved to be *Anthoceros punctatus* (dotted hornwort) not previously recorded from vice county 13, West Sussex, and a tremendous discovery. I have taken material to the Natural History Museum where Professor Jeff Duckett and Dr Silvia Pressel are working on hornworts on a worldwide basis studying the relationship between species and associated endophytic fungi¹.

Checking a stubble field at Boxgrove I rediscovered the hornwort *Anthoceros agrestis* (field hornwort) in exactly the same spot I had found it new to the county in 1992. I have looked for it every year since 1992 without success as stubble, a requirement, has always been quickly ploughed in after harvest during the intervening years. Spores obviously stay viable in this species for a long time.

MICROFUNGI (& SOME MACROFUNGI) FROM EAST SUSSEX AND ELSEWHERE

by Martin Allison

2011 will be remembered as the year of the fungal invasion! Late autumn provided perfect conditions for mass fruiting of several common species. In particular, there were carpets of **Butter Cap** *Collybia butryacea* everywhere one looked, whilst the large and impressive **Trooping Funnel** *Clitocybe geotropa* was doing just that, in long lines of fruit bodies alongside roadsides and woodland edges. From a culinary point of view, **Ceps** *Boletus edulis* were much in evidence throughout the season, along with their less tasty but equally frequent *Lecinum* relatives.

¹ Endophytes are plants that live inside other plants, often beneficially to both species.

I was restricted in travelling this season due to a frustrating back problem, but did manage several outings in Sussex and West Kent, whilst keeping reasonably close to home. My local patch at Broadwater Warren produced widespread records of **Violet Webcap** *Cortinarius violaceus* in September, reported last year in Adastras as a rare Red Listed species. After a flurry of records this year across Sussex and Kent one wonders whether it has just been waiting for the right conditions. This is a perennial problem in assessing the rarity criteria of a particular fungus.

“Exotic” fungi featured highly this season. **Devil’s Fingers** *Clathrus archeri* appeared at Scotney Castle, where it is well-known, but of more interest was a record of **Red Cage Fungus** *Clathrus ruber* from a garden in Portslade. The latter is by far the rarer of the two Cage Fungi in Sussex, with only a single previous record on the database. Whilst Devil’s Fingers is thought to have been introduced from Australia or New Zealand, Red Cage Fungus is naturally increasing from its origins in the Mediterranean.

“Aliens” are often to be found on mulch heaps, or at least lurking amongst the woodpile! The striking **Redlead Roundhead** *Leratiomyces ceras* appeared in large numbers on a mulched and grass-seeded verge at Crowborough Hospital in October and continued to thrive there for several weeks. It was joined on occasion by two other uncommon agarics, *Agrocybe arvalis* and *Melanoleuca brevipes*.

Staying with the woodchip theme, Nick Aplin of the Sussex Fungi Group supplied the following species of interest, recorded from Tilgate Park & Forest. *Leucoagaricus meleagris*, *Melanoleuca verrucipes* and *Agrocybe rivulosa* are woodchip species and considered alien introductions. They are all County 1st records, including the latter despite now being widespread in the UK. Other Tilgate records from Nick are the agarics *Psathyrella lutensis* and *Conocybe aurea* as County 1sts, and Holly Parachute *Marasmius hudsonii*, an intriguing Red List species found only on leaves of Holly *Ilex aquifolium*, and sporting unique red-brown hairs on the cap.

Moving on to “micro-fungi”, Nick supplied the following excellent records. The Red List *Caloscypha fulgens*, and new County records *Crocioreas amenti* and *Arachnopeziza obtusipilata* were all recorded from Tilgate. The Red List *Chlorenchocelia versiformis* was found at Hawth Wood, Crawley. To top those, the coprophilus pyrenomycete fungus *Trichophaeopsis tetraspora* was a first for Britain at Stedham Common. This is a curious small cup fungus with a fringe of hairs resembling eye-lashes, and occurring on dung.

Finally, it was exciting indeed to hear from Nick of a potential newly described species of *Inocybe* at St Leonard’s Forest!

Jon Need of the Sussex Fungi Group recorded *Hydropus floccipes* from Ebernoe Common. This unassuming little fungus is possibly overlooked, with this find a first for Sussex. Iona Fraser records on Ashdown Forest, and she reported several finds of **Violet Webcap** this year, alongside the pretty *Lactarius citriolens*, another new County record. Dave Monk sent some colourful photos of **Scarlet Elf Cup** *Sarcoscypha austriaca*, discovered at Brede High Wood in March. It is always a welcome species on a spring foray, with its bright colouration and early season appearance.

If I might cheat a little, *Entoloma nitidum* was found during a Kent Field Club visit to Pembury in October. This attractive but scarce fungus has steely blue colours contrasting strikingly with the white then pale pink gills. Unfortunately this record is just over the border in Kent but worth watching out for in conifer woods in Sussex in 2012. It is documented as occurring on Ashdown Forest, but does not currently appear on the Sussex database.

MICROFUNGI (& SOME MACROFUNGI) FROM WEST SUSSEX AND ELSEWHERE

by Howard Matcham

“Titter thee not,” as the late, great, Frankie Howerd would have espoused; for I have had my nose immersed within the dung heap, more precisely, a surfeit of deer pellets, horse middens and individual heaps of lovely excreta and what a jolly lot of fungal delights were sniffed out, excavated with my trusty trowel, scraped off with a knife or dug out with my finger nails. Lots of ‘gloop’ in moist chamber cultures decorate shelves and bookcase ledges in my study, quietly producing seldom recorded Sussex fimicolous taxa. Just getting out of bed in the morning is such fun,

greeting my dog, skipping into my study checking on the previous night's fungal results, and then making my wife a cup of tea!

After the miserable December of 2010 fungi were a considerable while in emerging from any substrate and it was not until April that I found anything of interest. A conglomerate of deer pellets in woodland had the common orange discomycete *Cheilymenia granulata* which is extremely unusual as this species is normally confined to cattle dung, I can only assume that as cattle were in a field immediately adjacent to the wood, deer were jumping the boundary fence and consuming grass with spores attached. A local bridleway is always a good source of horse dung in various stages of decay and I collect from here on a frequent basis with the dung covered with dozens of the minute *Thelebolus stercorus* with the single ascus containing about 1000 spores; early morning with dew on the grass is the time to spot phycomycetes on horse dung, when the dung appears to be covered in a white felt, this is usually *Pilaira anomala* with cylindrical sporangiophores elongating rapidly when the sporangiophore is ripe, placing it in contact with an adjacent grass blade; this summer I found the much less common *Oedocephalum pallidum* abundant on the horse dung deposited on one ride, this phycomycete covers the dung as mealy colonies, very attractive under the microscope.

At the end of April wandering through woodland I came across wet depressions in the woodland floor and decided to look at the small acrocarpous mosses growing within the depressions; while doing so I noticed a small orange discomycete that I assumed in the field to be growing on moss protonema and on looking at it under the microscope I was able to confirm that out of the four mosses in the collection the fungus was growing on the protonema of *Poblia lutescens* (Yellow Thread-moss). This convinced me that I had collected a bryophilous fungus, these are confined to growing on mosses and seldom recorded. I subsequently identified the fungus as *Octospora melina* as it had ellipsoid spores with coarsely verrucose walls and unique to the genus in Britain which has approximately 12 British species. Allowing the substrate of mud to dry I sent the collection to Brian Coppins at Kew who to my surprise replied that it was in fact *Octospora phagospora* new to Britain. This species is unique in the genus in auto digesting four spores leaving four remaining, yet when I had first looked at the specimen, asci contained eight spores as they had not yet auto digested, while drying and the asci maturing the auto digestion took place. I have published a short note on this species in the November edition of Field Bryology, No105, page 37, with a light microscope photograph showing four warted spores each containing a De Bary bubble².

Walking in the same wood later in the year during early August I turned over a Norway spruce *Picea abies* log and saw underneath on the spruce litter a beautiful blue-black felted resupinate fungus and looking at it microscopically in 2% KOH it turned an intense blue-green, puzzled, I perused my extensive literature and decided it was *Tomentella botryoides* which would be new to Europe. Sending it on to Kew it was initially thought to be this species but to be sure Martin Bidartondo very kindly DNA sequenced part of the collection and it was found to be a *Pseudotomentella* species possibly new to science! However, Alick Henrici to whom I sent the collection spent a day in the Kew herbarium checking *Pseudotomentella* species and the identity was found to be *P. atrofusca*. This species is new to Britain: a consolation for its not being my first species new to science. This particular spruce plantation has good colonies of **chanterelle** *Cantharellus cibarius*, **pale chanterelle** *Cantharellus ferruginascens* and **terracotta hedgehog** *Hydnum rufescens*. Graeme Lyons discovered *Agaricus macrocarpus* at The Mens, kindly identified by Vivien Hodge on Graeme's behalf; according to the fungus database mentioned above this species has only been found in West Sussex on one previous occasion.

During September the same plantation had good colonies of **grey coral** *Clavulina cinerea* which had been parasitized by the ascomycete *Helminthosphaeria clavariarum*. The conidial state is very conspicuous as it markedly blackens the stipe. Associated with *C. cinerea* was **crested coral** *C. coralloides*, distinctive in the much finer pointed branches and also *Ramaria flaccida* another coral fungus seldom recorded in Sussex. Also present was **ivory coral** *Ramariopsis kunzei*, another seldom recorded species.

Early October saw an explosion of Geastraceae with four species of puffball and the **collared earthstar** *Geastrum triplex* all in close proximity. **Soft-spined puffball** *Lycoperdon molle* is not often recorded in West Sussex and this is the sixth record, last recorded in 1999 and **blackish puffball** *L. nigrescens* is seldom recorded in either vice-county, the former possibly overlooked while the latter, if it is present, should be easily spotted. **Common puffball** *L.*

² A De Bary bubble is a conspicuous gaseous bubble in the centre of a spore. Ed.

perlatum and **pestle-shaped puffball** *Handkea excipuliformis* were exceptionally abundant in mixed, deciduous and conifer woodland.

The beginning of December the southern group of the British Bryological Society visited Graffham Common and even to those members who were not inspired by mycology the extent and varying species of fungi was immediately apparent, an absolute explosion of colour and species. I was able to turn over a few conifer logs and under one of these I spotted what I thought could be a yellow form of the common myxomycete *Ceratiomyxa fruticulosa* but microscopic examination quickly eliminated this species and in fact it was a collection of **prickle fungus** *Mucronella calva* apparently widespread and common in southern England but seldom recorded. The British Mycological Society Fungus Record Database of Britain and Ireland gives one previous record from 1967 for West Sussex and two recent (2005) records from East Sussex, the latter vice county is far better worked than West Sussex but a word of caution, the Fungus Record Database is far from being an accurate record of fungus discovery throughout Britain and Ireland and relies on individuals or fungus groups submitting their records directly to the convener, unlike the British Bryological Society that has a complete national coverage of county and vice-county recorders, referees for each British genus and a Recorder for hepatics and mosses, three volumes of vice-county 10km bryophyte distribution maps with a second edition in preparation and a Census Catalogue (2008) giving vice-county distribution for all species, updated electronically on an annual basis!

Patrick Roper sent me the following records from East Sussex all of which are new to the county or seldom recorded: *Peziza repanda* (palamino cup); *Cercospora scandens* on *Tamus communis* (black bryony) leaves; *Endophyllum semperivi* on houseleek, a rust fungus with very few British records (37); *Cercospora depazeoides* host specific on *Sambucus nigra* (elder) leaves; *Frommeella tormentillae* a rust fungi host specific on *Potentilla reptans* (creeping cinquefoil) and/or *Potentilla erecta* (tormentil) found in the Square Metre³; *Ramularia ajugae* on *Ajuga reptans* (bugle) found in the Square Metre; *Diplocarpon earlianum* on *Fragaria vesca* (wild strawberry); *Erysiphe berberidis* on *Mahonia aquifolium*

LICHENS

by Simon Davey, county lichen recorder.

Much of this year's attention to lichens, as in 2010, has been concerned with Parham Park, arguably the best example of a mediaeval deer park in the county. During the beginning of the year, a lichen survey was conducted in the park which found both good and bad news to report. The bad news is that a number of the finest old oak trees are diseased, and a few now have dried out bark on which the lichen flora is lost. The Sussex Wildlife Trust organised a recording day there in July and perhaps the most outstanding event of the year was the discovery of two thalli of the lichen *Caloplaca flavorubescens* on a small, but ancient, ash tree. This represented the first British record for this species since it was found in Western Scotland in 2007 during a Lichen Society field meeting. When the tree was looked at in July, the number of thalli had increased to about eight colonies. This tree had been studied by many lichenologists over the years, and it is most unlikely that this lichen would have been missed. It is a species that is now nationally rare and in the endangered category. Also on the tree in July *Caloplaca ulcerosa*, *Caloplaca phlogina* and *Caloplaca cerinella* were found.

The only Sussex record for *Caloplaca ulcerosa* had been on the interior of an ancient lime tree in Parham Park that has now collapsed completely. Neither *Caloplaca phlogina*, nor *Caloplaca cerinella* had been recorded in Sussex before. There is no doubt that Parham Park is a major site for the genus *Caloplaca*. *Caloplaca ferruginea* was first found by Francis Rose at Parham Park in the 1970s. This is a most unusual record for this species, the nearest site for which is in the New Forest. At Parham, it grows on a fine old oak on the main drive which is easily recognised by the distinctive patch of orange *Xanthoria parietina* on the trunk. In the past, there were several patches of *Caloplaca ferruginea* on the main trunk but most of these have gone. However, healthy colonies have now developed on the roots. It is hoped very much that this does not indicate that this important tree is diseased.

³ The Square Metre is a nine-year-old project in a country garden in Sedlescombe, East Sussex to study in as much detail as possible the ecology of one square metre and its immediate surroundings.

