

ADASTRA

2013



**An annual review
of wildlife recording in Sussex**

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The Sussex Biodiversity Record Centre

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A review of wildlife recording in Sussex in 2013

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by the

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*Cover picture: Kingmere Reef: Sponges, worms, seamats and Sandalled Anemone.
Gerald Legg/naturaimaging 2013.*

A foreword from Penny Green, manager of the Sussex Biodiversity Record Centre

The Taming of the Shrew

We are blessed in Sussex to have so many biological recorders out in the field recording, enjoying nature, being part of a wider community of people who have the same interest. We are fortunate, also, to have leading lights in our recording groups, who have visions for recording; they inspire the masses to record and get involved, and be part of that community. Focused work, such as atlas recording and national surveys, enthuses recorders; it gives a purpose to our recording as we feed back to local and national recording schemes. Many of us love nothing more than seeing our dots on the map as it helps us to see how useful our records are and how our records fit in to the wider picture. Recording gets us out to new places, it's a catalyst for going to new tetrads, learning new species groups, and maybe even venturing near the county borders (but don't get too close!)

At the time of writing, we have 4.43 million species records in the database at the Sussex Biodiversity Record Centre. *4.43 million!* This is all data collected and submitted by your good selves, shared with local recording schemes and societies, and passed on to national schemes and societies. This data is used daily in many ways both locally, regionally and nationally: to help land managers make good habitat management decisions; to provide knowledge about species distribution; to help students with their studies; to inform ecological consultants of what has been recorded in an area; to aid habitat restoration projects.

We record because we enjoy it and are passionate about it, but also because we can see how the data we collect are a legacy and provide a snap-shot in time. It is a record of our lives, of where we have been, what we have seen, who our companions were and the adventures that have unravelled in the process.

Before now, we have always presumed that if a recorder has sent their data in to us then they wouldn't do so unless they were happy for us to share their data as their data custodian. We would now like to make the sharing of data a little more structured for the future, so we can make sure that we are taking in to account the wishes of recorders and how they would like their data to be utilised. So please read Charles Roper's excellent article on page 3 to help you make a decision that is right for you and please let us know your thoughts.

I hope you enjoy reading the articles in 'AdastrA 2013'; I know I have. It has reminded me how fortunate I am to be part of such a thriving recording community and, of course, what a wonderful place Sussex is!



Pygmy Shrew by Alan Price/Sussex Wildlife Trust

THE FUTURE OF DATA SHARING

by Charles Roper, Sussex Biodiversity Record Centre

Executive Summary

We at SxBRC would like to improve the way we share and distribute data so that we're better able to exploit modern technology. In order to do this we need to sharpen up on our data sharing agreements and start the process of applying clear, machine-readable licenses to datasets. We need to do this in collaboration with data creators and with the blessing of recorders and groups. Read on for the details on what, why and how.

The World Wide Web

Think back for a moment to Summer 2012. In four short hours, the British perception of the London Olympics spun from cynicism to delight to pride. Mid-way through this epic spectacle - Danny Boyle's aptly titled "Isles of Wonder" - a suburban house levitates revealing a man tapping away at a computer. The words *this is for everyone* enigmatically flash around the arena on vast LED screens. As with much of the ceremony, you probably thought *what does it mean?* while simultaneously being enthralled nonetheless.

The man at the computer was Sir Tim Berners-Lee, inventor of the World Wide Web, and you may not have realised the message was a tweet[1]. It was a simple message posted live on the World Wide Web via the Twitter social network at the same time as being illuminated around the Olympic stadium and on into our homes via satellite broadcast television. The extraordinary story of the World Wide Web, invented just 24 years previously by the Cern scientist, reached a crescendo at that moment and so laid an important milestone in our history. The message, the medium and the moment were indeed for everyone. Berners-Lee summarised it thus:

"The Web is about connecting people through technology, not about documents. The Olympics are about connecting people too. It would be nice if the Olympics bring people to use the Web to understand each other, break down national and cultural barriers and look at each other from a more beautiful point of view."

The staggering achievement of the Web must not be underestimated. It is not merely a technology invented by one person or even a team, but one of humanity's finest examples of collaboration, agreement and freedom. It is easy to take for granted how simple it is now to shop online, keep in touch with friends, look up information, research, work and pass the time via computers on our desks, and smart devices in our pockets. More and more people around the world are meeting online, starting friendships, falling in love. Most importantly, our ability to *contribute* knowledge is enhanced beyond anything anyone could have imagined. We can create a website, edit Wikipedia, blog, tweet, post pictures, upload data, write comments and answer questions. In doing so, anyone can become a publisher. Anyone can contribute. Anyone with something to say can now say it and anyone with a web-capable device can see it. That is extraordinary. Twenty years ago such civilised, democratic notions were the stuff of science fiction, but now it's woven into our everyday lives.

It is easy to forget that, at the time the web was invented, computers were abstruse (still are in many ways), difficult machines. The domain of experts and computer "whizz-kids". They were expensive, unfriendly and inaccessible. Furthermore, getting one computer to talk to another computer to exchange information was extremely difficult. Copying files from one system to another was fraught with complexity. Computers were essentially islands cut off from one another bar to a few intrepid techies. And companies such as Microsoft and Apple had a vested interest in keeping it so - choice and freedom may be good for us, but it's not good for business (or so they thought at the time). So in creating a highly fault-tolerant way allowing computers to read "pages" of information from other

computers, and in creating a relatively simple way to do it, and in getting others to agree to use the same simple ways, and doing it in such a way that no one company, organisation, country or individual could completely control it, and in actually getting it off the ground at all - well, that's a little piece of genius.

Today, we can access vast tracts of human knowledge instantly with a simple search on a device we carry in our pocket. Paying for access to content is the exception rather than the rule. This free, super-abundant access to information, and the unrestricted ease with which we can publish it, has fuelled further content creation, insight, inspiration and collaboration. It's an information bloom. A virtuous circle of human creativity and consumption. And it's all based on agreement and collaboration.

A little data history

Four months after the Olympic opening ceremony, Berners-Lee together with fellow scientist Sir Nigel Shadbolt (Professor of Artificial Intelligence and Head of the Web and Internet Science Group at the University of Southampton), founded the Open Data Institute[2]. In this new initiative Sir Tim and Sir Nigel are catalysing not only the next chapter in the story of the Web but also in the much longer history of our human instinct to share information. They have said the burgeoning Open Data movement is roughly at the stage the web was 20 years ago. The blue touch-paper has been lit and it's about to take off. Together with those same visionaries who kicked off the Web (and a few younger ones), they're hoping to do for sharing data what we've already achieved for sharing general information via the web.

So what is data sharing exactly?

It's not a new concept. Data has been around since humans have been able to think and record. Sumerian writing and Egyptian hieroglyphs from around 3500BC recorded many aspects of our lives. Pythagoras (572BC-495BC), whose ideas and theories we have based much of our knowledge of the universe, is quoted as saying "Friends share all things." Lascaux cave paintings in south-western France depict hunting scenes with animals - data, in other words - messages, ideas, concepts. Indigenous Australians created "songlines" whereby they would sing out "the name of everything that crossed their path - birds, animals, plants, rocks, waterholes - and so singing the world into existence". Such creations are said to have guided them along the routes of their ancestors. The Inuit laid monumental "Inukshuk" as way-finding markers to fishing grounds, and the 150BC Turin Papyrus was one of the first topographical maps.

19th-century oceanographer and meteorologist Matthew Fontaine Maury was a pioneer. He extensively analysed ships logs and weather, mapped his data and in 1855 published his book, *The Physical Geography of the Sea*, so that "each may have before him, at a glance, the experience of all". He shared his findings, encouraged others to contribute and created a worldwide project that has formed the basis of safe global maritime navigation ever since. He was the Tim Berners-Lee of his day, in a sense. Others examples are plenty: Carl Linnaeus, Alfred Russel Wallace, Charles Darwin, Dr John Snow. All worked to produce data and knowledge for the good of all. Our contemporary biological recording community follows a similar tradition. Friends collect data and share it. A loose, decentralised, network of people working together for the benefit of all.

But what does it mean to be **open** data?

Open data is certain information the creator or custodian has explicitly decided to freely share with others for the good of all. By definition Open Data should be "freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control." [3] In so doing, the data becomes a part of the Commons-1.

But here's the rub: in the past, before the advent of computer networks, we would publish data in books. In the case of biological recording we would publish atlases, journals and papers, sometimes

for a nominal sum, sometimes for free, but rarely with the intent of pure monetary gain. Publishers need their cut, and authors deserve remuneration for their efforts, but as the publications age, most would agree the true value lies in the data being easily accessible and usable for future generations. That is the spirit of Open Data. Where many see data as a commercial asset, to be exploited for business gain for the benefit of companies and shareholders, the Open Data ethos is that knowledge should be for *everyone*. However, it is difficult to pull data off the printed page and computerise it in such a way as to enable the powerful aggregation and analysis our digital age affords us. That's partly what Local Record Centres are for - we do much of the tricky digital dirty work. But digitising biological records into a database is only part of the story - the data also needs to be brought to a wide audience in a stable, sustainable way in order for the benefit to be realised. Bringing the data to wider audience stably and sustainably presents us with challenges.

Realising the potential of digital biological data

"If you love something, let it go."

-- Unknown

In much the same way the Web has enabled general sharing of information and documents, mostly for free and without permission, Open Data will unlock the potential of sharing structured data. Companies such as Google have become adept at "mining" the web, allowing us to find what we're looking for quickly and easily. But even Google with its amassed billions in advertising revenue have difficulty mining data from the "deep" and the "dark" web; that is, data locked up in inaccessible and disconnected places. To counter this and to enable the plunging of buckets into these deep, dark, rich wells of knowledge we need to do certain things.

We must make the data available on the Web.

We must make it available as structured, computer-readable data (E.g., Excel instead of a PDF or scanned pages).

We must use non-proprietary formats (E.g., CSV instead of Excel; open source software instead of commercially owned.)

Allow for data to be accessible at stable web addresses (URLs) in the same way most reliable websites are accessible at stable addresses (E.g., you can always access Google by visiting google.com).

Allow for data to be linked to other data so that records may be efficiently described. E.g., a taxon name should link to a canonical taxonomic database.

These are primarily technical concerns to be untangled by me and my technologist colleagues at the record centre. That's all part of what we do day in, day out. However, in order to tackle this thicket of technical challenge we also require some thinking, soul-searching and decision-making on the part of data-creators; i.e., naturalists and biological recorders. We need your permission. Some decisions to be made are:

Do I want to share my data and ensure future use for generations to come?

What data do I want to share and with whom?

Do I want to restrict access to certain data, and for how long?

The opening of data is not an all-or-nothing decision. We can be nuanced about it. Much, if not most, information contained on Web sites is copyright restricted and yet is still free-to-access. Much content has also been designated as part of the commons. Wikipedia and the StackExchange network are two notable examples. Plus many commons-licensed photos, videos, music and other media are made-available via sites such as Flickr, YouTube, Vimeo, SoundCloud, Wikimedia Commons and

more. Other sites such as The Guardian allow their content - over 1M articles going back over 10 years in addition to today's continuously updated content - to be used and remixed with permission.

So, we can put information and data online. We can designate some as a part of the cultural commons while retaining control over others. We can open data gradually over time as its sensitivity or commercial benefit wanes. We can control the spatial resolution we make the data available at (10km, 2km, 1km of full-resolution). We make these decisions explicit by applying a license to the appropriate data in the appropriate form and at the appropriate time. If we fail to explicitly decide how we wish for our data to be licensed in this way, then it remains locked in its default, copyrighted form for 15 years[4] at the very minimum.

The Creative Commons

"Creative Commons develops, supports, and stewards legal and technical infrastructure that maximizes digital creativity, sharing, and innovation."

If licensing data[2] seems like a dry, legal, complicated prospect, fear not: we have help at hand which makes it very, very easy. You may or may not have heard of Creative Commons before. Founded in 2001, they are a non-profit organisation devoted to expanding the range of creative works - and data - available for others to build upon legally and to share. To quote their vision:

"Our vision is nothing less than realizing the full potential of the Internet — universal access to research and education, full participation in culture — to drive a new era of development, growth, and productivity."

They realise this vision primarily through the creation of a set of licences. These legally-rigorous tools are free, easy-to-use, and provide "a simple, standardized way to give the public permission to share and use your creative work — on conditions of your choice." They provide the licensor with a flexible range of options from "all rights reserved" to "public domain"[5]. Further, they provide an easy way to select a license that suits you using their License Chooser:

<http://creativecommons.org/choose/>

Most critically, whichever one you choose, these licenses are easily understood by both ordinary people browsing the web *and* computers reading them in an automated fashion. So, as long as we at SxBRC are getting our bit right and making the data available online in the right format, and as long as a Creative Commons license has been applied, the world at large can find the data, easily determine under what conditions the data may be used, and then use it. That's a huge step in the right direction.

Creative Commons: Open Data

A Creative Commons license gives us the tools we need to grant rights to our data in a simple, clear way. But there are only a few varieties that truly make data "open" in the strict sense of the definition[6]. These are, broadly, Creative Commons Attribution and Creative Commons Attribution Share-Alike. These grant rights that allow for anyone to use the data for any purpose, so long as the creator is attributed. In that latter case, "Share-Alike" means that any derivative work based on the data must also be published under the same license under the same terms. Simple.

These liberal open data licenses are what we should be ultimately aiming for. They provide the basis for long-term, stable data publishing. If SxBRC were to become defunct, the licenses provide us with the legal framework necessary to ensure the data endures. It's the digital equivalent of donating a collection to a museum. But while they are to be thought of as the gold standard of our aspirations for opening access to data, it is still perfectly acceptable to start moving towards openness without going all-the-way just yet.

Creative Commons: Some Rights Reserved

A common license type with some rights reserved is Creative Commons Attribution Non-Commercial. This allows for the sharing of data, so long as it is not used for commercial purposes. This license already aligns neatly with the operational code of SxBRC: We charge for most commercial uses of data, while provide services for free to non-commercial customers and clients. Creative Commons offers further even more restrictive licenses and these are worth investigating too.

Our Recommendations

Being a resource-strapped record centre, we rely on just over a quarter of our income from commercial data requests. Being non-profit, we plough the proceeds back into running the centre and working with the recording community. The commercial data requests we receive are mostly formed of a small subset of the data we hold: protected and BAP species, bat and certain bird records, rare species and invasive aliens. Of these it is the contemporary records - anything from the last five years, say - that are of interest to commercial enquirers. Beyond those, a small number of records are excluded at the request of the recorder due to sensitivity. Public knowledge of sensitive records could be detrimental to the conservation of said species and therefore we hold back on these, at least initially. That leaves the vast majority of biological records stored in our database largely underused. So, how can be put the data to better use? Here are our initial suggestions:

Non-sensitive historical data greater than 10 years old should be released with an Open Data conformant attribution, share-alike license on the Web.

Non-sensitive, non-commercially viable data less than 10 years old should be released with a non-commercial, attribution, share-alike license on the Web.

Commercially viable data should only be published on the web at 10km or 2km resolution, but should continue to be made fully available on request from SxBRC under our standard terms. We will continue to charge for supply of this data.

Sensitive data will remain sensitive and permission for use will only be granted on a case-by-case basis.

In short, older data will be freely available; more contemporary data will be freely available, but only for non-commercial use; while data we derive our all important income from will be restricted, as will sensitive data. This is also known as a “freemium”[7] model. The only truly new things we’re suggesting here are encompassed by numbers 1 and 2. We believe making these categories of data more widely available will drive custom and reputation for the record centre while providing an important public good - the Sussex recorders’ contribution to the data commons. It will raise our profile, the profile of recording generally and ease administrative burden. The data will become more discoverable and more useful. Assigning licenses will also clarify what the data can be used for and how. We’re confident that this a positive step forward and very much in the spirit of the data sharing of times past and present.

We do not want to do this without the blessing of the data creators; that is, recorders. We have data going back hundreds of years with over 8,000 recorders - asking each and every one is an impossible task. So we’d like to propose a 2 point plan:

Allow for a 6 month consultation period for any recorder or group to come to us, discuss any aspect of the plans so that we may choose a suitable license together, OR choose to refrain from Creative Commons licensing altogether, in effect continuing arrangements we have at present.

After 6 months we shall assume you don’t object to the proposals and shall proceed to implement the data licensing suggestions as outlined above or as per the wishes of data owners.

We hope this plan seems reasonable. It should be emphasised: this is a draft plan and is likely to change. The idea is to give anyone the opportunity to opt-out while ensuring other data will be opened up, made discoverable and put to good use. We should re-emphasise, it is *your* data and so you have the final say. If you don't want to Creative Commons license it, please do let us know and we will happily exclude it.

We're pleased to say we already have willing and eager agreement from Patrick Roper, who has contributed one of the largest and most diverse datasets we hold. Hopefully many more of you will choose to follow along. As Isaac Newton famously wrote, "If I have seen further it is by standing on the shoulders of giants." Together we can provide the shoulders upon which the next generation will stand as they strive to protect our planet. Join us.

If you can any questions, please do get in touch with me, Charles Roper, at the Sussex Biodiversity Record Centre. My email address is charles.roper@sxbrc.org.uk

[1] "This is for everyone" tweet: https://twitter.com/timberners_lee/status/228960085672599552

[2] The Open Data Institute: <http://theodi.org/>

[3] Auer, S. R.; Bizer, C.; Kobilarov, G.; Lehmann, J.; Cyganiak, R.; Ives, Z. (2007). "DBpedia: A Nucleus for a Web of Open Data". *The Semantic Web. Lecture Notes in Computer Science 4825*. p. 722. doi:10.1007/978-3-540-76298-0_52. ISBN 978-3-540-76297-3.

[4] UK Copyright Service Factsheet No. P-01;
<http://www.copyrightservice.co.uk/ukcs/docs/edupack.pdf>

[5] Creative Commons Licenses: <http://creativecommons.org/licenses/>

[6] Open Data definition: <http://opendefinition.org/>

[7] Freemium: <http://en.wikipedia.org/wiki/Freemium>

[^1] "The commons were traditionally defined as the elements of the environment - forests, atmosphere, rivers, fisheries or grazing land - that are shared, used and enjoyed by all. Today, the commons are also understood within a cultural sphere. These commons include literature, music, arts, design, film, video, television, radio, information, software and sites of heritage. The commons can also include public goods such as public space, public education, health and the infrastructure that allows our society to function (such as electricity or water delivery systems). There also exists the 'life commons', e.g. the human genome."; <http://en.wikipedia.org/wiki/Commons> ↵

[^2] If you have no idea what "licensing" your data means, have a read of the ODI's excellent Publishers' Guide to Open Data Licensing: <http://theodi.org/guides/publishers-guide-open-data-licensing> ↵

FUNGI

by Martin Allison, Sussex Fungi Recorder

The season produced the best fruiting of woodland fungi for more than ten years, whereas grassland species showed poorly and erratically. Early autumn was dominated by **Brittlegill** *Russula* species with some sites supporting twenty species or more on a single visit. These were later joined by an impressive show of the closely-related **Milkcaps** *Lactarius* sps. Some woodlands topped 150 species of fungi on a single visit, a very rare event in recent years. Many species recorded were not particularly rare, but had not been seen fruiting for several seasons, so it was a little like meeting old friends.