DRAGONFLIES AND DAMSELFLIES (ODONATA)

by Penny Green

We're still receiving records for 2011, but from anecdotal evidence I think we can say that dragonfly and damselfly numbers were significantly down this year. It would be interesting to see if the cold conditions during the last two winters' have affected recent colonisers such as the **small red-eyed damselfly** *Erythromma viridula* and the **red-veined darter** *Sympetrum fonscolombii* who are accustomed to much warmer climes.

The biggest news on the Sussex Odonata scene in 2011 was the discovery of a new species for Sussex, found on an East Sussex SSSI. Corey Cannon, an Msc Biodiversity Student at the University of Sussex, was carrying out a variety of surveys on different taxonomic groups, and on that day in particular a bird survey, when she realised that the conditions were perfect for Odonata recording. So, with net in hand, Corey 'spotted something very different looking indeed', caught it and managed to photograph it (at one point it climbed on to her finger for some profile shots!). Initially it was thought that it was a **common emerald** *Lestes sponsa* but once checked in the book, it turned out to be a new species for Sussex.it was a male **southern emerald** damselfly *Lestes barbarus* (above). Several searches were made after the discovery by Sussex dragonfly gurus, John Luck and Dave Chelmick, but it was not refound, neither were any females.



Emerald damselflies can be distinguished from other damselflies by the way that they rest with their wings half-spread. Close inspection is needed to tell the species apart, although common emerald is most likely. The diagnostic feature of the southern emerald is the bi-coloured pterostigma (the dark cell on the leading edge of the wing). Corey's photos show the two-toned pterostigma really well, even in black and white – so you can get your eye in to help find some more in 2012. The male that she photographed is a beautiful metallic green with a bronze sheen (which appears with age).

The southern emerald has only been known in the UK for a decade; the first record was of three males in Norfolk in 2002. One female was then recorded at the same location in 2003, and it was also recorded in Kent, at Sandwich Bay, that year. On the NBN Gateway there are also records for Bristol in 2006 and Suffolk in 2009. It is mainly a Mediterranean species but its numbers have increased recently in Netherlands from where it is thought it migrates to the UK. It appears to favour coastal sites such as dunes, although it has occurred inland.

So if you see an emerald damselfly in the coming years, be sure to look closely! Thanks go to Corey Cannon for the details of her find, and the use of her beautiful pictures

Don't forget to look on the BDS Sussex Group's website for sightings and field event details:

<http://www.webjam.com/bdssx> and please send your records in to pennygreen@sussexwt.org.uk or Penny Green, SxBRC, Woods Mill, Henfield, West Sussex, BN5 9SD. Thank you.

ORTHOPTERA (GRASSHOPPERS & CRICKETS)

In May 2011 Graeme Lyons added a new species to the Sussex list when he found a colony of wood crickets, *Nemobius sylvestris* in deep beech litter, close to the road, at Cowdray Park. The wood cricket has a rather patchy distribution in Britain that is hard to explain, as this insect does not seem to have particularly exacting habitat requirements. It is widespread and common throughout the New Forest wherever there are accumulations of reasonably dry leaf litter along warm sunny woodland edges and rides. Its distribution extends into neighbouring woodlands such as Whiteparish Common in Wiltshire and there are isolated colonies further west in Devon. On the Isle of Wight the wood cricket occurs at several sites that include wooded cliff edges. *Nemobius sylvestris* was added to the British list by J.C. Dale who found it among dry leaves in a gravel pit at Lyndhurst in the New Forest in 1820. John Curtis wrote that he had seen it for himself at the same spot, which suggests that this insect might have been more localised in those days, although naturalists are, of course, sometimes prone not to look much further when they have ticked off a species of interest.

In 1967 a colony of wood crickets was discovered at Wisley Common, Surrey close to the famous gardens. It seems likely that the Wisley insects were accidentally introduced with plants from Exbury Gardens. Since, 1967 the Wisley population has extended to include some neighbouring sites but it is still very localised. Overall, the history of the wood cricket in Britain suggests that it may actually represent a fairly recently introduced species that is still in the process of gradually extending its range. Wood crickets are flightless and can extend their range only at a walking pace unless accidentally or deliberately introduced. The easiest way to find them is in late summer when the males are calling. The song is a low purring sound audible even to those who have lost the ability to hear the high frequency sounds produced by many Orthoptera. Another technique is to target suitable habitat such as piles of dry leaf litter in dappled shade on woodland margins. By gently disturbing the leaf litter with a boot or stick it is often possible to see the crickets as they jump for cover.

BEES AND WASPS OF THE EAST SUSSEX SOUTH DOWNS

by Steven Falk

Steven Falk, formerly Senior Keeper of Natural History at Warwickshire Museum, is a freelance biodiversity consultant with an international reputation in two-winged flies (Diptera) and bees, wasps and ants (Hymenoptera Aculeata). He is also a talented wildlife artist (see cover picture). He lives in Kenilworth, Warwickshire, but has made many field trips to Sussex over the years. He can be contacted at: steven@sfalk.wanadoo.co.uk

For six years between 2003 and 2008, over 100 site visits were made to fifteen chalk grassland and chalk heath sites within the South Downs of East Sussex. The sites were: Black Cap, Birling Gap, Beachy Head, Castle Hill, Cradle Hill, Cuckmere Haven (the downs either side, not the levels), Deep Dean, Denton Downs, Frog Firle, Friston Hill, Lewes Downs, Lullington Heath, Mount Caburn, Seaford Head and Willingdon Downs. The choice of sites allowed a variety of downland conditions to be interrogated, including scarps of different steepness and orientation, a variety of vegetation types (including chalk heath and other areas affected by superficial deposits), a variety of management types and sites both on the coast and several miles inland.

As well as chalk grassland and chalk heath, surveying also included some arable margins, hedges and fallow areas adjacent to the study sites, but woodland and the interior of dense scrub was not recorded, nor any part of adjacent levels (which are currently subject of a separate study). Each site was recorded at least once during each month between April to August, so that all sites experienced a minimum of five visits, and sometimes more if a large site was involved or drought or poor weather had affected an earlier visit. The main recording technique was sweeping of different vegetation types and microhabitats with a long-handled insect net, supplemented by visual surveillance and targeted spot-capture of individual specimens. Early spring visits generally lasted 2-3 hours per site, but summer visits could last up to 8 hours to reflect the greater diversity of insect activity at this time of year.

This survey produced a list of 227 bee and wasp species and revealed the comparative frequency of different species, the comparative richness of different sites and provided a basic insight into how many of the species interact with the South Downs at a site and landscape level. Some very rare species were encountered, notably the bee *Halictus eurygnathus* Blüthgen which had not been seen in Britain since 1946 and was presumed extinct. This was eventually recorded at seven sites and was strongly associated with an abundance of greater knapweed, which seems to be the main British pollen source.

The very rare bees *Anthophora retusa* (Linnaeus) and *Andrena niveata* Friese were also observed foraging on several dates during their flight periods, providing a better insight into their ecology and conservation. *A. retusa* has a strong colony in the Hope Gap area and was found foraging as far as Seaford to the west and also taking advantage of the Cuckmere levels to the east, though most foraging was observed on downland of the Hope Gap and Seaford Head area. *A. retusa* males appear in April and forage avidly on ground-ivy. Females emerge a few weeks later and were observed visiting common bird's-foot trefoil, hound's-tongue, viper's bugloss and (on the levels) hemlock water-dropwort. Males visit similar plants at the end of their flight period and also slender thistle.

The information garnered for *A. niveata* was extremely useful, because little was known about this rare bee in Britain other than a liking for Brassicaceae flowers. It was eventually found at five sites, all featuring either charlock or hedge-mustard. Four of these sites had good populations strongly associated with flowery arable margins (usually rape). These observations suggest that the fate of this bee will be determined by the way farmers manage their arable margins rather than any management of the chalk grassland areas. Hopefully Higher Level Stewardship can be used to promote this bee plus the fine arable weed flora that the author observed in many areas (notably Denton Downs).

Sites were assessed using three criteria: 1. overall species richness, 2. the presence of rare species, and 3. the presence of habitat indicators (lime-loving 'calcicoles' and sand-loving 'psammophiles'). The richest site was Seaford Head with 121 species. It was also the best site for psammophiles but not especially good for calcicoles. The variety of soil conditions here, with sandy ground ranging through to chalk grassland, plus the structural complexity of the vegetation probably underpin this richness, and a number of species were only recorded from this site. The least rich site was Friston Hill beside Friston Forest with only 69 species. It also had the smallest number of scarce species. It is an area lacking structural variety, and may have been subject to agricultural improvement in the past as the flora is rather limited too. Cuckmere Haven had the largest number of scarce species (24 species of either Nationally Scarce or Red Data Book status) and Mount Caburn had the highest number of calcicoles.

The study revealed that, in addition to the character of the semi-natural grasslands present, the bee and wasp fauna is strongly influenced by the more intensively-managed agricultural landscapes of the Downs, with many species taking advantage of blossoming hedge shrubs, flowery fallow fields, flowery arable field margins, flowering crops such as rape, plus plants such as buttercups, thistles and dandelions within relatively improved pasture. There was evidence that the low coverage of unimproved chalk grassland on the South Downs today following much loss and fragmentation in the last century may have resulted in some serious declines of certain bees and wasps and several probable local extinctions. For example, Britain's largest mining bee *Andrena hattorfiana* (Fabricius), a species usually expected to be most frequent on large expanses of southern calcareous grassland with plentiful field scabious, was only found at two of the study sites, and only as singletons. Searches for Culluman's bumblebee *Bombus cullumani* proved fruitless. This is now regarded as long extinct in Britain, but some of the last records for it were in the Seaford area in the 1920s.

It is hoped that this study will stimulate more Sussex naturalists to check out bee and wasp assemblages, especially given the international concern for declining pollinators.

The full report, which is rich in photos of bees, wasps and their key habitats can be found at:
http://sxbrc.org.uk/publications/East_Sussex_Bees_Wasps_Survey_Falk_2011.pdf

BEETLES (COLEOPTERA)

by Peter Hodge, Sussex Coleoptera Recorder

During the past year a veritable flurry of noteworthy beetle records have been received and 2011 will long be remembered as the year when the 3,000th species for the county was discovered. However, Sussex still lags well behind Surrey which claimed to have 3005 species when a county list was published by Jonty Denton in 2005.

Firstly, an important record dating from 2010 was published too late to be included in last year's report. This rove beetle was identified as *Quedius lucidulus* and is new to the British Isles. It was found in leaf litter at The Mens near Petworth during a survey for the West Weald Landscape Partnership under contract to Sussex Wildlife Trust by Mark Telfer and Graeme Lyons.

Turning now to the year 2011; on 17th May an innocent looking black click beetle clinging to the brickwork at Lewes bus station resembled the common *Athous haemorrhoidalis* but didn't look quite right. With no container to hand I carried the specimen back to Ringmer on the bus, holding it between thumb and fore finger and when viewed under the microscope I was extremely surprised when it turned out to be *Melanotus punctolineatus* which has a 'wireworm' larva that feeds at the roots of grasses. This very rare species is known in Britain with certainty only from Sandwich Bay and St Marys Bay, Kent and near Southend, Essex. However, it is a common species in France and this new discovery suggests it might also be spreading in south-east England. The more of this story is to expect the unexpected and always carry a tube in your pocket.

In Summer 2011 Mark and Graeme extended their West Weald Project survey area to cover the ancient trees in Cowdray Park near Midhurst where they made several exciting beetle discoveries. These including the RDB1 – Endangered *Laemophloeus monilis*, associated with ancient beech trees and only known from Arundel Park in West Sussex and isolated localities in Berkshire and Cambridgeshire. However, the most surprising discovery was *Corticeneus unicolor*, a rare species with its centre of distribution in the Midland counties of Nottinghamshire (Sherwood Forest) and South-west Yorkshire (Thorne Moor). Both species are thought to be predatory upon other wood boring beetles.

A sighting of the bee chafer *Trichius rosaceus* in a wood near Ardingly by Evan Jones is exciting news and is yet another example of a rare species that appears to be spreading. The impressive weevil *Platyrhinus resinosus* breeds in the fungus *Daldinia concentrica* and with no authenticated records from Sussex it is pleasing to report that one flew onto Heather Martin's shirt in a wood near Wadhurst on 26th June. The tiny bark beetle *Phloeosinus bicolor* breeds in branches of cypress and many dead specimens were discovered in a pile of logs at Haywards Heath by Jonty Denton. Recorded only from Surrey it is thought to be a recent import from Italy and it is not surprising to learn that it has spread into Sussex.

On 24th June Mike Edwards and I each swept an example of the spectacular longhorn *Agapanthia villosiviridescens* off lakeside vegetation at Chingford Pond near Burton. This is a species that was expected to colonise Sussex since its spread in adjacent counties has been monitored for several years.

Deborah Harvey has been experimenting with the use of pheromones as a way of recording rare beetles, particularly those associated with dead wood or ancient trees. One species of special interest to her is the RDB1 - Endangered click beetle *Elater ferrugineus*, known in recent times mainly from Windsor Great Park, Berkshire where the larvae develop rot holes in veteran trees. The beetle was unrecorded from Sussex, so on 26th June we visited Parham Park together with the sole purpose of recording this species. Although we failed to find any on this occasion Deborah returned to Parham on 16th July and succeeded in attracting two individuals, thus adding this fine beetle to the Sussex list.

Sussex Wildlife Trust held their annual Recording Day at Parham Park on 25th July and although beetles were scarce I was pleased to add the tortoise beetle *Cassida nebulosa* to the county list. It is associated with various Chenopodiaceae and prefers sandy soils. It is found chiefly in Hampshire, Surrey and the Breck district of Suffolk and Norfolk.

At the end of July David Hance showed me a fungus beetle he'd discovered in a slime mold on a log in Five Hundred Acre wood near Crowborough. David had correctly identified it as *Anisotoma castanea* but requested confirmation because this species is restricted to northern Britain and is possibly confined to Scotland, so its sudden appearance on the High Weald is somewhat mysterious.

Finally, *Nephus quadrimaculatus* is a tiny ladybird, mainly confined to the London district, but recently it has become more widespread in Surrey and elsewhere. A single example of this addition to the Sussex fauna was tapped off ivy in the grounds of Lewes Priory on 12th October 2011.

AUCHENORRHYNCHA (LEAFHOPPERS & PLANTHOPPERS)

by Alan Stewart, Sussex Recorder for Auchenorrhyncha

One new species was added to the list of leafhoppers for Sussex this year, but sadly another one was deleted as well. The addition was *Synophropsis lauri*, a handsome, fawn-coloured and quite large leafhopper with distinctive dark markings around the wing tips and a rather pointed head. It was first recorded in the London area in 2007, where it has become quite widespread, but this is the first time it has been recorded in Sussex. When it is eventually given an English name, we will probably have to call it the 'Bay tree leafhopper' on account of the fact that its preferred food plant is bay laurel or sweet bay, *Laurus nobilis*, that is often grown as an ornamental in gardens and of course for culinary purposes. Peter Hodge first found it in the grounds of the ruined Lewes Priory in mid-October. When I accompanied him to look for it again two days later, we found another single individual on ivy growing on one of the ruined walls of the Priory. It may be that, like many other insects, it uses ivy as an evergreen plant on which to overwinter. Incidentally, the Priory herb garden also holds a thriving population of *Eupteryx decemnotata*, a species that I reported as new to Sussex last year. It feeds most commonly on garden sage but probably also on several other aromatic herbs.

In last year's *Adastra*, I described a two-year national survey of one of the BAP Priority Species in this group: *Doratura impudica*. This is a species that appears to be confined to the extreme seaward edge of sand dunes where it feeds on sand couch, *Elymus farctus*. I mentioned that a single record existed for Sussex, at Rye Harbour. This year, in the second year of the survey, I revisited the exact site, pinpointed by its 6-figure grid-reference, only to discover that there were no sand dunes in sight! The location was in fact close to Camber Castle, more than a kilometre inland from the coast and nearly three kilometres from the nearest sand dunes (at Camber Sands). The habitat was a closely-grazed acid grass-heath. When surveying for the leafhoppers, my suspicions were aroused when I found the other species in the same genus, *Doratura stylata*, which is common and widespread in many types of dry grassland. To cut a long detective story short, the original recorder was unable to locate a specimen to support the record, or indeed any evidence of having made the record at all. Given the nature of the habitat and the lack of supporting evidence, we had to conclude reluctantly that the record must have arisen through a clerical error and that this species should be removed (at least for the meantime) from the Sussex list. However, I have not given up hope that it will be found somewhere in one of the few sand dune systems that we have in the county.

Ditchling Common Country Park includes a wide range of habitats. The much-visited area north of the main car park is heavily overgrown with bracken and has lost a lot of its biological interest. However, a large open expanse immediately west of the B2112 still retains many interesting plants that are typical indicators of old commons, including Dyer's Greenweed, Petty Whin, Betony and Sneezewort. A very brief survey of the leafhoppers of the site in August revealed twenty-one species after just a few minutes work with a sweep net. One of the more interesting was *Acanthodelphax denticauda*, a very local planthopper species associated with Tufted Hair-grass, *Deschampsia cespitosa*. This appears to be the first record of this planthopper for Sussex. Ironically, the host plant species seems to be growing rather too vigorously here, having taken over large expanses of the field. The site really needs to be grazed to ensure that the more sensitive plant species associated with old commons are not lost, even if it results in a reduction in the area of habitat that is suitable for the planthopper.

As announced in last year's issue, the new website for the national Auchenorrhyncha Recording Scheme is now up and running: <http://www.Ledra.co.uk>. In addition to news about what is happening across the country, it contains a

lot of useful information about leafhoppers in general, including identification keys, tips for beginners and references to the most important literature.

BARK FLIES & BOOK LICE (PSOCOPTERA)

by Marcus Oldfield, Sussex Psocoptera recorder.

Welcome back to former friends.

Another rather strange year climatically, so not surprising that an array of Psocopteran (Bark Flies & Book Lice) species turned up that had not made an appearance in Sussex for a decade. *Stenopsocus stigmaticus* was one of these. Easily recognised by a dark slash on its forewing, there was no sign of it from 2001 (when it seemed quite common) to 2010. But this year, it was almost everywhere. Funny but it was so nice to see it again, like an old friend.

Likewise *Psococerastis gibbosa*, by far our biggest Psocid, had also been missing since 2001 when they were clearly flourishing. Ten years on & they were again spread widely across the county. Maybe these species have long-range circadian cycles. Another couple of species had done so well this year that they moved from being ranked as 'rare' in the handbooks, to being 'common'.

One of these is *Valenzuela atricornis*. Instantly recognisable by overlong thick black feelers & what appears to be a long light brown overcoat from head to tail, 2011 populations went mad. It is described in the latest (2005, TR New) Psocopteran identification handbook as 'apparently rare', but it had become one of the most common insects on Reeds & large Sedges. Two years ago, Bob Saville, the sadly deceased Psocid king of UK, asked me for this species sent alive to his experimental lab near Edinburgh, since at that time it was so hard to find. Times change.

Renterella behvimacula, also practically unknown in Sussex a few years back, has changed its spots. One of our smallest outdoor Psocids, it has an almost human life-style, whole families (males, females, eggs) living under sheets of silk. They've moved seamlessly into suburbia from the wilderness, onto all sorts of residential roadside trees and was common along my mother-in-law's road in Lindfield as well as near my own front door in leafy Brighton. Couldn't miss it.

One record that's not so good is that numbers of last year's new national record, *Aaroniella badonneli* (Britain's 100th species of Psocoptera) were dramatically down. Only approximately 10% of 2010 numbers were 'brought forward' to this year. Maybe the population dynamics of this species enjoys booms and busts, just like our own global economy!

I'd like again to praise Bob Saville (late national Psocopteran Recorder). From the far north, he managed to inspire people like myself, to carry on his great biodiversity investigative and recording work, into lesser known yet equally fascinating orders of insects.

PARHAM PARK RECORDING DAY

by Penny Green

Every year we organise a recording day somewhere in Sussex, usually somewhere that is under-recorded, but this year we were lucky enough to be granted access to Parham Park.

The Parham Estate comprises 354 hectares including an historic deer park. It is a Site of Special Scientific Interest, with veteran oak trees. Thirty enthusiastic biological recorders attended the event; we all split into groups and potted off in different directions, some looking down low for plants, some inspecting tree trunks and posts for lichens, some on hands and knees searching for fungi, and others sweeping nets along grassy areas looking for invertebrates.

We were lucky that the weather was just perfect. Among the interesting finds of the day was a first for Sussex netted by the Sussex Beetle Recorder: the last tortoise beetle needed to complete the set in Sussex – *Cassida nebulosa*. This species isn't commonly recorded, and thought to be quite rare.

There were several interesting species of fungus found including **citrine waxcap** *Hygrocybe citrinovirens*, **mosaic puffball** *Handkea utriformis* and an inkcap for which we only have a few records, called *Coprinellus xanthothrix*.

We enjoyed watching a flock of 20 **house martins** swooping over the pond next to the grand old house, whilst **southern hawk** and **emperor** dragonflies patrolled up and down its fringes.

Several species of micro-moth leaf miner were discovered from feeding signs on leaves, and we were pleased to see **silver-washed fritillaries**, **marbled white** and **holly blue** amongst other butterfly species around the wooded areas, the pond area and along the rides. As the sun was shining we were dazzled by the number of **common emerald damselflies** on the larger pond away from the house, lots of them copulating, and **emperor** dragonflies, **four-spotted chasers** and **common blue damselflies** flashing past. The vegetated edges of the pond were alive with damselfly activity and we could all get a good look at them.

In the evening about ten recorders stayed on to run five moth traps which were set out in different habitats. The evening started well with **dark-bordered pearl** *Evergestis limbata* netted while it fed on hemp agrimony, and a second one was caught nearby later that evening. This was a rather fitting species to catch as it is the emblem of the Sussex Moth Group. As dusk fell at Parham we felt as though we were in an enchanted land as we were surrounded by old, gnarled Tolkienesque trees lit up by the moth traps. We caught over 60 species of moth, and the most interesting included local species – the **small rufous**, **double kidney**, **black arches**, **pine hawkmoth**, **rosy footman** and **scarce footman**.

The bat surveyors recorded **serotine**, **noctule** and **45kHz pipistrelle**. The serotine was heard at close quarters chomping on its dinner; the surveyors didn't even need a bat detector to hear it!

MOLLUSCS

by Martin Willing, county recorder for Mollusca

I was not able to submit a molluscan report to AdastrA 2010 and so this entry includes notes on a number of notable Sussex records and events covering the last two years.

Surveys in 2011 on the shores of Chichester Harbour turned up two notable molluscs, the **looping snail** *Truncatella subcylindrica* and the **two-toothed white snail** *Leucophytia bidentata*. Both of these snails, which occasionally live in close association, are specialist upper-shore species found beneath stones, buried in gravel or under upper shore flotsam, often near to saltmarshes. They are only immersed at extreme high tides and so, despite links with the sea, are more terrestrial than aquatic species. *T. subcylindrica* is a very local species occurring on the south coast between Cornwall and Suffolk with isolated populations in Ireland and the Channel Islands. It is an unusual species in that, in adult snails, the top 3 whorls break off and the fractured shell sealed off. It also moves in a characteristic looping fashion, rather like a caterpillar. The species has not been recorded recently in East Sussex (two pre-1965 records exist) and, until 2011, was only known living in West Sussex in one part of Pagham Harbour (AdastrA 2008: 19). The new finds were from beneath gravel and stones at two locations on Thorney Island, one on the easterly facing shore with another on the western side. These finds are the first live records for Chichester Harbour. The *L. bidentata* find, which was made at one site in association with that *T. subcylindrica*, adds a third Sussex record for this snail. The other two sites occurring at Pagham Harbour in West Sussex and at the Cuckmere Estuary in East Sussex (AdastrA 2005: 23). Further surveys in Chichester Harbour will be undertaken for these species in 2012.

I have written in a number of previous AdastrA reports (1999: 6 -11; 2006: 20; 2008: 19 – 20) about the **little whirlpool ram's-horn snail** *Anisus vorticulus*, a species that lives very locally in the unpolluted waters in grazing marshes ditches. *A. vorticulus* is the most protected non-marine species living in the UK. In addition to being a UK BAP priority species, in 2004 the snail was added to the EU Habitats Directive under Annex IIa and IV in

recognition of its vulnerable or endangered status in many European countries. Placement on Annex IIa requires member states to designate Special Areas of Conservation (SACs) for species, whilst Annex IV requires strictest protection (as 'European Protected Species').

In autumn 2010 Natural England (NE) launched a consultation process to consider SAC options for the snail. The Conchological Society in association with Buglife (The Invertebrate Conservation Trust) submitted responses to a list of potential SACs included in a NE consultation document. These included areas of the Arun Valley in West Sussex, many areas in the Broads area of Norfolk and the Pevensey Levels, East Sussex. In the response document Professor Steve Ormerod (Biological Sciences, Cardiff University) also made contributions stressing the importance of trying to ensure that large contiguous areas of habitat be maintained, as *A. vorticulus* has poor powers of natural dispersal (Niggerbrugge *et al* 2007). He also stressed the importance of maintaining as many populations of the snail as possible because significant genetic differences exist in *A. vorticulus* populations both between different areas of the country, but also within some regional blocks (Mensch *et la* 2010).

Early in 2011 NE announced the outcome of the consultation process, which confirmed that three areas in Sussex would become SACs for the snail. These include Pulborough Brooks and Amberley Wild Brooks in the Arun Valley and the whole of the Pevensey Levels. Encouragingly all of the Pevensey Levels SSSI is included in the SAC. As only about 20% of this area has been surveyed in detail for *A. vorticulus*, it is highly likely that further populations exist. The precautionary measure of including the whole Pevensey area is therefore to be welcomed.

Adastra 2009 (24 – 25) included details about the conservation of **Desmoulin's whorl snail** *Vertigo moulinsiana* in West Sussex. *V. moulinsiana* is a very local snail, typically found living in un-shaded base-rich fens. It is a UK BAP priority species and also included on the EU Habitat and Species Directive Annex IIa. It was pointed out in the report that of six Sussex sites that had supported the snail, it had been lost from three, with populations only believed to remain at Fishbourne Fen, Burton Mill Pond and Chingford Pond. At the small Fishbourne Fen the population of *V. moulinsiana*, which was discovered in 1997, had dropped in numbers by 2005. As a result Chichester Harbour Conservancy (CHC) undertook site management work in 2007 to reduce tree shading at the site. Adastra 2009 described monitoring work undertaken in autumn 2009 that had failed to relocate the snail in the fen. Further detailed CHC supported surveys were also undertaken in the spring of 2010, but again proved negative. Unfortunately it now seems likely that *V. moulinsiana* has also been lost from this site. Reasons for the loss are unclear, but may have included excessive shading of the site (before the clearance works) and/or a period of low ground water levels making conditions temporarily too dry for the snail.

Chingford Pond lies upstream of Burton Mill Pond (Burton and Chingford Ponds LNR). In 1986 water levels were lowered in Chingford Pond due to concerns about the integrity of the dam at the pond outflow end. In 1992 *V. moulinsiana* was discovered in large numbers at Burton Mill Pond and also in very low numbers in the fen developing around the margins of Chingford Pond. Under a Countryside Stewardship Scheme, Petworth Management Company have proposed works to allow water levels in Chingford Pond to be restored (or partially restored); water levels are currently estimated to be between 2.5 – 3m below 'historical levels'. As a result of these proposals West Sussex County Council supported a series of environmental studies to assess the impact of raising the pond's water levels. One of these studies involved work to investigate the current status of *V. moulinsiana* around the pond, as well as a broader survey of wetland and freshwater Mollusca in around and immediately below Chingford Pond. These surveys, undertaken in autumn 2010, found very large populations of the snail. At some sites numbers of *V. moulinsiana* were amongst the highest recorded in the UK, at one site reaching densities of about 1,600 m².