Birchden Wood near Groombridge was a new East Sussex recording site, which I visited as Kent Field Club leader on the 5th October. This Forestry Commission woodland is mostly plantation, and we recorded 149 species on a four hour visit there. Twenty species of Brittlegill were found, including **Winecork Brittlegill** *R. adusta*, which has a distinct musty odour of old wine barrels. The species appears to be restricted to sands and gravels, where it associates strictly with **Scot's Pine** *Pinus sylvestris*. It is found scattered over the High Weald, but is very scarce elsewhere in the region. Ten species of *Lactarius* were recorded, including the showy **Tawny Milkcap** *Lactarius fulvissimus*, one of those many species failing to show in recent years. Amongst the smaller fungi recorded were *Ditiola pezizaeformis*, a scarce Sussex species growing on dead wood, and *Hymenoscyphus lutescens*, found on fallen cones of Scot's Pine, and a new county record.

Surveying at Lullington Heath continued from last year, but the grasslands supported far fewer fruiting species than in 2012. Some **Waxcap** *Hygrocybe* species did appear late season, albeit erratically, and five new species for the reserve were added, including the wonderfully named **Toasted Waxcap** *Hygrocybe colemanniana*. The most interesting was **Parrot Waxcap** *H. psittacina* var *perplexa*, a stunning brick-red fungus, and new for Sussex. Current DNA work on the Waxcaps suggests that many of the former varieties might well be true species, so that it is important to record the subtle differences noted in the field.

I joined the Hastings Botany Group at Fore Wood, near Battle, on the 14th October for our annual foray. We managed 72 species in just over two hours at this wonderful woodland, with several good finds amongst them. It was a surprise to record three species of **Otidea** *Hare's Ear*, growing relatively close to each other. These were **Tan Ear** *O. alutacea*, **Toad's Ear** *O. bufonia* and **Hare's Ear** *O. onotica*, which only share six Sussex sites between them: surely a case of under-recording. A very good new find for the reserve was *Hygrophorus unicolor*, which is also a new county record. The *Hygrophorus* genus has proved to be extremely scarce in recent years on local forays, especially when compared to the 1990's. **Foetid Parachute** *Micromphale foetidum* was also seen at Fore Wood, a very scarce Sussex species. As its name implies, it normally smells pretty revolting – described as fishy-garlicky - but this particular find was of the odourless variety *rufocarneum*. Copious fruiting of **Terracotta Hedgehog** *Hydnum rufescens* and **Horn of Plenty** *Craterellus cornucopiodes* finished off a very pleasing foray.

A visit to Brede High Wood on the 9th October recorded **Pale Milkcap** *Lactarius pallidus*, associating with **Beech** *Fagus sylvaticus*. This appears to be new for East Sussex, and only recorded in West Sussex at The Mens and Ebernoe Common. Three other uncommon species are worthy of note: *Collybia distorta* and *Mycena amicta*, both found in conifer plantations, and *Lentinellus cochleatus* var *inolens*, the scarce odourless variety of **Aniseed Cockleshell**.

Amongst other finds, the viscid but beautiful lilac-tinged *Cortinarius croceocaeruleus*, was seen with veteran **Beech** trees at Old Lodge Reserve, and was a new county record. A check of dead fallen leaves of **Holly** *Ilex aquifolium* in my Crowborough garden revealed several fruit-bodies of **Holly Parachute** *Marasmius hudsonii*. I have long been searching for this strange and distinctive species with

its spiked cap sporting long brown hairs – definitely the punk of the fungus world! There is one previous record each for East and West Sussex.

Vivien Hodge kindly supplied me with some highlights from her field visits, either with the West Weald Fungus Recording Group (WWFRG), or individual finds. **Snaketongue Truffleclub** *Elaphocordyceps ophioglossoides*, a rarity growing from the **False Truffle** *Elaphomyces granulatus*, was recorded from Marley Common, and the former appears to be a new Sussex record. *Epichloe bromicola*, found on *Bromus ramosus* at Whithurst Park is only the second UK record on the Fungal Records Database of Britain & Ireland (FRDBI), and again new for Sussex. Another notable find was **Yellowlegged Fanvault** *Camarophylloopsis micacea*. This small attractive species is yet another new record for Sussex, and is very rare in Surrey and East Kent. Finally, Vivien also recorded *Plicatura crispa* growing on a birch log at Monkmead Wood. Reports of this species in our region have all been post 2006, and it is reported from new sites across southern counties with each passing season, suggesting a fungus on the move.

Nick Aplin has supplied highlights from his year with the Sussex Fungus Group, and again they include a host of rare ascomycetes (cup fungi) as well as agarics. Winter foraging at Tilgate Park turned up *Cainia passerinii* on **Gorse** *Ulex europaeus*, a first for the UK; *Calycellina microspis*, growing on *Phalaris arundinacea* along the River Mole near Gatwick Airport, new for Sussex; along with *Karstenia loniceriae*, on **Honeysuckle** *Lonicera periclymenum*, with one previous UK record from Lancashire. Nick's records are too numerous to include here, but two rare macro-fungi deserve a mention. *Postia guttata*, growing on a **Spruce** *Picea sp.* stump at Eridge Rocks, was the first bona fide collection of this species in the UK, previously included on the Fungal Records Database of Britain and Ireland (FRDBI) "with reservations". The second find, was *Russula fuscorubroides*, again growing with **Spruce** in a disused field in Crawley. There are 10 scattered UK records on the database, and Nick describes it as strikingly pretty, which certainly fits its website images.

New and Interesting Ascomycetes, Coelomycetes, Hyphomycetes and Algal Records from West Sussex, 2013

by Howard Matcham, Sussex Microfungi Recorder

Surprisingly, the distinctive or colourful large terrestrial Cup ascomycetes have few published records from West Sussex so it was pleasing to receive from Dr Nick Sturt, Chairman of the Sussex Botanical Recorder Society (SBRS), the **Layered Cup** *Peziza varia*. This species has only been recorded twice since it first was found by the late Derek Reid in 1974; Nick had discovered this species in a dimly lit corner of his garage growing on lawn mower debris from the previous year. The **Palamino Cup** *Peziza repanda* I found on two occasions close to my home at Strettington, has not been reported previously this century; the first collection were seen on cut **Elm** *Ulmus procera* logs and on the second occasion after the Southern Electricity Board had trimmed Elm saplings from underneath high tension wires and chipped the wood into large piles deposited nearby. Finding several **Scarlet Elfcup** *Sarcoscypha austriaca var. austriaca* on cut **Hazel** *Corylus avellana* at Halnaker Park I was immensely surprised to find no previous records from the vice county, or for the congener, **Ruby Elfcup** *S. coccinea* with which it is often confused and recorded in error as the former species. A x20 hand lens will show that the former has the pale outer surface covered in coiled hairs and the latter with straight hairs, there are also microscopic differences; **Ruby Elfcup** is the scarcer of the two in Britain. Peter Jones (SBRS) had found one of these species at Amberley in 2011 but had not collected a specimen. Gravely soil beside the bridle path at Open Winkins had the attractive and distinctive **Orange Cup** *Melastiza cornubiensis* which is a first record for VC13.

Of the many discomycete species seen this year perhaps the most important has been *Trichophaea gregaria* found immersed in moss on decorticated conifer wood; this is a first record for Sussex and there has only been one previous record from southern England (Brookwood Cemetery, Surrey VC17

(2006)) since the first recorded occurrence of this species in North-east Yorkshire in 1899! Nearly all of the 43 published records for Britain have been from Coniferae or soil (probably thin soil over buried conifer wood) in conifer plantations.

Moist chamber cultivation of dung always produces interesting ascomycetes. I was walking my dog Barney, a Staffordshire bull terrier who accompanies me on all of my field research, and pushed for time before setting off on a shopping trip, I crossed the road in front of our house into a recently harvested wheat crop, where several very large broken straw bales had been bulldozed by farm machinery into a corner of the field. Barney's nose alerted him to Brer Fox and he took off at a fine pace; Brer Fox just had time to void his bowel with excitement, or fear, into the straw before the chase, giving me the opportunity to collect fresh material. Unfortunately I did not have my collecting equipment with me, so science before hygiene...out with the hanky! Placing the stool under a rose bush in the garden, I left it for a week and then placed it in moist chamber cultivation with, after a few days, most interesting results: *Ascobolus crenulatus*. This species has only one previous record from West Sussex from Charlton Forest in 1913! The substrate is not documented. *Ascobolus stictoides* has not been found previously in Sussex and there are very few records for either species from *Vulpes vulpes*, probably because most fimicolous mycologists do not collect carnivore stools.