Aquatic surveys also revealed large populations (in places estimated at 15 – 20 m²) of **the duck mussel** *Anodonta anatina* living in sandy sediments in the outflow stream immediately below Chingford Pond. The posterior ends of the shells (the part of the shell valves that protrude through the sediments and through which the animal's siphons extend) were in most cases encrusted with a tufaceous ('chalky') crust suggesting that they had been in place for many years. In addition the outflow stream also produced a few examples of **the painter's mussel** *Unio pictorum*, a species more typical of rivers, canals and sometimes lakes. This species is widespread throughout lowland England, but is rather local in Sussex. It is known from the river Arun, but this find is a new record for the river Rother catchment.

One interesting and rather unusual find from the alder carr lying below Chingford Pond was the presence of several live **lapicidary snails**⁴, *Helicigona lapicida*, located beneath piles of recently cut alder logs. *H. lapicida* is a very local species in Sussex with virtually all records coming from ancient South Downs hanger woodlands. Kerney (1999: p. 201) states, 'This is a snail characteristic of limestone rocks, quarries and stone walls. It is found also in deciduous woods (especially beech) and in old hedges, always on well-drained calcareous soils'. The discovery of *H. lapicida* was unexpected and unusual in that the snail is undoubtedly occupying an atypical habitat by living in wet woodland.

I am particularly grateful to Ed Rowsell, Conservation Officer of Chichester Harbour Conservancy and Graham Roberts, Principal Ecologist for West Sussex County Council for allowing me to use information from survey reports supported by their organisations.

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FORTUNES OF THE PURPLE EMPEROR BUTTERFLY IN SUSSEX DURING 2011

by Neil Hulme, Conservation Adviser, Butterfly Conservation Sussex Branch

The first 2011 Sussex record for the **purple emperor** butterfly (*Apatura iris*) came from Milland in the far northwest of the county on the very early date of 20th June. However, this was not at odds with emergence dates elsewhere, with the famous site at Bookham Common in Surrey producing a succession of males from 13th June onwards, these being the earliest seen in the UK since 1893.

Regular sightings in Sussex commenced on 23rd June at the Southwater Woods complex (Madgeland, Marlpost and Dogbarking Woods), the county stronghold of the purple emperor. A promising record of three males here on 26th June was never bettered and it soon became clear that 2011 was to be a very poor season for the species. At the time of writing a total of only about thirty five sightings for the whole of Sussex have been collated, this being a significantly lower figure than in recent years. By way of comparison, twenty one males were seen during a single day (9th July) at Southwater in 2010.

With only a handful of exceptions 2011 reports were of single butterflies and only a couple of females were seen. Most records came from the Southwater Woods complex and a cluster of woods near Five Oaks. Isolated sightings were otherwise restricted to locations scattered across West Sussex, including Stansted Forest, Goodwood, Ebernoe and Bignor, with marginally better numbers seen around Wiston.

The emperor is distributed rather thinly and patchily across East Sussex and only five records were received from VC14. Four were from known localities in the northeast (near Hartfield, at Harrison's Rocks and Broadwater Warren), while a surprising record on the Downs near Cuckoo Bottom (just west of Lewes) represents an apparent extension of the species' range to the southeast.

Typically for poor emperor years, the species slipped below the 'observation threshold' on many known sites, seeming to disappear altogether. This term was used by Heslop, lead author of 'Notes & Views of the Purple Emperor' (1964), to describe the population density above which the species is likely to be observed; the purple emperor is highly elusive and may exist in such low numbers that it can remain undetected in a wood for many

⁴ A lapicidary is a stone-cutter. Ed.

years. Furthermore, it is the level of occupancy at 'Master Trees' (male assembly areas) that dictates the level of aggression, activity and hence visibility of the species. In years when the butterfly is rare there are simply too few opponents to fight with and laziness becomes the norm. In 2011 even the employment of whole ox livers and helium-filled balloons failed to galvanise them into action on some sites.

Sightings petered out by 27th July, leaving the report from Loxwood Lock on 12th August looking rather isolated. However, this is not unfeasibly late if it is assumed to have been a female insect; the last UK sighting of 2011 was a very late empress on 15th August, again at Bookham.

To find blame for the very poor 2011 season we must look back to the period of gale force winds and heavy rain experienced over three days in mid July 2010, during an emperor season which started very well. At that time it was estimated that more than 50% of the Sussex population had been killed, seriously curtailing the egg-laying season (most females emerge significantly later than the males). Survey results for ova and pre-hibernation larvae in Wiltshire were in line with this estimate and Matthew Oates (pers. comm.) considered numbers to be "down by between one third and a half on 2009".

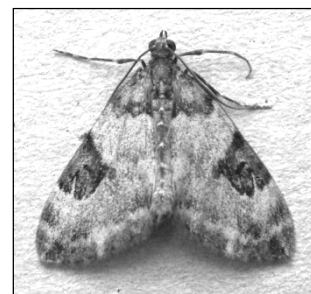
The weather throughout the 2011 flight period was below average and similar surveys of the early developmental stages suggest a further halving of the annual egg-lay. The Purple Emperor thus appears to be within a period of downwardly spiralling abundance levels, giving rise to predictions of a very modest 2012 season. This ebb and flow of fortunes is entirely normal for most species of butterfly and other factors, such as weather conditions during the late larval and early pupal period, are also influential in determining the number of adults on the wing each year.

At some point the trend will be reversed and Purple Emperors will again grace our high summer woodlands in good numbers, appearing more widespread and cropping up in some surprising locations.

RARE MOTHS IN SUSSEX DURING 2011

by Colin R. Pratt, County Recorder of Butterflies and Moths for East and West Sussex

2011 was a stimulating season for Sussex moth hunters, although most of the excitement was originally sourced from outside this country. For native insects, both the quantity of moths and the number of species recorded was below average. In a vivid illustration of the historically recent decline in night-flying lepidoptera, judging from serial moth trap counts at Peacehaven and Walberton, the volume of macro-moths last year was about a third of that averaged during the 1970s. However, incredibly, nine new moths came to notice in the county in 2011 - including a macro fresh to the UK - with even more novel to each vice-county. Seven of these additions were to our list of micros, these being the **mung moth** *Maruca vitrata* at Climping, *Musotima nitidalis* (the second UK record) at Crawley Down, *Metalampra italica* at Warnham, *Dioryctria sylvestrella* at Findon Valley, *Elachista alpinella* at Bracklesham Bay, *Dystebenna stephensi* in Cowdray Park, and *Brachmia inornatella* at Icklesham. So far as the macro-moths are concerned, news of a similar inaugural encounter with the **scarce blackneck** *Lygephila cracca* (a moth normally confined to the far south-western corner of England) at Eastbourne by David Lester in 2010 has just been received and then there was the first British sighting of the **fir carpet** *Thera vetustata* (see below) at Climping by Matthew Sennitt last year. Of almost equal significance was the discovery of an establishment of the **flame brocade** *Trigonophora flammea* from a continental landfall made at Beachy Head, this being stumbled upon by Michael Blencowe and Graeme Lyons in its first known settlement in the UK for about a century.



Fir carpet. Photo: M. Sennitt

The annual influx of primary immigrants also proved highly exciting for other species. The first West Sussex **bright wave** *Idaea ochrata cantitata* turned up in Derek Lee's moth trap at Bracklesham, as did a **silver-striped hawk** *Hippotion celerio* and a **lunar double-stripe** *Minucia lunaris*, while there were **Portland ribbon wave** *Idaea degeneraria* at Storrington and Peacehaven, **dusky hook-tip** *Drepana curvatula* at Icklesham and Peacehaven, **light crimson underwing** *Catocala promissa* at Ferring and Walberton, and then there were half a dozen **Dewick's plusia**

Macdunnoughia confusa that were identified singly at Pagham Harbour, Walberton, Rye Harbour, Playden, Birdham, and Burgess Hill. Another unusual event concerned the arrival of the highest level of **small marbled** *Eublemma parva* to the county since the all-time record of 19 specimens in 1953 with sightings at Heathfield, Ferring, Rye, Peacehaven, Pagham Harbour, Middleton-on-Sea, Walberton, and Bracklesham. Other incoming scarcities were the **ni moth** *Trichoplusia ni* at Bracklesham, Walberton, Friston and Beachy Head, and a **bedstraw hawk** *Hyles gallii* at Ringmer.

The **red-headed chestnut** *Conistra erythrocephala* - another extinct Victorian resident in the county - was recorded at both ends of the county, at Bracklesham and Icklesham. And a **death's-head hawk** was even seen flying round Hastings railway station during the daytime. Amongst the smaller fry, *Catoptria verellus* at Walberton was last seen in Sussex in 1890. And of the annually-seen insects, the **humming-bird hawk** *Macroglossum stellatarum* had a good year, although very few caterpillars were discovered, while the **silver y** *Autographa gamma* had its worst season here since 1989.

ON LEAF MINERS AND PLANT GALLS

by Patrick Roper

In recent years there has been a spate of first class material enabling people to identify with confidence a wide range of the organisms that cause leaf mines and galls on so many of our wild plants. As the county Diptera recorder I have always been interested in these little wonders, but recently published material has considerably broadened my horizons and added a new dimension to my recording activity.

And leaf mines and galls are little wonders. The tiny burrowing larvae of the miners eat their way beneath the epidermis of their chosen leaves in a pattern characteristic of their species, while the egg-laying females of the gall causing invertebrates (or the mechanisms of gall-causing fungi) put a chemical into the plant that causes it to produce a protuberant shape – round, knobbly, spiky, fluffy or whatever. Leaves also, of course, act as substrates for an enormous number of microfungi, but I am leaving those to Howard Matcham and Martin Allison (see above).

Quite often a particular leaf mine or gall seems not to be very common. Detailed search over the right sort of tree or shrub will often reveal very few or none of the species that might be found there, while many lower-growing plants can be examined before anything is found. In the case of leaf miners and galls the early stages of different species of moth, fly or other insects can be discovered that would be almost impossible to find if they did not leave their tell tale pallid trails through the chlorophyll or colourful excrescences on leaves and other plant parts. So far as gall causers are concerned, perhaps one of the most familiar objects in the countryside is the robin's pin cushion or bedeguar, those tufts like red and cancerous candyfloss that are attached to wild rose stems, but how often would any entomologist catch, let alone identify, the tiny black adult gall causing wasp *Diplolepis rosae*. Even if you try to breed examples from the gall, you may get something different from the gall causer. Robin's pincushions are often home to non-gall-causing squatter wasplets, known as inquilines, such as *Periclistus brandtii* and these themselves are attacked by at least three species of parasitoids making these (and other) galls veritable Pandora's boxes of the smaller hymenoptera.

Sometimes when I come across a lonely leaf mine I wonder what the limiting factor might be. Does the female deliberately spread her eggs over a large area? Are eggs or young larvae gobbled up by some predator before they have made any visible progress? Why when there is seemingly an almost limitless source of food available, do the numbers of the species that eat it remain at such a low level? Some leaf-miners have only ever been found as one or very few examples from a single site. One micro moth, the **Hereford pigmy**, *Stigmella torminalis*, for example, has only been recorded (in mines on leaves of the wild service tree, *Sorbus torminalis*) from one small site in Britain and two in Germany, but many people, including myself, have searched for it unsuccessfully whenever a wild service is encountered. At the opposite end of the scale is the recent history of the **horse chestnut leaf miner**, *Cameraria obridella*, first reported from Macedonia in 1985 (though much earlier leaf mines have now been found in museum collections), it reached Wimbledon in 2002 and now almost every horse chestnut leaf in Sussex and much of the rest

of Britain seems to harbour several examples of the mine. Maybe its success is due to lack of predators and pathogens which, I suspect, will ultimately catch up with it and reduce its population to much lower levels.

Searching for leaf mines and galls is a very gentle as well as satisfying occupation. In 2011 in one of our local woods I would walk some twenty paces and then stop and see what I could find on the plants round about. This extended the time taken for my daily constitutional, involved less effort and produced more reward. Within a very few days I had recorded the following locally, several of which have had no previous county records on the Sussex Biodiversity Record Centre database. (Species with an English name in bold are micromoths and the remainder are agromyzid flies –Diptera):

Aquilegia: *Phytomyza minuscula*. Beech: **beech midget** *Phyllonorycter maestingella*; **small beech pigmy** *Stigmella tityrella*. Birch: *Agromyza alnibetulae*. Bramble: **glossy bramble pigmy** *Stigmella splendidissimella*; **golden pigmy** *Stigmella aurella*. Elder: *Liriomyza amoena*. Field maple: **maple midget** *Phyllonorycter acerifoliella*. Hazel: **nut-tree pigmy** *Stigmella microtheriella*; **hazel slender** *Parornix devoniella*; **coarse hazel pigmy** *Stigmella floslactella*. Heath speedwell: *Phytomyza crassisetata*. Holly: *Phytomyza ilicis*. Honeysuckle: *Aulagromyza hendeliana*; *Chromatomyia aprilina*. Hornbeam: **dark hornbeam midget** *Phyllonorycter quinnata*; **hornbeam slender** *Parornix carpinella*. London plane: **London midget** *Phyllonorycter platani*. Mint: *Phytomyza petoei*. Oak: **fiery oak midget** *Phyllonorycter lautella*; **red-headed pigmy** *Stigmella ruficapitella*. Poplar: *Aulagromyza populicola*. Privet: **common slender** *Caloptilia syringella*. Red campion: *Amauromyza flavifrons*. Rowan: *Phyllonorycter sorbi*. Sallow: **long-streak midget** *Phyllonorycter salicolella*. Sycamore: **barred sycamore pigmy** *Stigmella speciosa*. Wild rose: **rose leaf-miner** *Stigmella anomalella*. Yellow archangel: *Amauromyza labiatarum*. There were a number of galls too.

To identify my finds I usually take the affected leaves, or other plant parts, home in small plastic boxes (easily obtainable in supermarkets) and then go through the pictures and other data on the web sites (see below) or my books on galls (also see below). If the leaf mines or galls are still occupied, the adults can often be bred out and this helps to determine in particular those species that have rather similarly shaped mines. There is a useful online article (see references) on breeding leaf miners by Brian Elliot (2007). With micromoths a lens and a good illustrated book or web site is usually all that is necessary to make a confident determination, but with some of the Agromyzid flies dissection is necessary, a process not for the faint hearted but enjoyable if one likes a challenge on a dark winter evening.

Away from my home area I made many interesting discoveries in 2011, but two I remember in particular, both from Brighton Wild Park in October. The first was several mines of the agromyzid fly *Phytomyza brunniipes* in leaves of sanicle, *Sanicula europaea*. I am always pleased when I come across this plant as its used to be common when I was young, but has declined much over the years. To find a leaf mine of a new-to-Sussex species was a bonus and also present on some leaves was a purplish brown rust fungus, *Puccinia saniculae*. Later that day I found some small 'artichoke' galls on shoot tips of rockrose (*Helianthemum nummularia*). They looked rather like flower buds, but what would these be doing in October? In fact they were galls of the midge *Dasineura helianthemii* (= *Contarinia helianthemii*). This is was a new record for Sussex and of a species that appears to be rare throughout its range. In the Czech Republic and Slovakia it is regarded as a subalpine species and the few other British records are from upland limestone areas from Derbyshire northwards.

Leafminers and plant galls are areas of biodiversity that have become much more accessible in recent years due to new books and the Internet. They can be found at any time of the year and usually without the heroic efforts made by entomologists in other fields. Scanners and digital cameras make them easy to record and the pictures can be used to ask others what they might be. Best of all perhaps is that there is still a good opportunity to make new records at county, national and international level and to even to find species new to science without visiting a tropical rain forest.

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BIRDS

The Sussex Ornithological Society's report for 2010 by Nick Paul, Recorder for SOS.

The number of records submitted to the Sussex Ornithological Society (SOS) for 2011 will not be known until April or May 2012 when observers have completed their entries onto the Society's database. The SOS received 170,113 records for 2010, slightly down on the number in 2009 but still the third highest in their history. The number of observers sending in records was 986, slightly higher than in 2009.

Atlas and BirdTrack data helped to bolster the number of records received but were balanced with traditional recording by observers and collated records from the major bird-watching sites such as Pagham Harbour, Rye Harbour, Pulborough Brooks RSPB, Weir Wood Reservoir, Warnham LNR, Selsey Bill and Chichester Harbour. Garden Birdwatch data was not received in time for inclusion in the annual Bird Report.

Over 230 records of scarce and rare species were submitted in 2010 of which 189 were accepted by the SOS Records Committee and 15 by the British Birds Rarities Committee.

The only addition to the Sussex county list was a **red-flanked bluetail** (probably a first winter female) which was discovered at Hankley Common on 7 Nov. Unfortunately, it only remained for that day so was seen by just a fortunate few.

Other rare/scarce species seen during the year included an **Alpine swift** near Upper Beeding on 24 Mar (the earliest county record and part of a national influx at the time), an adult **Bonaparte's gull** at Arlington Reservoir from 18 to 22 April (the 5th county record), the county's fourth **red-footed falcon** (a male in the Cuckmere Valley for four days in June), the second **American golden plover** on 16 September in Chichester Harbour, the fourth **paddyfield warbler** trapped and ringed at Pett Level on 27 September and the second **blackpoll warbler** on 15 October (also trapped and ringed at Pett Level). However, the highlight of the year for many birders was the juvenile **white-tailed eagle** that spent two days in the Arun Valley on 11 and 12 December. This was the first in Sussex since 1961 and the spent much of the remainder of the winter in north Hampshire before relocating to Norfolk and Lincolnshire in the spring of 2011.

The cold weather in December brought an exceptional influx of geese. These included the county's fourth wild **red-breasted goose** from 26 December until the beginning of 2011 at Pett Level where a **black brant** on 31 December was the first record for East Sussex (although one or two were reported from the west of the county in both winter periods). Other uncommon geese that were reported at the end of the year included **pink-footed geese** (with a maximum of six at Scotney Court gravel pit), **white-fronted geese** at various sites across the county (with a maximum of 360 at Rye Harbour at the end of the month) and **barnacle geese** which were also widely reported (with a maximum of 132 at Pett Level at the month's end).

Also of note were six **great white egrets** at various sites and dates through the year, a record five **buff-breasted sandpipers** in September and October, a **little bunting** in an Eastbourne garden for three days in October and up to 70 **Lapland buntings** that were part of a major influx into the UK between September and December.

The Sussex county list was 391 as of 31 December 2010.

As usual, the county's breeding birds experienced mixed fortunes. The RSPB Sussex project team (assisted by the SOS) monitored the **stone-curlew** breeding and confirmed that at least two pairs bred with one (and possibly two)

young fledging. Birds were also present at two further sites where monitoring was not possible. Birdwatchers are again urged not to try to locate the breeding sites as there is still a long way to go before re-colonisation of the species in the county is assured.

It is evident that two other rare species bred in the county. **Savi's warbler** bred at two locations as did two pairs of **marsh warbler**, the latter fledging four young. Other successes among the rarer breeding species included **Egyptian goose** (8 young), **honey-buzzard** (7 pairs reared 2 young each) and **goshawk** where last year's breeding pair again bred, raising three young. The number of nesting **little egrets** was 36, a reduction from the minimum of 40 pairs in 2009 and the number of confirmed breeding pairs of **peregrine falcon** was only eight (raising a minimum of 19 young), although there were a number of other probable breeding attempts. Two pairs of **red kite** attempted to breed but only one was successful and **marsh harriers** were present at three sites with no evidence of successful nesting. On a more positive note, a **Eurasian bittern** was heard booming at Rye Harbour from late March to mid-June suggesting that colonisation in the county may not be far away.

Breeding waders were again rather scarce in the county. **Oystercatcher** had another good year with the number of pairs up from 48 to 54 and **avocets** also fared better with an increase from 29 to 38 pairs. However, **little ringed plover** were down from 12 pairs at six sites to seven pairs at four sites and **ringed plover** also had a poor year with a decrease from 57 pairs in 2009 to 48 pairs in 2010. Numbers of breeding pairs of **common snipe**, **common redshank** and **northern lapwing** all showed a reduction from the numbers in 2009.

Among the Gulls and Terns, **Mediterranean gulls** had a record year (185 pairs raising at least 74 young) and 4 pairs of **great black-backed gulls** again bred. One pair of **common gulls** bred at Rye Harbour with one chick recorded in June (the first in the County since 1963) but unfortunately it failed to survive. **Sandwich terns** and **common terns** fared reasonably well but **little terns** had mixed fortunes with no successful nesting in the west of the county, although seven pairs nested at Rye Harbour raising seven young.

Not all the breeding sites of **barn owl** were monitored this year so it is difficult to compare their numbers to those in 2009. However, many of our summer visitors fared poorly. Breeding of **turtle dove**, for example, was confirmed in only six tetrads and only four pairs of **cuckoos** were confirmed as breeding, although there were another 75 pairs where breeding was probable. **Swift** breeding numbers were possibly better with breeding confirmed in 11 tetrads and probably breeding in another 146 tetrads. The annual Wealden Heaths Breeding Birds Survey identified only 18 pairs or territories of **nightjar** (a significant reduction on the 30 identified in 2009 and 27 in 2008) but the BTO Survey on the Ashdown Forest found 86 churring males or territories (very similar to the 85 identified in the 2004 Survey). **Yellow wagtails** were confirmed as breeding at only 5 sites (the same as in 2009) but was probable at a further six sites. Again, there was only one record of **wood warbler** breeding but was probable at a further two sites. **Spotted flycatcher** confirmed breeding numbers were reduced to 17 sites (from 21 in 2009) but was probable at a further 21 sites. For the second year running there were no records of confirmed breeding of **willow tit** and only three records of this species in the county were accepted. **Tree sparrow** numbers continued the serious decline seen in recent years.

The full list of scarce/rare description species, record acceptances and requests by the Recorder and/or the SOS Records Committee can be found on the Society's website, along with the regularly updated Recent Sightings and other features: www.sos.org.uk

LAND MAMMALS

by Penny Green and Ruth Eastwood

The Sussex Mammal Group was very grateful indeed to receive a grant from Lush's funding pot, which will enable the purchasing of much needed equipment to help study the mammal fauna of Sussex over the coming years.

New Longworth traps were used in the Mini Mammal Monitoring Schemes:

The Mammal Society's Mini Mammal Monitoring (previously known as National Small Mammal Monitoring Scheme) was introduced in 2009. Its aim is to fill the gap in knowledge about the distribution and abundance of small mammals in the British Isles and provide long-term reliable data on population trends. The data collected will inform sustainable land management and conservation decisions to protect vulnerable populations, reverse declines and conserve our mini mammals in the future. Five surveys are utilised in the scheme; harvest mouse nest search, field vole signs search, bait-tube with DNA analysis, low density live trapping and high density live trapping.

In the initial year of the scheme only six tetrads were monitored in Sussex. Although not yet reaching heady heights, the number of tetrads monitored by volunteers in Sussex has steadily increased. During the 2011 autumn season twelve tetrads were covered but more are needed to provide good coverage of the county.

With DNA data from the autumn bait-tube survey still awaited, preliminary results for 2011 confirm the presence of eight mini mammal species in Sussex. These species were **wood mouse** *Apodemus sylvaticus*; **yellow-necked mouse** *Apodemus flavicollis*; **house mouse** *Mus domesticus*; **bank vole** *Myodes glareolus*; **field vole** *Microtus agrestis*; **common shrew** *Sorex araneus*; pygmy shrew *Sorex minutus*; **brown rat** *Rattus norvegicus*.

Low density live trapping and bait-tubes are the most frequently carried out surveys in Sussex. The bait-tube method is particularly informative providing evidence of species not identified using any other survey methods. The most encountered mini mammals species in the surveys were wood mice and bank voles. The most species found in any one tetrad was five. For more information or to get involved with surveying please contact Ruth & Richard Black at sussexmammalsurveys@gmail.com.



Left: bank vole

Right: wood mouse

Funds will also be put in to monitoring **dormice** (*Muscardinus avellanarius*) in Sussex; we will purchase the materials needed to make the dormouse nest boxes, and a volunteer has kindly offered to make (literally) a shed load of boxes so that we can set

up several new National Dormouse Monitoring Programme sites in the next year or two. In Sussex there are currently 37 National Dormouse Monitoring Programme (NDMP) sites. In 2009 we only knew of a dozen or so sites, so this is great progress! We have just received the historic records for all Sussex NDMP sites from the PTES and they are now in the Sussex Biodiversity Record Centre's database, there were 2,240 records from PTES which has brought the number of dormice records in the SxBRC database up to a whopping 2,830! And the Nut Hunt continues as we search for areas where dormice haven't been recorded before, and we're also revisiting areas where dormice used to be present but haven't been surveyed for some time (in some cases 30 years).

Looking at the general mammal records that came in to the SxBRC for 2011 (they're still coming in too, it's not too late to send yours in!) we can see that previous pleas for mammal records has paid off. We have hedgehog, weasel, stoat, brown hare, muntjac and mole records coming in thick and fast. We have also had an increase in polecat reports but without a good photo or a carcass it is difficult to determine whether they are wild, domestic or hybrid animals.

If you'd like to join up to the Sussex Mammal Group (for regular SMG E-bulletins and general mammal news) Google-group or the Sussex Dormouse Network Google-group, then please contact Penny Green on pennygreen@sussexwt.org.uk or 01273 497521.

And *Fran Southgate* on otters and water voles

Otters. The otter situation in Sussex remains much the same this year. There are still no confirmed reports of any resident otter populations in the County, although there have been clusters of unconfirmed sightings of possible transient animals on the river Adur and the river Cuckmere. A survey of 42 kilometres of the Western Rother river, the most likely 'in migration' route for otters into Sussex from neighbouring Hampshire, revealed no confirmed otters signs, although one or two frustratingly inconclusive photos. The survey used a variety of field survey and camera trapping techniques and showed a healthy population of American mink flourishing in the catchment!

Water voles. Despite the continuing efforts of many landowners and conservation organisations in Sussex, it appears that water voles are still both a threatened and vulnerable species in the County. In Sussex there are only three remaining key areas where water voles survive in any numbers. These are the Chichester Coastal Plain, Pett Levels and Romney marsh, and the river Arun (predominantly a population which was introduced in 2006 by the Arundel Wildfowl and Wetlands Trust.) There is now very little water vole activity outside these core areas.

These last remaining core populations are critical to the survival of the species as a whole in the County. A PhD student at Brighton University will spend the next 4 years analysing genetic and habitat data from water vole populations in the South East to see if any notable trends can be identified, so that new management prescriptions can be drawn up for the species. This will include analysis of water vole use of vertical habitats such as fen and reedbed, to establish to what extent they provide additional essential habitat, and a more detailed look at how a more viable landscape network of wetland sites can be created to enable water vole movement through the County.

SEA MAMMALS

by Stephen Savage, Sussex County Recorder of Sea Mammals and Sea Watch Foundation Regional Coordinator

Another eventful year for sea mammal sightings. As with the last few years, the inshore sightings (within 200m of the coast) of **bottlenose dolphin** *Tursiops truncatus* have decreased substantially since the start of monitoring back in 1991. Possibly in part due to the big increase in water sports. We continue to receive offshore sightings through Sussex Fisheries, dive clubs and other individuals but these are recorded when opportunities arise and at this time we are unable to ascertain how common these offshore sightings are.

Bottlenose dolphins

This year's confirmed bottlenose dolphin sightings include a school of dolphins sighted by a commercial fisherman on 16th April, 3 miles east of Selsey Bill. Also on 16th April a solitary bottlenose dolphin was observed off the coast at Littlehampton. Four bottlenose dolphins were seen 19th April at Eastbourne. On 27th April a school of around 10-15 bottlenose dolphins were seen feeding less than a mile from Brighton seafront. Six bottlenose dolphins were reported on the same day by SOS off Selsey Bill heading east. A group of dolphins reported 29th April close to the Mixon Hole, Selsey, may have been part of the same group. This was a school of 6 to 8 adults and one smaller bottlenose dolphin. The dolphins were observed by the Mulberry Divers. The dolphins were reported to be swimming around, jumping and playing until the divers started to get into the water.