The coelomycete *Melanconium castaneae*, as its specific epithet suggests, I found on dead twigs of a woodland sapling **Sweet Chestnut** *Castanea sativa*; it is the second British record and has been deposited at Royal Botanic Gardens Kew. This species is exceptionally rare throughout Europe with very few collections. I wrote about the distinctive coelomycete *Cheirospora botryospora* last year in Adastra 2012, p.10; this year I have found extensive colonies on **Common Ivy** *Hedera helix* stems on a fallen **Ash** *Fraxinus excelsior* in Eartham Thicket, south of Eartham village. There are superb microscopic images of this taxon on Malcolm Storey's website www.bioimages.org.uk The Virtual Fieldguide (UK), well worth viewing.

Dematiaceous (darkly pigmented) hyphomycetes are usually microscopic and although many can be seen clearly with the naked eye or hand lens, it is much more fun to search with the former. Having literature for identifying hyphomycetes is essential and most reference books give species and their hosts, an additional aid in identifying the species under the microscope. I have a reasonably sized **Beech** *Fagus sylvatica* in the garden, which I planted as a sapling when we moved to Strettington from Poling in 1981; picking up a fallen dead twig I scraped bark onto a microscope slide and found numerous specimens of *Asteromassaria macrospora* newly recorded for Sussex. All 17 published records from Britain are on *Fagus* twigs. *Tripasporium elegans* seen as a black 'stain' on a cut *Fagus* stump is an elegant species, as its specific epithet suggests, and under the microscope three or four septate arms joined to a rounded base are most distinctive, although a huge number of dematiaceous hyphomycetes are similarly armed. Copious and expensive literature is required to seriously consider studying the genera and species; with many additions to the West Sussex records from 2013, the above taxon is the second record from VC13 last seen in The Mens in 1985.

The terrestrial sub-aerial algal species *Phycopeltis arundinacea* I mentioned last year, and this year I found the species on **Box** *Buxus sempervirens* at the western side of Duncton College and according to Dr Fabio Rindi (Ancona, Italy) specialist in this genus, this is a new world host. To put this in context, I quote from Fabio's e-mail to me: "The key requirement for *Phycopeltis* is a habitat with plenty of humidity and shelter from (or limited exposure to) direct sunlight. As long as this requirement is met, *Phycopeltis* can grow on the leaves or stems of basically any vascular plant." This species is easily identified looking like small copper pennies on the upper surface of the host. Look at the website www.algaebase.org for images of my collections.

By April of this year the unprecedented high water table in the Chichester area had begun to subside, and the important seasonally flooded depression at Boxgrove, which had a depth of at least 10 feet at its deepest, became ideal for the freshwater red filamentous alga *Sphaeroplea soleirolii* to colonise the exposed surrounding grassy area, as the water slowly began to drain away. Visit www.algaebase.org for both habitat and habit images from this site which is the only site in England. This taxon is

exceptionally rare throughout Europe with a site in North Wales and another in Spain; the West Sussex colony is therefore possibly the most important for the taxon in Europe!

After the most incredible autumn for fungus diversity and quantity I will mention just a few of the most interesting records from the numerous species that I have recorded.

Tactile with serendipity and experience is how I stumbled over the moss *Ditrichum pallidum**, new to Britain: quite simply by following Barney's tail as he followed a scent trail through the forest. Returning to pay my respects in the autumn, I noticed a spoon-shaped (spathulate) orange jelly fungus on a Sweet Chestnut stump just one yard from the *Ditrichum* moss; *Calocera glossoides* (no recommended English name, but a Stagshorn) which has two previous records from VC13 and was last seen at Ebernoe Common in 1994. Just three yards from the *Ditrichum* moss a gregarious colony of **Ashen Chanterelle** *Cantharellus cinereus* which has three previous published records, 1882, 1932 and the last in 1985 from Slindon Wood. The area of my research is a approximately 2½ miles north or east of my house an area of 5 miles there and back that I can comfortably walk with Barney recording my two disciplines (bryology and mycology). Blanket coverage has had spectacular results with the moss mentioned above, a hyphomycete new to science, an ascomycete genus new to Europe and a further three fungus species new to Britain; the area has also had many species in the **Earthstars** Geastraceae, **Bird's Nests** *Geastrum*, **Earthballs** *Scleroderma* and **Puffballs** *Lycoperdon*, *Bovista* and *Calvatia*, and the minute **Shooting Star** *Sphaerobolus stellatus* with four previous records and last seen in 1976 at Slindon. My collection came from woodchips; species from all these genera were found in 2013 with the most uncommon being the handsome **Rosy Earthstar** *Geastrum rufescens* with an 11cm expanded fruitbody, this is the third VC13 collection of seemingly a genuinely rare species.

Having found the above moss new to Britain and having friends in the British Bryological Society asking me to reconsider retiring from Bryology, and despite publically announcing my retirement from Bryology, I have reconsidered and currently have returned to research at The Natural History Museum. I have been identifying recent bryophyte collections from Ascension Island with excellent and unexpected results, and I'm shortly to begin working on collections housed at NHM from Nigeria and Sierra Leone. At 71, so much for the quiet life I envisaged on retirement. Fortunately I remain (so far) in good health!

* I intend to give the colloquial name – Rough-Spored Ditrichum to *Ditrichum pallidum* representing the distinctive ornamentation of the spores under both light microscope and SEM.



Barney the Mycological Mutt

LICHENS

by Simon Davey, Sussex Lichen Recorder

The story of 2013 is all about **Golden Eyes** *Teloschistes chrysophthalmus*. On 23rd December 2012 I received an e-mail from a Hampshire lichenologist, one Mark Jackson who has to be rated as the uncrowned Golden Eyes king. The e-mail asked me for the current distribution and frequency of *Teloschistes chrysophthalmus* in East Sussex. He announced that he had found it on two bushes close to Woodingdean, and the e-mail was accompanied by a photograph. It was clearly *Teloschistes chrysophthalmus*. I gave him the information he wanted which was that it was the first Sussex record since the nineteenth century. We arranged to meet, and he showed me the two examples on New Year's Day 2013.

Before his e-mail my recent knowledge of Golden Eyes was of it being found on a fallen apple branch in Herefordshire, a single site in County Cork and I had been shown it recently on Hawthorn in a site in Guernsey. I contacted the Lichen Society Records Officer who had received recent records from Hampshire and the Isle of Wight. During his Christmas and New Year visit to Sussex, Mark Jackson found it in several more sites to the north of Brighton, and I visited one where it was particularly well developed. It is a beautiful lichen consisting of a series of golden branches, on the end of which is an orange disc which is surrounded by golden hairs. The well developed example made it look as though a tangerine had been impaled on a Hawthorn twig, when viewed from a few yards away.

Shortly after the New Year, I went off to Hampshire to a site which had no exact grid reference. Shortly after arriving I spotted a south west facing Hawthorn bush well lit by the sun, and sure enough, on it was an attractive example of Golden Eyes. Since then, Mark Jackson has found it in a number of new Hampshire sites. It is now known in all counties from Dorset to Kent.

Shortly after the New Year, Amanda, my wife, was looking at a Blackthorn bush less than a hundred yards from our back door. Suddenly the air went blue, followed by "You must come and look at this!"

I replied, "If it's that bad, I'm not sure I want to."

"Oh, you'll want to see this" she replied. I walked across, and she pointed out a lichen.

"That's *Teloschistes* isn't it?" She asked, and indeed it was. I cannot think why, but later on in the autumn it was vandalised, the branch on which it was growing had been twisted to death at the base, and the part of it that had supported *Teloschistes* had been removed with a knife. Why this happened, and who the culprit was, remains a mystery.

Teloschistes chrysophthalmus is almost always a twig species occurring on twigs belonging to the family *Rosaceae*. It has been found once on a branch fallen from the canopy in an oak wood. Being a twig species, it cannot have become established before the twig developed. This means that all examples must have arrived in South-eastern England very recently. The questions "where from?", and "why?" are hard to answer. It does occur in the Cherbourg Peninsular and Brittany, but is rare. Having lost it from our Blackthorn, I was anxious about the other East Sussex sites, but I am happy to say that following an e-mail from me, Mark Jackson has confirmed its continuing presence in his sites.

It is a very beautiful species, and should be looked for on rather isolated Hawthorn or Blackthorn bushes possibly, but not invariably within sight of the sea. The south or south west faces of the bushes are where the lichen will be found. The twigs of old apple trees may also be worth a look. A smaller, but much more common lichen *Xanthoria polycarpa* can be confused with it, but this never has the eyelashes. Finding more Golden Eyes in Sussex would be a great challenge, as would be a continued search for that pink churchyard species *Llimonaea sorediata* mentioned in last year's report.

MOSESSES, LIVERWORTS & HORNWORTS (BRYOPHYTES)

by Tom Otley, Sussex Bryophyte Recorder

A 'problem' I have had since starting looking at mosses and liverworts is that I keep finding good things in my local patch. I initially came to the conclusion this must be because that was where I was spending most time, but I'm beginning to wonder. Within a couple of miles of my house are quite rare things such as *Riccia subbifurca*, *Hygroamblystegium varium*, *H. humile*, *Platygyrium repens*, *Plagiothecium laetum* and *Ptilidium pulcherrimum*.