A group of at least 3 bottlenose dolphins was observed 1st May during the boating regatta. The dolphins were amongst the boats about 200 metres from the shore at the Shoreham Beach LNR. The largest group was recorded on 23rd November, reported by a fisherman who was 12 miles off the Brighton coast when the dolphins appeared. He estimated 70 dolphins. Even allowing for an exaggeration in numbers, this was obviously a large school. Smaller groups temporarily join together when travelling long distances which may be the case here. The dolphins were reported to play around the vessel occasionally leaping out of the water near the boat.

Unusual Cetacean sightings

Common dolphin *Delphinus delphis*, **harbour porpoise** *Phocoena phocoena* and **pilot whale** *Globicephala melas* are also recorded in Sussex waters, but none was recorded this year. However we recorded the following unusual sightings in

the English Channel. On 22nd April a pod of 5-6 **white-beaked dolphins** *Lagenorhynchus albirostris* was seen in the middle of the English Channel (half way between Eastbourne and Dieppe). A solitary white-beaked dolphin was observed by surveyors while it was bow-riding their vessel about 15 miles south of Worthing on 9th November. This species often bow-rides so it is interesting that both local sightings of these dolphins were bow-riding. This species is not normally recorded in the English Channel. On 5th July a **humpback whale** *Megaptera novaeangliae* was reported between Brighton and the French Coast, very little details are available for this sighting but past reports suggest that large whale species occasionally travel the English Channel.

Dead strandings

I received a report from the Environment Agency of a dead dolphin at East Wittering 24th October. A dead cetacean, possibly a porpoise, was washed ashore at Seaford 25th October. Fins and the head were missing so a positive ID was difficult as head shape, tooth shape and fin shape are the main identifying features. 1st November a dead decomposed harbour porpoise was washed ashore at Newhaven.

Seal Sightings

Some fascinating seal activity this year including both UK species the **common seal** *Phoca vitulina* and the larger **grey seal** *Halichoerus grypus*. Common seals are the species we usually observe in Sussex and the grey seal is rarely reported. However, this year grey seals have been seen on a few occasions.

Common seals

We have had some fascinating common seal observations this year. We have continued to track the movements of Twinkle (named by his RSPCA rescuers), the common seal (male yearling) rescued on the East Coast and released at Lowestoft by the RSPCA in July 2010 which turned up at Cuckmere River in November 2010. The seal was identified by a unique orange tag with the number 61940. Only sightings where we could definitely identify the seal were attributed to this animal. The spot patterns on common seals are unique to each animal and I have been able to distinguish a pattern of marking which we have also been able use to identify this seal. This has been particularly useful when the seal has been in the water and the tag not visible.

Originally, sightings appeared to indicate the seal was travelling from east to west, spending a short time in each of the Sussex Rivers (from Cuckmere to Adur) before moving on. British Divers Marine Life Rescue were also keeping an eye on Twinkle's movements. However once I was able to put together all the sightings based on tag identification and visual and photographic evidence based on the facial markings we were able to see that the seal was in fact moving back and forth between these rivers. We now know, for example that Twinkle was in the river Adur on 10th December but was back in Cuckmere River on 4th January and also seen on 8th February. Twinkle was confirmed to be back in the river Ouse on 14th and 15th February. On 21st March he was photographed in the Cuckmere River. I watched him on several occasions between 9th and 15th April in the river Adur. Further sightings of this seal (not mentioned here) were reported in the river Ouse, river Adur (last sighting here 17th June). The last sighting of Twinkle may have been a common seal which spent some time in Eastbourne Harbour in August. Twinkle has been observed feeding on fish in the river Adur.

Several other common seal sightings reported at Brighton, Hove, Shoreham and Lancing in April, May and June might also be Twinkle or they may just be the usual transient seals. As well as these, other common seal sightings recorded include a common seal at Goring 9th April and two common seals observed at Cuckmere Haven 24th April. A common seal was also spotted at Brighton on 7th July and Seaford on 28th September. I received an interesting report of a common seal in the river Arun south of the marina at Ford. It was swimming on the surface travelling with the outgoing tide and feeding on at least one fish. The last time I received a seal sighting in the Arun was back in 2008 when a common seal was seen above Arundel.

Facial Identification Marking Twinkle (Steve Savage)



Grey seals

On 1st January a grey seal hauled out on the river bank in the lower part of Cuckmere river. A grey seal was also reported near Bexhill 22nd Jan and on the 27th Jan a grey seal was observed off Shoreham Beach LNR. A grey seal was observed off the coast of Worthing in West Sussex 26th May. On 13th October a grey seal was spotted close to shore at Rustington. A grey seal was also reported off Goring by Sea on 17th October and again on 2nd November. Anecdotal reports suggest the seal was also in the area between these two dates. A grey seal was observed at Seaford 17th December.

Seal Rescue. Two common seal pups were rescued in Sussex this year. I received a report of the first seal when it was found on Hove beach on 31st July. BDMLR were called and seal pup taken to the RSPCA Wildlife Rehabilitation Centre at Mallydams Woods in Hastings. The seal pup appeared to be less than a month old with injuries to its face and head, including a bad gash beside the left eye. Common seals only nurse their young for 4-6 weeks. This seal did look quite thin (rather than the large fat reserves a pup should have when weaned) maybe it became separated too early. The seal was successfully released into the sea at Hastings on 11th October and appeared on BBC Spring Watch.

BDMLR rescued another seal pup, this time at Chichester on 6th September. This seal pup was also taken to RSPCA Wildlife Rehabilitation Centre at Mallydams Wood and has since been successfully released. A young seal, also looking a bit thin, was observed in the river Ouse opposite the Lewes Railway Land Nature Reserve on 28th November. It was impossible to approach without causing it to go back in the water. BDMLR marine medics have been keeping an eye on it. This is not the usual seal we have been watching that visits then river Ouse each year.

Please report any dolphin, whale or seal sightings to 07773610036 or stevep.savage@ntlworld.com More detailed information and photographs of the sightings and seal rescues mentioned can be seen on Stephen's weblog <http://sussexmarinejottings.blogspot.com/>

THE CURRENT STATE AND FUTURE POTENTIAL OF SUSSEX WETLANDS

by Fran Southgate

Sussex Wetland Landscapes Officer, Sussex Wildlife Trust, Woods Mill, Henfield, BN5 9SD,
fransouthgate@sussexwt.org.uk; 01273 497555

We have lost a staggering proportion of our wetlands from Sussex, and that which remains is fragmented, degraded and at risk of disappearing entirely. We have no means of finding out exactly how much wetland has been lost, however it is estimated that between 1960 and 1980 alone, over 60% of Sussex wetlands were drained (Wildlife Trusts, 1996). Analysis of tithe maps from the 1840's for the Arun valley, shows that the total area of floodplain fields with obvious wetland names (i.e. marsh, reedbed, osier bed) was nearly 1500 ha (or a minimum of 18 % of the total floodplain land area of 8,000 ha). This data provides some key signposts to areas where some of our losses of specific wetland habitats may have occurred. Without the inclusion of coastal and floodplain grazing marsh, there are currently only around 100 ha of priority wetland habitat in the entire Arun valley. With the area of good quality floodplain grazing marsh included (around 400 ha), the area increases but is still substantially less than historical evidence suggests.

Sussex (comprising East and West Sussex and the City of Brighton and Hove) is 384,000 ha in area. It has an extant floodplain⁵ covering 10 % of this area of 39,000 hectares and naturally wet soils which cover nearly half of Sussex at 159,000 hectares (which overlap significantly with the floodplain). This means that the County has the potential for a much larger area of wetland than it currently contains. There are nearly 10,000 km of rivers and streams in Sussex but over 80% of Sussex rivers are failing the Water Framework Directive's (WFD's) 'Good Ecological Status'. A crude estimate is therefore that we have at least 8,000 km of river and stream in need of rehabilitation or restoration. Sussex is also home to four Ramsar sites⁶, four wetland Special Protection Areas⁷ and two 'water based' Special Areas of Conservation⁸. Only twenty of the 141 Sussex Sites of Special Scientific Interest are predominantly wetland. Many protected wetland sites are however in suboptimal condition and suffering from severe external pressures on limited wetland resources.

As a lowland county with a unique geology, we are nonetheless lucky enough to be host to some incredibly rare and valuable wetland habitats such as wet heath, chalk-fed reedbed, sandstone ghylls and acid floodplain woodland. Sussex chalk streams are one of these unique habitats. Over 135 km of chalk stream have been confirmed in the County, and there is potentially more to discover. Less than 20% of these are deemed near natural, which means there is potential for over 80 % to be enhanced or restored. With over 70% of Sussex drinking water arising from underground (chalk and sandstone) aquifers, the health of spring fed wetlands such as these, which arise from the groundwater underneath landscapes such as the South Downs, and greensand heaths of Sussex are intricately linked to our land and water usage.

Sussex is also home to some nationally rare wetland habitats including fen, reedbed, ancient floodplain woodland and saltmarsh. Recent surveys confirm the area of Sussex fen is around 92.3 ha - roughly 10% of the original Sussex fen estimate and less than 0.0003 % of the land area of County. The largest single unit areas of fen are found in the Combe Haven valley and at Pett Level in East Sussex (around 28 ha and roughly one third each of the entire Sussex

⁵ Where the potential for flooding in any one year is greater than or equal to 1% (i.e. a 100 to 1 chance) for river flooding and greater or equal to 0.5% (i.e. a 200 to 1 chance) for coastal and tidal flooding.

⁶ A site qualifies as a **Ramsar** under the Convention on Wetlands of International Importance, especially as waterfowl habitat.

⁷ **Special Protected Areas** - Any site which is recognised as being of international ornithological importance is considered for classification as an SPA under the EC Directive for the Conservation of Wild Birds (EC/79/409).

⁸ **Special Areas of Conservation (SAC's)** - The Habitats Directive requires the establishment of a European network of important high-quality conservation sites that will contribute to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive. The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds).

fen resource). There are only 18 fen sites in Sussex recorded with an area of over 1 hectare, and only 7 of these sites have an area larger than 2 hectares. The Arun Valley Habitat Potential Model predicts that there is the potential to create base-rich and base-poor fen on nearly 827 ha of the Arun valley alone. Even the creation of half this area would increase the current fen area by 50%.

Similarly, the true area of reedbed in the County has been revised to closer to 233 hectares (subject to further confirmation). This is approximately 7% of the original estimate of reedbed in Sussex, 0.05 % of the UK resource, and 0.0006 % of the Sussex land area. The largest individual stands of reedbed in Sussex and the only two 'optimal core areas' of reedbed habitat in Sussex of over 20 hectares are found at Combe Haven and the Pannel Valley in East Sussex. Three areas of reedbed over 5 ha are found at Sompting in West Sussex, and Walland Marsh and Pannel Valley in East Sussex. There are approximately 38 individual stands of reed over 1 ha across Sussex and only 15 other significant complexes of reedbed habitat over 2 ha.

A question mark remained as to whether these figure for Sussex fen and reedbed were an underestimate due to under-recording, or a true reflection of the resource. The results of a detailed NVC survey of 1000 ha of the Arun valley indicate that under-recording may be contributing to the 'lack' of fen in the County, but that conversely the overall picture we have of the Sussex reedbed resource may be relatively accurate.



Rural floodplains can help to temporarily store hundreds of thousands of cubic metres of water during a flood event, helping reduce the potential impact of floods on populated areas. The intrinsic value of this natural service is only just beginning to be recognised. The restoration of naturally functioning floodplains in appropriate areas is key.

Other wetland habitats in Sussex still need further research into the quality and naturalness of the resource. On a positive note, original datasets estimated the area of Sussex Coastal and Floodplain Grazing Marsh (CFPGM) as roughly 11,500 ha but more accurate mapping shows a minimum area of 14,000 ha. When 1000 ha of this habitat was surveyed in detail in the Arun valley, around 50% of the CFPGM was agriculturally improved or rough pasture, 30% was species poor wet grassland and only 19% was classified as diverse (sometimes improved) inundation grassland. Around 88 ha of the National Vegetation Classification MG11 & MG13 grasslands were found in one section of the Arun valley in Sussex. If the total England resource of these two rarer inundation grassland types is still less than 3,000 ha, it is possible that Sussex holds a significant proportion of the British resource of this habitat.

Sussex has a significant proportion of woodland cover relative to the UK average. Ancient semi-natural woodlands cover 11 % of the Sussex area (about 43,000 ha) and include a number of large ancient woodland complexes such as the West Weald and the High Weald. Of the ancient woodland area in Sussex, around 1,600 ha is found on naturally wet soils, and 14,000 ha on soils with impeded drainage. This implies that a significant proportion of the Sussex ancient woodland resource (38 %) comprises of woodland habitats with wetland interest. Around 570 ha of deciduous woodland is found in the most frequently inundated flood zone in Sussex, of which approximately 300 ha (or less than 0.004 % of the Sussex ancient woodland resource) is ancient floodplain woodland in around 500 individual patches. Twenty three of these floodplain woodlands are over 5 ha in size, and only eight are over 10 ha.

The majority of floodplain woodland sites occur high up the river catchment where headstreams have been less modified by man. Over 6% of the High Weald in Sussex is classed as 'ghyll' woodland. This rare habitat type is a

unique landscape feature of this part of Sussex and the UK, applying to the woodland type found in the Sandstone and Hastings Beds of the High Weald. Current mapping, which is relatively crude, gives an area around 8,600 ha.

Open water habitats such as ponds are still being investigated for their quality and distribution in Sussex. The total number of ponds in Sussex is at least 8,000 and possibly closer to 17,000 (excluding garden and urban ponds). As a combined area of surface open water, these ponds create a significant open water resource. Identifying which ponds are of particular importance for biodiversity is a task that has only recently started to be tackled. Volunteers have so far identified 46 priority ponds in 19 parishes although it is likely that many more Sussex ponds will gain priority status. Six of the twelve Important Areas for Ponds identified for the South East occur in Sussex: Western Rother Valley, Sussex Heaths, Ashdown, Newhaven, Pevensy and Winchelsea.

The Sussex coast is 285 km long, which is 2.4% of the coastline of Great Britain. Similar to freshwater wetlands, little is known about the overall distribution and condition of coastal wetlands in Sussex, and as with freshwater wetlands, the unique geology of Sussex determines the rarity of some of the habitats such as chalk wave-cut platform. Saltmarsh is found at only a few places in Sussex: mainly at the harbours of Rye, Chichester and Pagham and along the tidal reaches of the rivers Rother, Cuckmere and Adur. The total amount of saltmarsh recorded recently was by BRANCH (Biodiversity Requires Adaptation in Northwest Europe under a CHanging climate) was 405.3 hectares. Of this total, approximately 92% is found in West Sussex, and the majority of this is in Chichester Harbour, the largest saltmarsh site in the South-East region. Much saltmarsh in Sussex is of recent origin, formed since the rapid spread of common cord-grass *Spartina anglica* in the first half of this century.

BRANCH data also states that we have nearly 2,000 ha of coastal and estuarine mudflat in Sussex. This forms part of the 4,080 ha of the South East region's estuarine area and just under 1% of the UK resource. Chichester Harbour (almost 3,000 ha straddling West Sussex and Hampshire) is the only large estuary in the South East region. Other estuaries are small, with none larger than 400 ha. Two of the region's estuaries (Pagham and Chichester Harbours) are individually internationally important for their wintering waterfowl populations. Recent surveys by the University of Brighton have indicated that littoral sediment habitats (such as estuarine mud flats and salt marshes) are generally in favourable ecological condition in Sussex, although they are of limited extent and threatened by human impacts such as nutrient enrichment. Research conducted by the University of Brighton has also shown that only 13 of 28 potential saline lagoon sites in Sussex can be officially designated as saline lagoon habitat. These 13 sites comprise just under 65 ha, which is less than half of previous estimates of the saline lagoonal resource in Sussex. Five of the 13 lagoons are not currently legally protected and only three of the 13 sites are considered 'natural' lagoons. Numbers of natural coastal lagoons would likely have been much higher in the past.

Other Sussex wetland habitats such as wet heath, species-rich and species-poor floodplain grasslands and bogs and mires remain poorly documented in Sussex and it is likely that we have significant areas of nationally and locally important wetland habitats which remain unrecognised. Fortunately, local and national policy, and a framework of local landowners and practitioners are enabling the information we have to be used to inform the conservation and restoration of wetland habitats in the face of continuing land use change and potential climate change. We are lucky enough in Sussex to be host to some very knowledgeable people who are very passionate about their local environment. With their help we hope that the valuable wetland and water resources we have, can be turned into a functioning landscape network of wetland habitats which are managed to provide a wealth of benefits to local people and local wildlife.

This is a summary of the 'Wetland Potential of Sussex' report 2012 which has documented the extent and condition of a number of wetland habitats and species in Sussex, and which describes a number of 'core' wetland requirements. In order to restore a viable network of wetland habitats for all wetland species across Sussex, there are targets for each habitat and species that the conservation community should be aiming to achieve. These restoration ambitions need to be targeted to the locations where we can most effectively restore habitats to the maximum long term benefit, rather than the opportunistic habitat restoration which has often been done in the past. In the opinion of the author, these targets should not be viewed as ambitious but, rather, essential to restoring a healthy landscape which can support both human and wildlife populations in Sussex.

For copies of the full 'Wetland Potential of Sussex' report 2012, please contact: fransouthgate@sussexwt.org.uk

SUSSEX AMPHIBIAN AND REPTILE GROUP

by Henri Brocklebank, Acting SARG chair

HAPPY BIRTHDAY SARG. This year we are 25 years old. Our 25th year has had some distinct highlights:

Finally a new website www.sussexarg.org. Thanks to Charles Roper the SARG website has a slick new look. As soon as it was launched we had hundreds of hits and over the last month we are getting plenty of people coming to us with genuine Amphibian and Reptile concerns. The website has certainly fulfilled our needs on this front but also gives us a tool that can be developed in many different ways in the future.

Groombridge Lagoons is a site owned by Southern Water that turns out to be unrivalled in Sussex for its populations of both Amphibians and Reptiles. After several years of negotiation by SARG the site is soon (mid January) to be declared a Site of Nature Conservation Importance (SNCI) by East Sussex County Council. This is a very significant achievement as it is the first addition to the East Sussex suite of SNCIs for many years. In parallel to this process Southern Water is considering future options for the site and we hope that SARG will very much be involved in this.

In July SARG had a field trip to the Knepp Castle Estate in West Sussex to look for Amphibians and Reptiles. Many Adastra readers will be familiar with the re-wilding that is taking place on the Estate. Mats and sheets had been laid out some time before and an interesting day of recording was held. However, over lunch with Charlie Burrell, the owner of Knepp, there were discussions about pond creation on the Estate, specifically with Barry Kemp, the SARG Herp specialist and Bev Wadge who runs the Sussex Pond Project. As a result of this conversation the 'Million Ponds' Project became involved, as did the eminent steering group of the re-wilding project. The result of these discussions is that ten ponds will be created a year on the Knepp Estate for ten years! 100 ponds of varying shapes, sizes and stages of succession. Monitoring this exciting piece of work will be an important and fascinating role over the coming years and we will book a slot at the 2021 Recorders Seminar to tell you all about what we found!

Despite these highlights SARG has been virtually dormant as a group, until December 2011. Two 'SARG Revitalisation' meetings were held in December 2011. These two events were extremely successful with numerous people signing up for active roles in 'Future SARG'. We plan to meet in Late January/Early February to get down to the real nuts and bolts of what the group will be up to in the coming year, but judging by the enthusiasm and ideas that were brought to the meetings SARG is about to get pretty exciting! There are toad crossings to monitor, ponds to survey, sites to maintain and lets not forget, adders to retrieve from curious places.

MONITORING ON SUSSEX WILDLIFE TRUST RESERVES IN 2011

by Graeme Lyons, Sussex Wildlife Trust ecologist

I have nearly completed my fourth year as the Trust's Ecologist and with each year I familiarise myself more with the sites and continue to learn from them. My role is to plan, co-ordinate and implement biological monitoring on the 34 sites that the Trust manages, I do much of the field work myself and contract out the more specialised projects. Selecting what and how things are monitored is a rigorous process and standardised, repeatable methods are used whenever possible. There are many reasons for monitoring but gauging the effectiveness of our habitat management is perhaps the most frequent. At the time of writing, I am knee deep in report writing and data analysis and therefore many projects are yet to be written up. Here are some of the highlights from monitoring on Trust reserves in 2011 as well as some ad hoc recording that inevitably occurs when I am on site!

In July, a joint project between the Trust and the RSPB was carried out at Amberley Wildbrooks. This involved repeating a methodology set up by Frances Abraham and Frances was able to help in 2011. We surveyed the exceptionally rich ditches for vascular plants using presence or absence but only managed to get around about half

of the ditches surveyed. We will be going back in 2012 to complete the survey. Highlights included **cut-grass**, **great water parsnip**, **sharp-leaved pondweed**, **hair-like pondweed**, **marsh stitchwort**, **creeping yellow-cress**, **fine-leaved water-dropwort**, **unbranched bur-reed** and **least water-pepper**. I kicked up a **wood sandpiper** from a ditch, recorded a single **dotted fan-foot** moth and we also saw the host-specific reed beetle *Donacia dentata* sitting on **arrowhead**.

Casual recording at Graffham in 2011 during an NVC mapping exercise produced a number of interesting invertebrates, showing that the site already has an interest in places that should be maintained. This included the Na beetle *Agonum sexpunctatum*, a specialist of wet heaths, the saproxylic longhorn *Leptura aurulenta* (Na), the **small velvet ant** *Smicromyrme rufipes* (Nb) and the scarce (Na) spider *Salticus zebraeus* found on the sunlit bark of a large old pine. Specimens from pitfall traps at Graffham in 2009 produced several interesting species. The **heath short-spur** *Anisodactylus nemorivagus* was identified by Mark Telfer and the crab spider *Xysticus luctuosus*, a first for Sussex, was identified by Andy Phillips. **Marsh club-moss** continues to increase in number.

A saproxylic beetle survey of Eridge Rocks was carried out but the vast majority of specimens are still to be identified by Mark Telfer. We did record the nationally scarce beetle *Triplax russia* in an old bracket fungus during one of the field visits.

Ditchling Beacon has an interesting bryophyte rich grassland on the north facing slopes that is particularly impressive towards the more recently acquired quarry to the north. This 'southern hepatic mat' can in places reach a cover of bryophytes in excess of 80% of the sward. Careful management is required as winter grazing by cattle of this habitat can have a detrimental effect through poaching and slippage. Common mosses present include *Neckera crispa*, *Hypnum lacunosum*, *Homalothecium lutescens* and *Ctenidium molluscum*. Less frequently found are *Dicranum bonjeani*, *Poblia wahlenbergii* (identified by Howard Matcham), *Ditrichum gracile* and *Thuidium assimile*. A single **chalk carpet** moth *Scotopteryx bipunctaria* was also recorded there during routine quadrat work in July.

A brief visit to Chailey Warren in September produced one flowering **marsh gentian** spike. Casual recording at Malling Down on the 9th April 2011 produced several specimens of the tiny but attractive RDB micro moth the **scarce violet cosmet** *Pancalia schwarzeella*. This was identified by Tony Davis after a few weeks before I had found the species with Penny Green at Mill Hill. These were exciting records as the species had not been seen in Sussex since 1931. I also recorded a number of the nationally scarce tenebrionid beetle *Opatrum sabulosum*.

Quadrats were again monitored at Southerham but perhaps most impressive there in 2011 was the profusion of **scarce forester** moths recorded on the 21st May. The metallic green mixed with the metallic blue of the first brood of **Adonis blues** made an incredible sight. I lost count of both species within minutes that day. **White horehound** continues to grow on the large rabbit warren there and bizarrely, **great duckweed** grows in some of the cattle troughs.

The meadows at Badlands (The Mens) were monitored again this year and the amount of **betony** present was staggering. On passing I called in at the meadows on the 26th March after seeing David Monk's records of **light orange underwing** moths in East Sussex. I knew that the meadows were edged by a great deal of **aspen** and my hunch paid off as within minutes I had netted a specimen of this nationally scarce day-flying moth. Later in the season Mark Monk-Terry and I spotted an amazing mushroom smelling of almonds at The Mens that Vivien Hodge identified as *Agaricus macrocarpus*. Only the second record for West Sussex.

Dartford warblers have persisted at Iping, despite the previous two cold winters. During a visit to Iping in April I noticed a colony of the handsome bee, *Andrena cinerea*. Nearby were a number of *Nomada lathburiana*, the *Andrena's* cuckoo bee. This was confirmed by Mike Edwards. Although this species is RDB, it is thought to have expanded its range recently due to its host's recent expansion.

The annual Common Birds Census was carried out at Woods Mill again in 2011 and early analysis shows few changes. It does seem that we may have lost the last breeding **willow warbler** however. Moth trapping reported the nationally notable (Na) pyralid *Nascia cilialis*, an infrequent but annual visitor to the trap here at Woods Mill and perhaps our scarcest breeding moth species. In November, the Nb tortrix *Acleris logiana* was also recorded. The Nb saproxylic beetle *Platycis minutus* was seen crawling over the inside of the kitchen wall in August. A few interesting

bryophytes were also found at Woods Mill including the **Prince-of-Wales feather-moss** *Leptodon smithii* and the incredibly small liverwort **minute pouncewort** *Cololejeunea minutissima*.

An NVC survey of Waltham Brooks was completed in 2011 and was surprisingly complex. OV30, a community of pioneer wetland plants that colonise bare mud was (temporarily) well-established after heavy grazing in summer 2010. I recorded **least water-pepper** there as well as abundant **fine-leaved water-dropwort**. Frances Abraham also recorded **whorl-grass** and **common meadow-rue** there in 2011.

A saproxylic survey of Cowdray Park is underway as part of the West Weald Landscape Partnership. Many of the specimens are yet to be identified but a number of firsts for Sussex have already been recorded including **wood cricket** *Nemobius sylvestris* (See John Paul's account in the Orthoptera section) and the saproxylic micro moth the **oak cosmet** *Dystebenna stephensi*.

Blogs

There are various blogs and other sites on the Web that give a running picture of what is going in Sussex biodiversity and a selection of some is given below. If you would like to feature here next year, please get in touch with the editor.

Many organisations and groups do, of course, have their own web sites and weblogs and these are given after their names and addresses below.

Paul Lister has two sites:

This is a daily record (whenever the trap is run) of mothing in Mid-Sussex. <http://www.sussexmothdiary.co.uk>

Photo galleries of butterflies, dragonflies, miscellaneous insects and a lot of other wildlife, both in Sussex and abroad. <http://www.thesussexwildlifer.co.uk>

Graeme Lyons is the SWT ecologist and this is his own wildlife blog:

<http://analternativenaturalhistoryofsussex.blogspot.com/>

Stephen Savage: has two blogs:

Sussex Urban Wildlife <http://urbanwildlifejottings.blogspot.com/>

Sussex Marine Wildlife Jottings <http://sussexmarinejottings.blogspot.com/>

Patrick Roper has five wildlife blogs:

One about Brede High Woods north of Hastings: <http://bredehighwoods.blogspot.com/>

One about the square metre nature reserve in his Sussex garden: <http://squaremetre1.blogspot.com/>

One about the wildlife of a Sussex window box: <http://windowboxwildlife.blogspot.com/>

One about trees of the genus *Sorbus*: <http://rowanswhitebeamsandservicetrees.blogspot.com/>

And a general one about wildlife, mainly in Sussex: <http://ramblingsofanaturalist.blogspot.com/>

Podcast

In October 2011 Graeme Lyons, Mat Davidson and Michael Blencowe started an internet podcast - 'The Natural History of Sussex' - and have recorded their monthly adventures as they search for wildlife in the county. You can listen in at www.thenaturalhistoryofsussex.blogspot.com/

SUSSEX COUNTY RECORDERS 2011/2012

If you are not already sending your records to a particular local recording scheme or society, records of any plant or animal species can be sent to the Sussex Biodiversity Record Centre who will store them in their database and pass them on to the relevant groups listed below. Any record can be kept as confidential on request.