Platygyrium repens in abundance on a Willow branch in damp woodland in Framfield

But the most remarkable local find, very local as you'll see, happened in quite extraordinary circumstances. I had been invited to see an extremely rare moss in Wiltshire (*Didymodon glaucus*) at its only current British locality, although a long time ago it could also be found near Shoreham. Whilst there, I took the opportunity to see a well-known colony of the pleurocarp *Pylaisia polyantha*. This is a generally scarce plant with hardly any Sussex records. It's rather nondescript however and closely resembles a ubiquitous moss called *Hypnum resupinatum*. So I brought a piece home, checked it carefully and then looked for a specimen of the *Hypnum* to make a direct comparison. As it happened I didn't have any in my small herbarium so I went out the back door, 10 metres to the nearest apple tree (I only have two) and collected some presumed *Hypnum*. I compared the two and to my great surprise they were identical! I had to get it checked since *Pylaisia* had not been seen in East Sussex for over 50 years but it was correct. So I thought maybe it's common but overlooked because of its close similarity to the common moss, but since then, in spite of collecting numerous candidates, I have not found any more and have to conclude it really is quite rare but just happens to be in my garden. Framfield appears to be a special place for bryophytes.

I often go out with beginners and sometimes they ask me how I found something, particularly if it's small. Well the answer is because I'm expecting to find it. It's all a question of knowing the habitat. Bryophytes are one of the best indicators of habitat and many are very specific. So if walking on the chalk downs I know to look for *Dicranella varia* but not to bother looking for *D. heteromalla*, to give an example using common species. If in acid woodland then the reverse holds true. Sometimes you can be even more precise. At a field meeting in Kent I was lucky enough to spot some *Lophozia perssonii*, a rare liverwort with an unusual distribution in the country, preferring the east. It's a very beautiful plant too, albeit rather small. I noted its habitat quite carefully and started thinking where there could be anything similar in East Sussex. It was growing on small chalk pebbles on a spoil heap. The only place I could think of was a north-facing chalk quarry near Lewes where there is a scree slope. In common with all scree slopes, the biggest rocks fall to the bottom and, as you go up, the pebbles get progressively finer. I estimated that about two-thirds of the way up should be about right and I went there, climbing gingerly up the steep slope. I didn't stop until I got to the intended spot, picked up a few pieces of chalk and there it was, even smaller than normal. There's no suggestion the plant is spreading and it's probably been there for many years waiting to be discovered, but it was new for Sussex and effectively found by armchair botany.

It's been a good year for bryology in the country generally and particularly in the south. Sam Bosanquet has discovered a species new to Britain on the southern tip of the Isle of Wight; *Crossidium squamiferum*. Howard Matcham, or possibly his dog, found *Ditrichum pallidum* under beech trees not far from where he lives, on a dog-walk in fact (see page 12). I found *Pterygoneurum papillosum* on a Martello tower mound near Rye. Three new species for Britain in southern England in one year must surely not have happened for decades. Before deciding global warming must be responsible, you need to look at the individual finds more carefully. The *Crossidium* was growing on an inaccessible part of the cliffs, Sam is quite agile and it's quite likely he was the first bryologist ever to visit the spot in question. So it could have been there for years. It's significant that it's about the warmest spot in the country because this is a plant more at home in southern Europe. The *Ditrichum* is growing well on the remains of a tree stump but in otherwise unremarkable woodland. The sort of place you would take the dog for a walk but hardly the venue for a field meeting, say. So, again, it's quite likely the plant has been there for a long time just waiting for an inquisitive nose to find it. The *Pterygoneurum* is absolutely tiny; it's about the size of *Pottia davalliana* and indeed was collected as that species purely for checking. County recorders have to check critical species otherwise it would have remained undiscovered. Under the microscope it was clear it wasn't any species of *Pottia* and eventually its true identity was elucidated. This could easily have been missed and it's safe to assume it had been on those previous occasions when bryologists had visited the same spot. That's not to say the climate isn't changing, indeed it changes all the time, but these finds don't depend on it.

If you're attending the Adastra meeting, you may have come by train. *Tortella nitida* grows on limestone facing to the railway embankment just half a mile away at one of only two sites in Sussex, the other being old walls on the Goodwood Estate where it was discovered by Howard Matcham. The limestone on the embankment probably originated in Caen and presumably dates from when the railway was built when they had to import the stone to build the elaborate tunnel entrance at Clayton. The *Tortella* should be looked for in similar habitats. It has definite coastal tendencies too so maybe there are some old flint or limestone walls in Hove? In any case if you look for it on a dry day and use the photograph in the field guide as an aid you could strike lucky. I am always happy to check identifications, no matter how common the moss turns out to be.

Sometimes you go to a lot of trouble to see an unusual moss and then it turns up on your doorstep. I have already mentioned one such case but another is worth retelling. There's an area of South-east Wales where *Grimmia ovalis* occurs widely on church roofs. It likes the slightly base-enriched sandstone from that area which was used as a roofing material. So, on a visit to the area I duly found a roof within reach, easier said than done by the way, and there it was. It wasn't until a few months later that I had to take my car to the local garage in Heathfield that I happened to notice they have a tiled roof on their barn that is used as an office. The tiles are unusually bright in colour but I was

really only noticing the rounded cushions of a mid-green moss that I knew I had seen before. Fellow bryologist Tim Rayner lives nearby and knows the owners, so he was able to persuade them to dislodge a piece that was then easily confirmed as *Grimmia ovalis* and that was new for East Sussex. A more recent find from a church roof is *Gymnostomum aeruginosum* growing with masses of *Tortella tortuosa* on Horsham Stone at St. John's Church, Coolhurst, near Horsham. That would have been very difficult to see without the help of the gales of late October. Both plants are far from their strongholds in western Britain and lowland records of the *Gymnostomum* are virtually unheard of, but such oddities keep cropping up over the years and there is still scope for some more surprises.

Finally, *Trichocolea tomentella* is a very beautiful liverwort that has declined in the last 50 years in Sussex and has so far eluded me in our county. New enthusiast Brad Scott lives near Forest Row and was very excited to discover some healthy colonies of it in wet woodland nearby. I hope to be able to visit the site with him soon and see what else we can find. I'm always pleased to go to local spots with beginners or experts alike, it usually results in something of interest being discovered.

FLORA - VASCULAR PLANTS

by Paul Harmes (BSBI Recorder for East Sussex - VC14) & Mike Shaw (BSBI Recorder for West Sussex - VC13)

Recording towards our new Flora of Sussex has continued in 2013 with the addition of some 10,000 records, which allowing for the law of diminishing returns is exceptional considering we are only adding those new to a tetrad. 2014 will be our last year of recording for the Flora with the emphasis on targeted missing species and under-recorded habitats. From 2015 we aim to archive older data and resume date-class recording.

Again there has been a strong focus on critical genera with continuing expert help from David Allen and David McCosh. We had four *Rubus* field trips, producing many records including *Rubus norvicensis* new to Sussex and *Rubus arrheniiformis* new to VC13.

Over 100 *Hieracium* specimens were collected, the highlights being **Breast-toothed Hawkweed** *Hieracium mammidens*, last seen in 1902, **Sociable Hawkweed** *Hieracium consociatum*, the first record since 1956, two possible new sites for **Sharp-toothed Hawkweed** *Hieracium argutifolium*, recorded for the first time in 2012 since 1905 and a new site for **Red-tinted Hawkweed** *Hieracium angustisquamum*. Of the 31 *Hieracium* taxa ever recorded in Sussex we have records for 26 in the last two years!

One of the SBRS members, Elizabeth Sturt, is fast becoming expert in identifying *Callictriche* and *Euphrasia* so our records for these genera are increasing.

Interesting finds this year in West Sussex include a population of **White x Narrow-leaved Helleborine** *Cephalanthera x schulzei* (*C. damasonium x longifolia*) with both parents by Chalkpit Lane, near Chichester. This is probably the same site vaguely mentioned in Wolley-Dod's 1937 Flora of Sussex. **Six-stamened Waterwort** *Elatine hexandra* flourished in 2013, having last been recorded some 10 years ago, largely due to the dry summer exposing the lakeside mud at its two extant sites at Folly Pond, Forest Mere, and Shillinglee Lake. A deliberate search in Ratham Copse, West Ashling resulted in the re-discovery of one of only two colonies of **Water x Wood Avens** *Geum x intermedium* (*G. rivale x urbanum*), not seen here since 1987. A fine stand of **Meadow Thistle** *Cirsium dissectum* was found in a damp meadow in Henfield, an uncommon plant in Sussex.

In East Sussex, a survey of the Tutts Barn area near Eastbourne produced a re-find of a 100-year old record for **Bristly Stonewort** *Chara hispida*, **Blunt-flowered Rush** *Juncus subnodulosus* last reported in Wolley-Dod (1937) and **Fen Pondweed** *Potamogeton coloratus* last seen here in 1953. New vice-county records included **Coastal Daisy-bush** *Olearia solandri*, self-sown in several places along Eastbourne seafront, and the rare hybrid orchid *X Dactyloglossum mixtum* (*Coeloglossum viride x Dactylorhiza fuchsii*) on the golf course at Eastbourne, and also on a downland bank above Southease. **Tall Ramping-**

fumitory *Fumaria bastardii* at Bexhill was the second Sussex record since 1959 and **Vilmorin's Cotoneaster** *Cotoneaster vilmorinianus* was new to Sussex in 2012. Finally, as with *Elatine hexandra* in VC13, **Slender Mugwort** *Artemisia biennis* was prolific on the dried out mud around Arlington reservoir, having been absent for some years.

In 2010 Tony Spiers found a strange bramble at Whitehawk Hill in Brighton. This was finally confirmed last year as a *Rubus* hybrid *Rubus cockburnianus x idaeus* which was new to science. It was named in 2013 (NJB 2013: Volume 3, Issue 1, pages 21-23) as *Rubus x knappianus* A. Spiers & J.D. Arm. in memory of Alan Knapp the previous VC13 recorder who sadly died in 2010.

Now the recording stage nears completion we are concentrating our efforts towards publication of the Flora. We are researching suitable publishers and finalising a format for the book. Work continues on the introductory chapters and index, while the draft species accounts are being updated in line with the newest recording data. Historical research is perhaps one of the most time-consuming elements and this has included repeated visits to herbaria in Oxford, Bexhill and Portsmouth, extracting information from old botanical books and documents, and downloading records from the Herbaria at Home project.

Another major project we have undertaken this autumn is the updating of all our records to the new taxonomy and nomenclature adopted by Stace (2010). This has been very time-consuming but was essential as the new names will be used in the Flora.

The BSBI Threatened Plants Project is officially over, but we have been involved in a 'mopping-up' process for the sites not surveyed during the lifetime of the project.

Finally we report that Arthur Hoare has resigned from his position as assistant BSBI Recorder for VC13 and 14. Arthur has given many years of valuable service and Paul and I thank him for all his hard work. We are very pleased to announce that Matthew Berry, a SBRS member from Eastbourne, has been appointed by the BSBI to replace Arthur.

ORCHIDS

by David C. Lang, Sussex Orchid Recorder

Our hopes for a better orchid season after three poor years were once again disappointed. Many species failed to appear even in leaf, let alone in flower. It is likely that cold weather in the early part of the year checked the development of the flowering spikes on the underground structures, deferring their performance for yet another year.

White Helleborine *Cephalanthera damasonium* and **Narrow-leaved Helleborine** *Cephalanthera longifolia* were both recorded near Portslade reservoir, but of great interest was the finding of twelve flowering plants of the hybrid between the two species – the fourth record for Sussex.

Broad-leaved Helleborine *Epipactis helleborine* failed to flower at the main sites in Friston Forest and did poorly elsewhere.

Autumn Lady's-tresses *Spiranthes spiralis* flowered well at many sites, including a fine display of 850 on the lawns of a bungalow at Birling Gap.

Bird's-nest Orchid *Neottia nidus-avis* flowered very sparsely, with only a single spike to be found in Rewell Wood.

Frog Orchid *Coeloglossum viride* The most interesting record was of a small colony found on the edge of Eastbourne Golf Course (Bob Eade) where there was also a single spike of the hybrid *C. viride x Dactylorhiza fuschii*. This appears to be the first record of the hybrid in Sussex, while two weeks later I found another specimen on the Downs near Itford, where surprisingly the parent *C. viride* has not been recorded.

Fragrant Orchid *Gymnadenia conopsea* flowered well in most sites, with over 1,000 on the Downs near Itford and more than 500 of var. *densiflora* in Ditchling Beacon nature reserve.

Early Spider-orchid *Ophrys sphegodes* flowered sparsely in most of its Sussex sites, and var. *flavescens* was found on Castle Hill (Mike Chalk).

Lizard Orchid *Himantoglossum hircinum* flowered again at its location near Chidham.

Lady Orchid *Orchis purpurea* flowered again at Beachy Head.

Burnt Orchid *Orchis ustulata* An excellent flowering season for the colony at Caburn, with 1,450 flowering spikes counted. The late flowering form var. *serotina* failed to flower in any of its sites in Sussex.

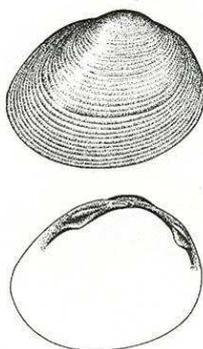
Common Spotted-orchid *Dactylorhiza fuchsii* performed well at most sites.

Southern Marsh-orchid *Dactylorhiza praetermissa* appeared (single plant) in a newly restored meadow at Barcombe where it had never previously been seen, the site being several miles from any previous records - so all is not doom and gloom in the world of orchids!

MOLLUSCS

by Martin Willing, Sussex Mollusc Recorder

The **Fine-lined Pea Mussel** *Pisidium tenuilineatum* is a very local species found in clean, unpolluted hard water rivers and streams; rarely in ponds. It lives where slower water flow allows the accumulation of fine sediments, typically at channel margins. In the UK it is RDB category 3 (rare) and was also a UK BAP priority species (countries now have individual national lists). The species is mostly confined to southern England and S.E. Welsh borders. Studies suggest that *P. tenuilineatum* is sensitive to levels of dissolved nutrients, especially elevated levels of phosphates that may lead to eutrophication; this may be one reason for its virtual absence from Sussex rivers. In southern England (south of Thames basin), it mostly occurs in very low numbers and at few sites in rivers draining into the Channel lying between the Meon in Hampshire and Otter in Devon. *P. tenuilineatum* has never been recorded in East Sussex, whilst in West Sussex it had only been recorded once, in 1970, from Harting Pond, near South Harting. Repeat surveys there in 2000 failed to relocate specimens; it was believed that pond management work in the mid-1970s had caused its loss and so also the only known population in the county.



As part of the Arun and Rother Rivers Trust's (ARRT) 'Western Rother Fishery Habitat Enhancement Project', works were undertaken (creation of fish refuges and gravel 'riffle' stretches) at various locations on a stretch of the River Rother and two tributary streams near Shopham Bridge. Prior to and following this work various surveys were undertaken to assess biological changes and in August 2013 led to the unexpected discovery of 'good numbers' of *P. tenuilineatum* at the lower end of the Sutton End Stream. This discovery reconfirms the presence of *P. tenuilineatum* in West Sussex. Surveys of other hard-water streams throughout Sussex may well identify further populations of this tiny bivalve.

In 2006 it was confirmed that, in the UK, the **Tree Snail** *Balea perversa* agg was actually the two species, *B. perversa* ss and *B. heydeni*. Both species are also found in Europe where *B. perversa* appears to be the more widespread with *B. heydeni* having a more restricted coastal distribution. Early distributional studies (post segregation) in the UK suggest that this situation is reversed, with *B. heydeni* being more widespread and *B. perversa* generally the scarcer species mostly present at more coastal locations. These two *Balea* species appear to occupy a similar niche, living on rocky outcrops and walls as well as on tree trunks and beneath bark. Conchological Society records show *B. perversa* agg to be very locally distributed in East and West Sussex with only two of the new segregates so far having been recorded; single *B. heydeni* and *B. perversa* in West and East Sussex respectively.

Why are *Balea* species so localised in Sussex? There is convincing evidence that in lowland England this genus has historically suffered declines indirectly due to SO₂ air pollution which, at higher levels negatively impacts upon lichens that *Balea* appear to feed on. This effect is apparently more marked on trees, the usual *Balea* habitat in Sussex. In the late 1970s David Holyoak undertook a detailed study (Journal of Conchology 29:319 – 323) of *B. perversa* agg distribution in the conurbation lying between Shoreham and Brighton and immediately surrounding areas. He demonstrated the snail to be absent from areas where depleted lichen populations indicated high SO₂ levels. With movement away from the most heavily polluted areas *Balea* were firstly recorded on those tree species with the most basic bark particularly Elder, but also Elm, Hawthorn and Apple, but avoiding tree species like Oak with acidic bark.

In October 2013 Graeme Lyons found six *B. heydeni* near Seaford Head living together beneath Elder bark, one of the tree species shown by Holyoak to be 'favoured' by this species. This maybe the first confirmed record of this *Balea* segregate from vice-county 14.

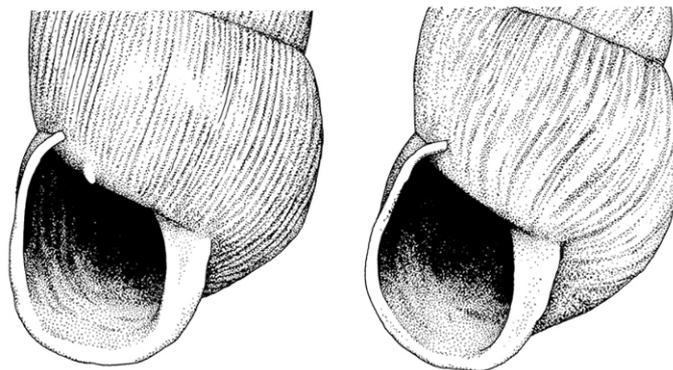
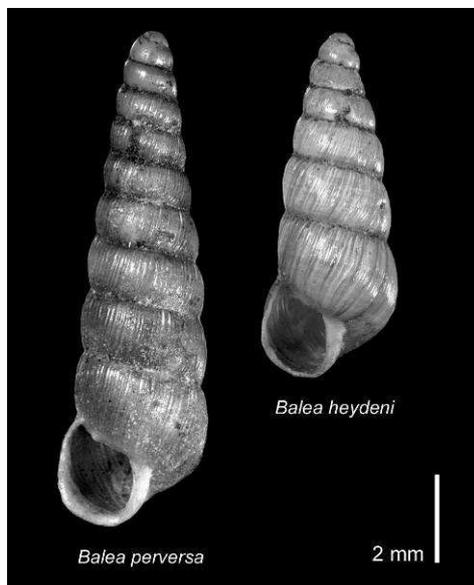
With a steady decline in levels of SO₂ since the 1970s and a consequent recovery of lichen populations, one might expect a spread of *Balea* spp in Sussex. There is clearly considerable potential work to be undertaken in the two vice-counties surveying possibly increasing distributions of *B. heydeni* and *perversa*.