Sussex Biodiversity Record Centre (SxBRC)

Woods Mill, Henfield,
West Sussex BN5 9SD
Tel: 01273 497553
Email: info@sxbrc.org.uk

Sussex Wildlife Trust (SWT)

Woods Mill, Henfield,
West Sussex BN5 9SD
Tel: 01273 492630
Email: enquiries@sussexwt.org.uk

PAUL HARMES

(Sussex Botanical Recording Society
East Sussex)
Flat 7, Park View,
5 Offham Terrace,
Lewes, East Sussex BN7 2QP
Tel: 01273 474797 Mob: 07740 438306
E-mail: pharmes@btinternet.com

MIKE SHAW

(Sussex Botanical Recording Society
West Sussex)
mshaw@doctors.org.uk

Sussex Botanical Recording Society

web site: www.sussexflora.org.uk

Orchids

DAVID LANG
1 Oaktree, Barcombe, Lewes,
East Sussex BN8 5DP
Tel: (01273) 400446
davidlang446@btinternet.com

Bryophytes

HOWARD MATCHAM
21 Temple Bar, Strettington,
near Chichester, West Sussex PO18 0LB
Tel: 01243 781238
hwlgmatch@yahoo.co.uk

Fungi

MARTIN ALLISON (mainly E. Sussex)
martin.allison@rspb.org.uk

HOWARD MATCHAM (mainly W. Sussex)
See under Bryophytes above.

Microfungi

HOWARD MATCHAM
See under Bryophytes above

Lichens

SIMON DAVEY
10 Cottage Homes, Common Lane,
Ditchling, Hassocks
West Sussex BN6 8TW
Tel: 01273 844436
srdavey@globalnet.co.uk

Sussex Lichen Recording Group

Jacqui Middleton
Tel: 01730 716366
Email: jacquiandbruce@tiscali.co.uk

Charophytes (Stoneworts)

FRANCES ABRAHAM
Old School House, Ebernoe, nr Petworth,
West Sussex GU28 9LD
fab@inmyclouds.net

Marine algae (seaweeds)

IAN TITTLE
Home: mmit@waitrose.com

Amphibians & Reptiles

Records should be sent to
Sussex Biodiversity Record Centre (SxBRC)
Woods Mill, Henfield,
West Sussex BN5 9SD
Tel: 01273 497521
Email: info@sxbrc.org.uk

River Fish

DAMON BLOCK
Environment Agency, Southern Regional Office,
Guildbourne House, Chatsworth Road, Worthing, West
Sussex, BN11 1LD. Phone: 01903 703976
damon.block@environment-agency.gov.uk

Birds

Sussex Ornithological Society Recorder

NICK PAUL,
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recorder@sos.org.uk

Bird conservation enquiries:

conservation@sos.org.uk

All other enquiries:

Secretary

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Henfield, West Sussex BN5 9JJ
01273 494723,
secretary@sos.org.uk

Mammals (see below for bats, badgers & cetaceans)

Records should be sent to the
Sussex Mammal Group
C/O Penny Green, Woods Mill, Henfield,
West Sussex BN5 9SD
Tel: 01273 497521
Email: pennygreen@sussexwt.org.uk

Bats

Sussex Biodiversity Record Centre (See above).

Badgers

Badger Trust - Sussex
Tel: 07910 198720
Badger Trust website: www.badger.org.uk

Cetaceans and Seals

STEPHEN SAVAGE (Seawatch)
45 North Road, Portslade,
East Sussex BN41 2HD
Tel. 01273 424339
stevep.savage@ntlworld.com
www.seawatchfoundation.org.uk

Otters and Water Voles

FRAN SOUTHGATE
c/o the Sussex Wildlife Trust, Woods Mill
Henfield, West Sussex BN5 9SD
Tel: 01273 497555
fransouthgate@sussexwt.org.uk

Moths and butterflies

COLIN PRATT
Sussex Moth Group Recorder
Oleander, 5 View Road,
Peacehaven, East Sussex.
colin.pratt@talk21.com
Tel. 01273 586780

Moths and butterflies (cont.)

CLARE BLENCOWE
Butterfly Conservation recorder
recording@sussex-butterflies.org.uk

WENDY ALEXANDER

Moth Group Secretary
01424 212894 wkalexander@btinternet.com

Glow-worms

Please send records to SxBRC

Spiders

ANDY PHILLIPS
Flat 5, 21 West Hill Road
St. Leonards on Sea
East Sussex
TN38 0NA
Tel: 01424 716919
threecubes@gmail.com

Orthoptera & related orders

JOHN PAUL
Downsflint, High Street, Upper Beeding,
West Sussex BN44 3WN
turbots@btinternet.com

Dragonflies

Penny Green
British Dragonfly Society – Sussex branch
C/O Sussex Biodiversity Record Centre
Woods Mill, Henfield, West Sussex, BN5 9SD
01273 497521
Records to pennygreen@sussexwt.org.uk
Web: www.webjam.com/bdssx

Coleoptera (beetles) & Heteroptera (plant bugs)

PETER HODGE
8 Harvard Road, Ringmer,
East Sussex BN8 5HJ
Tel. 01273 812047
peter.hodge@mypostoffice.co.uk

Hymenoptera Aculeata: Ants, Bees & Wasps

MIKE EDWARDS
Lea-side, Carron Lane, Midhurst,
West Sussex GU29 9LB
Tel. 01730 810482
ammophila@macace.net

Diptera (two-winged flies)

PATRICK ROPER
South View, Churchland Lane,
Sedlescombe, East Sussex TN33 0PF
Tel. 01424 870993
patrick@prassociates.co.uk

Hoverflies

ROGER MORRIS
& STUART BALL
National Hoverfly Recording Scheme
7 Vine Street, Stamford
Lincolnshire PE9 1QE
roger.morris@dsl.pipex.com
Web: www.hoverfly.org.uk

Geology

Booth Museum of Natural History
194 Dyke Road, Brighton BN1 5AA
Telephone 03000 290900
visitor.services@brighton-hove.gov.uk

Hemiptera/Homoptera (Auchenorrhyncha: Leafhoppers & planthoppers)

ALAN STEWART
31 Houndean Rise, Lewes,
East Sussex BN7 1EQ
a.j.a.stewart@sussex.ac.uk
Tel: 01273 476243

Molluscs

MARTIN WILLING
14 Goodwood Close, Midhurst,
West Sussex GU29 9JG
martinjwilling@gmail.com
Tel.: 01730 814790

Pseudo-scorpions

GERALD LEGG (National Recorder)
Email: gerald@chelifer.com.

Psocoptera (Bark lice and book lice)

MARCUS OLDFIELD
Booth Museum of Natural History, 194 Dyke
Road, Brighton,
East Sussex BN15AA
Email: gerald.legg@brighton-hove.gov.uk
Tel: 01273 552586

Marine Records - (see also Cetaceans)

GERALD LEGG
gerald@chelifer.com.

OTHER USEFUL ADDRESSES

Ashdown Forest

The Conservators of Ashdown Forest
The Ashdown Forest Centre
Wych Cross, Forest Row
East Sussex RH18 5JP
Tel. 01342 823583;
www.ashdownforest.org
www.ashdownforest.org/home/index.

East Sussex County Council

KATE COLE
County ecologist
kate.cole@eastsussex.gov.uk
Tel: 01273 481621

Natural England (formerly English Nature)

Guildbourne House, Chatsworth Road, Worthing, West
Sussex, BN11 1LD.
Phone: 0300 060 2514
enquiries@naturalengland.org.uk

Environment Agency

Southern Regional Office,
Guildbourne House, Chatsworth Road, Worthing, West
Sussex, BN11 1LD.
Phone: 08708 506506
enquiries@environment-agency.gov.uk

Forestry Commission,

South East England Forest District,
Bucks Horn Oak, Farnham,
Surrey GU10 4LS
Tel: 01420 23666
enquiries.seefd@forestry.gsi.gov.uk

High Weald AONB Unit

Woodland Enterprise Centre,
Hastings Road, Flimwell,
East Sussex TN5 7PR
Tel: 01580 879500
info@highweald.org

National Trust

South East Region, Polesden Lacey,
Dorking, Surrey RH5 6BD Tel: 01372 458203
polesdenlacey@nationaltrust.org.uk

Otters and Rivers Partnership

See Otters & Water Voles above.

RSPB

South East England Regional Office
2nd Floor, 42 Frederick Place,
Brighton BN1 4EA
Tel: 01273 775333

South Downs National Park Authority

Hatton House, Bepton Road, Midhurst,
West Sussex GU29 9LU
Tel: 0300 303 1053
info@southdowns.gov.uk
Web: <http://www.southdowns.gov.uk/>

South East Water

Snodland, Kent ME6 5AH
Tel: 0845 301 084
Web: www.southeastwater.co.uk/contact

Southern Water

Environment & Product Quality
Southern House, Lewes Road
Falmer, Brighton BN1 9PY
Tel: 0845 272 0845
customerservices@southernwater.co.uk

Sussex Amphibian & Reptile Group

Henri Brocklebank, Chair
Sussex Biodiversity Record Centre (See above)

Sussex Bat Group

www.sussexbatgroup.org.uk
contact@sussexbatgroup.org.uk

Sussex Botanical Recording Society

Web: www.sussexflora.org.uk/

Sussex Lichen Recording Group

Jacqui Middleton at jacquiandbruce@tiscali.co.uk

Sussex Wildlife Trust

Woods Mill, Henfield, West Sussex BN5 9SD
Tel: 01273 492630
enquiries@sussexwt.org.uk

Weald Meadows Initiative

High Weald Landscape Trust
meadows@highwealdlandscapetrust.org
www.highwealdlandscapetrust.org and
www.highweald.org

West Sussex County Council

Environment and Heritage Team, First Floor,
Northleigh, County Hall, Chichester, PO19 1RH
Tel: 01243 777273
env.dev@westsussex.gov.uk

Woodland Trust

The Woodland Trust, Kempton Way, Grantham,
Lincolnshire, NG31 6LL
Tel: 01476 581111
enquiries@woodlandtrust.org.uk

PUBLICATIONS FROM THE SUSSEX BIODIVERSITY RECORD CENTRE

The Sussex Biodiversity Record Centre has a growing library of publications, papers and reports available as hard copies or on line from:

<http://sxbrc.org.uk/documents/> Copies of this
Aadastra Review from 2001 are also available on line.

The Record Centre has paper copies of the following:
The Dragonflies of Sussex, Sussex Wild Flowers, Sussex
Rare Plant Register, Sussex Botany, Wild Orchids of
Sussex, The Trees of Sussex.

The following are available on line:

A Major Milestone- 2 millionth record, Bees and Wasps
of the East Sussex Downs, Big Biodiversity Butterfly
Count, Burgess Hill Green Circle Network, Dormouse
and Field Vole Surveys, Great Nut Hunt, Harassed by
the Rattle of the Steam-Plough, Lichens of Sussex
checklist, Ninfield Recording Day, Sussex Bird
Inventory, West Weald Recording Day - May 2009.

Further details here:

<http://sxbrc.org.uk/biodiversity/publications/>

Occasional papers available on line

OP01 *Geranium x monacense* nothovar *anglicum*. The Sussex cranesbill.

G. x monacense nothovar anglicum was described from a
plant found growing in a hedgbank in East Sussex and
this paper gives an account of the species and its
varieties.

OP02 Bat flies and fleas at Ebernoe.

A brief note on some of the ectoparasites of bats at
Ebernoe Common in West Sussex.

OP03 Anophelic mosquitoes in Sussex.

A brief note on malaria-bearing mosquitoes in modern
Sussex. This account may have to be expanded if
climate change exacerbates the problem.

OP04 The polecat in Sussex.

After many years of absence due to persecution by
gamekeepers and others, the polecat *Mustela putorius* is
now returning to Sussex. This paper covers the story so
far.

OP05 The ivy bee, *Colletes hederæ* in Sussex.

An account of an attractive, late-flying solitary bee that
has colonised much of Sussex along the coast in recent
years.

OP06 Japanese knotweed, *Fallopia japonica*. An
account of this problematic invasive alien plant and the
legislation that applies to it.

OP07 Green seafingers, *Codium fragile*, in Sussex.

Information regarding the seaweed *Codium*
fragile ssp. *tomentosoides*. It is found on the Priority List of
Problem Species in Need of Control and is one of
several taxa known as **green seafingers**. Other
vernacular names are dead man's fingers, green fleece,
oyster thief and Sputnik weed.

OP08 Sussex stoneflies (Plecoptera).

An account of the stoneflies (Plecoptera) recorded in
Sussex.

OP09 Sussex lacewings and their allies.

An account of the Neuroptera, Mecoptera and
Megaloptera recorded in Sussex.

OP10 Blackflies (Diptera: Simuliidae) in Sussex.

An account of the blackflies so far recorded in Sussex
based mainly on the work of Roger Crosskey and Rory
Post.

OP11 Species with a Sussex dimension. Short
descriptions of species that have a particular Sussex
dimension.

OP12 Extinct or formerly extinct species in Sussex.

Species in Sussex that are extinct, almost extinct,
thought to be extinct, or formerly extinct.

OP13 Ticks and mites of Sussex. An account of all
species of ticks and mites known by the author of the
paper to have been recorded in Sussex.