I wrote previously in Adastra (2009: 24) about a new Sussex record of the scarce **Smooth Ram's-horn Snail** *Gyraulus laevis*. This small (4.5 – 6mm) species is locally distributed throughout the UK, living in both hard and soft, still waters. In lowland England it is typical of newly created habitats such as gravel pits. In November 2013 a further *G. laevis* population was found in a deep drainage ditch (draining to the River Arun) on the RSPB Pulborough Brooks. This is only the second post-1965 recorded population of this snail recorded in West Sussex, the other being further down the Arun valley in the WWT reserve at Arundel. *G. laevis* is equally rare in East Sussex with only two post-1965 records, one from an abandoned meander of the River Ouse south of Lewes and the second, a 2012 record from near Battle.

Another species mentioned in an earlier Adastra (2008: 19) is the marine **De Folin's Lagoon Snail** *Caecum armoricum*. This tiny mollusc (max 2mm) has been recorded in few places in England, typically living in saturated crevices in sheltered upper shore gravel. Due to its rarity and vulnerability, the species was given protection on Schedule 5 of the Wildlife and Countryside Act in 1992. In 2008 it was found at single locations in each of East and West Sussex (near Lydd and Pagham Harbour respectively). In March 2013 Natural England commissioned monitoring of the Pagham populations; the work was undertaken by Steve Wilkinson (recorder of the original population in 2007) and Lin Baldock. Living snails were again recorded from the harbour complex. It is likely that that this species occurs elsewhere in Sussex, but surveying is hampered by the difficulty of recording it in the field, thus requiring the removal of sediment samples for later laboratory processing.

Identifying *Balea* ('Tree Snail') species: A 'key-features' guide

	<i>Balea heydeni</i>	<i>Balea perversa</i>
Apical (top) shell whorls	Conical (a 'pointed' shell top)	Cylindrical (a 'blunt' shell top)
Complete shell shape	Whorls broaden quite rapidly – produce a more tumid shell	Whorls broaden quite slowly – produce a more slender shell
Shell surface sculpture	Wrinkled	Fine regular ribs
Shell surface colour	Yellowish	Brownish
Shell aperture (mouth)	No 'teeth' (shelly projections)	In <i>adult shell only</i> a small shelly denticle ('tooth') present on upper shell aperture (the <u>parietal</u> surface)
Animal's body (when seen crawling)	With dark head and tentacles but near transparent flanks and tail	Wholly dark
Abundance in Sussex	Believed to be the commonest species	Probably scarce
Main habitat (in Sussex)	For both species tree trunks and beneath tree bark (especially elder, elm, hawthorn, apple); occasionally the two species have been found living together .	



Ben Rowson: National Museum of Wales

DRAGONFLIES & DAMSELFLIES (ODONATA)

by Penny Green, Sussex Dragonfly Recorder

The first Odonata recorded on the wing in Sussex in 2013 was a **Large Red Damselfly** *Pyrrhosoma nymphula* at Woods Mill, West Sussex, on 10th April.

Common Club-tail by Julie Redford

In early July, attendees on a field trip up the Arun Valley were rewarded with one of the best **Common Club-tail** *Gomphus vulgatissimus* showings in many years, with six individuals, one of which was a female. Good numbers were recorded elsewhere in the Arun Valley including 11 teneral plus exuviae at a reliable site in late May, followed by immature individuals seen in nearby woods. On 5th June an immature male was recorded at Rewell Wood, West Sussex – it's not been recorded here since 1989. A mature and worn male Common Club-tail was spotted on 8th August; this is the latest record in the database for this species - the latest date we previously had on record for Sussex was 3rd July, and that was in 1991.



Good numbers of **Keeled Skimmers** *Orthetrum coerulescens* were observed on two sites on the Ashdown Forest, at the end of July (10-20 at Old Lodge SWT Reserve; 10 males and 4 in cop at Pippingford Park). The **Keeled Skimmer** is scarce in Sussex, with the Ashdown Forest being its stronghold - it's a rare occasion to record so many. It was good, therefore, to hear that a male was also spotted at a site in West Sussex, having not been recorded there since 2005.

On 20th August a **Lesser Emperor** *Anax parthenope* was spotted at West Rise Marsh in Eastbourne, and a couple of days later two were seen patrolling the area. This follows a few sightings of this species in the same spot in 2012; a pair in tandem was photographed ovipositing in to semi-submerged pondweed for over an hour, with occasional inspections by another male. We are keen to get down to the marsh in a kayak in 2014, to search for exuviae to see if we can confirm breeding on site.



An immature male **Red-veined Darter** *Sympetrum fonscolombii* was spotted down on Southwick Canal in early October. Then just as we thought that the dragonfly season was coming to an end... a beautiful male **Vagrant Emperor** *Hemianax ephippiger* was recorded at the Old Fort in Shoreham on 30th October and then again on 2nd November. This is only the second record we have for this species in Sussex - the last time was in 2011.

Vagrant Emperor by Dave Sadler

There was a distinct lack of **Small Red-eyed Damselfly** *Erythromma viridulum* records in 2013, with only six records in the county. I will end with good news that the **Small Red Damselfly** *Ceriagrion tenellum* was confirmed as a breeding species at Wiggonholt Common RSPB Reserve. This is a heathland restoration site, near to an existing **Small Red Damselfly** colony in West Sussex. Other species of note at Wiggonholt since the restoration include **Black Darter** *Sympetrum danae*, **Golden-ringed Dragonfly** *Cordulegaster boltonii*, and good numbers of **Four-spotted Chaser** *Libellula quadrimaculata* and **Emerald Damselfly** *Lestes sponsa*.

The last record of the year was of a **Common Darter** *Sympetrum striolatum* basking in the sunshine on 26th November at a West Sussex site.

GRASSHOPPERS, CRICKETS & ALLIES (ORTHOPTERA)

by John Paul, Sussex Orthoptera Recorder

Despite the rather late start to 2013 because of the cold weather, Ben Rainbow recorded a nymph of the elusive **Wartbiter** *Decticus verrucivorus* at Castle Hill on 19th May. Later in the season Ben also ventured onto the roundabout at Whiteways where he recorded **Rufous grasshopper** *Gomphocerripus rufus*. One wonders how long this chalk grassland specialist has been resident there. It is well known from Arundel Park and other localities on the Downs not far away.

Two species that are relatively new to Sussex, **Roesel's bush-cricket** *Metrioptera roeseli* and the **Southern Oak Bush-cricket** *Meconema meridionale*, continue to spread. *M. roeseli* was present in areas of course grassland in large numbers in 2013. In 2012 I found a freshly dead *M. meridionale* in the station car park at Shoreham-by-Sea. Although flightless there are anecdotal reports that this insect is attracted to brightly coloured objects and may be spreading by riding around on vehicles. My Shoreham record appears to be the first one for West Sussex. More surprisingly in 2013 I was out in the back garden late at night looking for insects by torchlight and came across an adult female of this species on the underside of a birch leaf. These records suggest that this species may already be quite widespread in the county.

LEAFHOPPERS & PLANTHOPPERS (AUCHENORRHYNCHA)

by Alan Stewart, Sussex Recorder for Auchenorrhyncha

By comparison with the disappointingly wet previous summer, that of 2013 was a bumper one for many groups of insects, and the leafhoppers and planthoppers were no exception. It is pleasing to report on a couple of interesting developments, including a new species for the county.

Eurysanoides douglasi is a tiny dark brown delphacid planthopper measuring only 2.5 mm long. It is one of seven exceptionally rare species that were declared Priority Species under the Biodiversity Action Plan. In Britain, it has been recorded from only six sites in Kent and two in Sussex: Castle Hill NNR and a chalk valley between Lancing and Steyning, the latter holding quite a substantial population of this planthopper. I did some work on this species in 2013 for Buglife, to establish its population status at the two Sussex sites and to try to establish its habitat requirements. The Sussex sites are both areas of chalk grassland, but interestingly the planthopper seems to be associated with comparatively tall and species-poor grassland, and specifically with Tor grass, *Brachypodium pinnatum*, which is probably its food plant. Tor grass gets a bad press amongst conservationists because of its tendency to outcompete smaller and more sensitive plant species, thereby reducing overall plant diversity, and its resistance to control by grazing, cutting, burning or herbicide treatment. It is not without invertebrate interest, however, as shown by its association with *E. douglasi* but also with other

planthopper species such as the nationally notable *Ribautodelphax pungens* which also occurs in the same area at Castle Hill. Tor grass is a widespread and abundant plant along the Downs in south-east England, so quite why the two planthopper species associated with it are so rare remains a bit of a mystery!

A second and very intriguing find for the year was that of a yellow-green cicadellid leafhopper called *Rhopalopyx* (previously *Paluda*) *vitripennis*. I recorded a single male of this species during routine sampling of experimental plots for insects on the chalk-heath vegetation at Lullington Heath NNR, on the 12th September. The curious fact about this species is that, whilst it is known from Ireland (in fact I have found it there myself), it has never been recorded in 'mainland' Britain. So, not only does this record represent a new species for Sussex, but also a new species for Britain! Reference to the continental literature suggests that it is common in northern Germany and France, so it is possible that its appearance in Sussex may be the result of individuals colonising from the near continent rather than an extension of its range from Ireland.

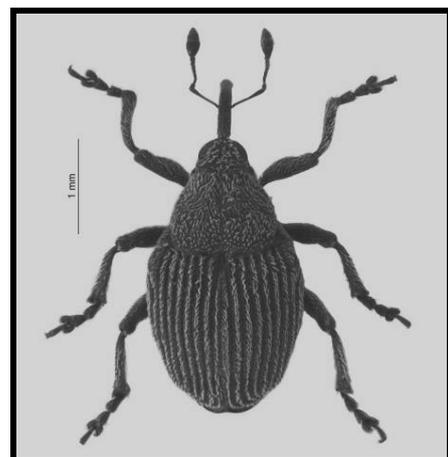
The rare **Pondweed Leafhopper**, *Erotettix* (previously *Macrosteles*) *cyane*, another BAP Priority Species, feeds on Broad-leaved pondweed, *Potamogeton natans*. Freshly emerged adults appear a sparkling topaz blue when sitting on the floating leaves of pondweed in bright sunshine. There are two sites in Sussex where it has been found. One of them is a small farm pond near Heathfield where a large population has been annually monitored since Peter Hodge first discovered it in 2002. I get regular updates from the farmer about how it is doing and I'm glad to say that it seems to be flourishing. The second site is a dew pond on the Downs just outside Lewes. I have annually monitored this population myself since it was originally discovered in 2007, but I have failed to see any of the leafhoppers for the last three summers. This follows the very dry summer of 2010 when the dew pond very nearly dried out completely and the pondweed was reduced to some rather pathetic looking plants in what had become a large muddy puddle. I fear that the Pondweed Leafhopper population, that had never been very large, must have perished that summer; the substantial distance to the nearest population would have precluded the pond from being recolonised by the leafhopper even though it has since been healthily full of water. This illustrates rather graphically just how vulnerable some small isolated populations of invertebrates can be to the vagaries of the British climate.

As always, there is more information about leafhoppers, planthoppers and related groups on the national recording scheme website (<http://www.Ledra.co.uk>), including basic identification keys, tips for beginners, references to the most important literature and announcements about forthcoming free identification workshops.

BEETLES (COLEOPTERA)

by Peter Hodge, *Sussex Coleoptera Recorder*

Following my discovery of *Ceutorhynchus inaeffectatus* new to Britain at Chithurst, West Sussex in June 2012 (Hodge, P.J. 2013. *The Coleopterist* 22: 20-23) the hunt was on to discover more breeding sites for this weevil. Its host plant **Dame's Violet** *Hesperis matronalis*, sometimes known as Sweet Rocket, is widely naturalised in both East and West Sussex, often growing beside shaded river courses or in wet woodland. David Lang told me that he had recorded Dame's Violet beside the River Ouse between Barcombe Mills and Isfield and after much searching a large plant was discovered to the south of Sutton Hall Lock on 20th June 2013. Here I collected the first East Sussex specimen of the pollen beetle *Meligethes matronalis* off the flowers, but there was no sign of *C. inaeffectatus*.



Ceutorhynchus inaeffectus

Later that day I visited Mary Greenwood, who grows Sweet Rocket in her garden in Norlington Lane, Ringmer, and together we searched the flowering plants. Within five minutes a weevil had dropped into my net and during the following week several more were found, proving beyond reasonable doubt that a breeding colony was present. The pollen beetle was also found in numbers. The original site in Hammer Wood was visited on 1st July and plants growing on the bank of the River Rother near Lods Bridge between Midhurst and Petworth, and also at Cissbury Ring, were examined without success. Reports from elsewhere in South East England suggest that the pollen beetle is likely to be widespread, but no records of the weevil have been reported; so Sussex remains the only county for this species. However, the two known colonies are 40 miles apart which suggests that further sites must surely be awaiting discovery.

Deborah Harvey has continued with her experimental use of pheromones to attract the large and supposedly very rare click beetle *Elater ferrugineus*. Following her discovery of the species at Parham Park in July 2012 visits were made to Parham, Petworth and Cowdray parks in July 2013, carrying tubes containing minute quantities of the pheromone in my shirt pocket, but without success. Then, on 21st August, a large insect flew noisily onto a picnic table in a private garden we were visiting at Maresfield, causing both surprise and excitement when it turned out to be a fine male *Elater*. I then remembered that I was wearing my "pheromone shirt" clearly demonstrating just how powerful this stuff is as an attractant for particular species.



Elater ferrugineus

On the 23rd August I visited Buxted Park, just two miles from Maresfield, in the hope of discovering more *Elater*. Although unsuccessful, a large *Wellingtonia* supported the Australian ladybird *Rhyzobius lophanthae*, a predator of scale insects, currently found mainly from the London district, but also recorded from Lewes priory grounds in 2009.

Also of interest is a specimen of the Great Silver Water Beetle *Hydrophilus piceus* from a weed-choked ditch on Pulborough Brooks (TQ058177) by Martin Willing on 19th November 2013. This species is well known from the coastal levels of East Sussex but there are hardly any records from West Sussex, one of the few confirmed sightings being by Martin Willing who found a larva at Amberley Wild Brooks more than 10 years ago.

Finally, Graeme Lyons recorded the very local wetland rove beetle *Stenus palustris* from Filsham reed-bed on 21st March 2013 and also added the weevil *Pissodes pini* to the Sussex list during a survey of Old Lodge nature reserve on Ashdown Forest on 25th April 2013.

The list of beetles currently recorded from Sussex now stands at 3020 species.

MOTHS (LEPIDOPTERA)

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

While 2013 will be celebrated for its butterflies for many years, it was far less stimulating for Sussex moth hunters - during the first half of the season the volume of native macro-moths was the lowest for decades. But then there was a turnaround, such that by the end of 2013 the number of moths in flight ended up being at their highest since 2004. All this activity enabled moth traps being run across the county to add four new species to our list. The most important fresh capture concerned a **Latreille's Latin** *Callopietria latreillei* trapped at Hurst Green by M. Phillips, this being only the second unquestioned example in the whole of the UK. The other inaugural records are of a **Sombre Brocade** *Dryobotodes tenebrosa* at Ferring, a **Butterbur** *Hydraecia petasitis* at East Marden, and the micro *Monochroa arundinetella* at Icklesham - the **Butterbur** has almost certainly been resident for some time, *M. arundinetella* may prove to be so, while the remaining pair of moths crossed the English Channel from the continent. There were also fresh vice-county records, these being the **Beautiful Marbled** *Eublemma purpurina*, and the micros *Coleophora clypeiferella*, *C. albidella*, *Cnephasia pumicana*, *Lyonetia prunifoliella*, and *Musotima nitidalis*, to East Sussex, and *Ethmia terminella*, and *Aphomia zelleri* within the political boundaries of West Sussex.

The colonies of our most recent nationally famous residents, the **Flame Brocade** *Trigonophora flammea* at Beachy Head and the fabulous **Clifden Nonpareil** *Catocala fraxini* in multiple settlements in the far east of the county, were each founded by European immigrants a few years ago, and both enjoyed beneficial seasons.



Latreille's Latin *Callopietria latreillei*
Hurst Green, 2013, Photo: M. Freeman ©

BUTTERFLIES (LEPIDOPTERA)

by Neil Hulme, Butterfly Conservation - Sussex Branch

The 2013 butterfly season started early, with sightings of **Peacock**, **Red Admiral**, **Small Tortoiseshell** and, perhaps most surprisingly, **Painted Lady** on New Year's Day. The latter was observed basking on the beach at Cow Gap and several more were seen at coastal locations in early January, indicating a modest but rather unusual mid winter influx. On 11th January the weather turned cold, curtailing sightings until a brief warmer spell encouraged the first **Comma** out of hibernation on 30th January. However, a return to icy conditions meant that we had to wait until St Valentine's Day until a **Brimstone** at Graffham Common made it a 'full house' of over-winterers.

Bitterly cold weather persisted through late February, March and well into April, with only occasional forays by the aforementioned species. An optimistic **Speckled Wood** did emerge from its chrysalis on 23rd February, continuing the national trend of advancing emergence dates for this species.

A warm and sunny 14th April triggered the first en masse appearance of hibernators. Even a few **Red Admiral** resurfaced, suggesting an increased tolerance of the sort of conditions suffered over previous weeks; prior to the late C20th this species seemed unable to cope with prolonged sub-zero temperatures. The numbers of **Small Tortoiseshell** were particularly encouraging and this species went on to have its strongest season for many years, finally recovering to traditional levels. The first **Small** and **Large White** were also seen, with the odd earlier records being attributed to artificially warm pupation sites.

Spring species gradually began to emerge, with the appearance of **Holly Blue**, **Orange Tip**, **Green-veined White** and **Grizzled Skipper** through the second half of April. Despite warmer conditions during the last week of the month and into early May, it was now clear that the season was running about three weeks later than the C21st average. This theme of a delayed season (by recent standards) would last until autumn.

As more species appeared through May it became evident that the 2012 wash-out had adversely affected some species to a much greater extent than others. Species including the **Green Hairstreak**, **Dingy Skipper** and **Wall** demonstrated remarkable powers of resilience and recovery, sometimes being recorded in numbers several times greater than during the previous season. Others, such as the **Small Copper**, **Small Blue**, **Brown Argus**, **Speckled Wood** and **Common Blue** did rather poorly, although the latter two species demonstrated the advantage of being multi-brooded and recovered by the end of June. Other species had a very average season, although the performance of all varied greatly between locations, suggesting that the extremes of 2012 weather had had a greater impact on some sites than others.

Warm and sunny conditions through the last week of May and first week of June gave the first indications of what was to become a very pleasant summer and autumn. This period also afforded some of our rarer spring species, such as **Duke of Burgundy**, **Pearl-bordered Fritillary** and **Wood White**, a prolonged opportunity for unhampered egg-laying.

The species which appeared through June showed a now characteristic pattern of late emergence dates (with regard to C21st average) and highly variable resilience to the previous year's adverse weather. The **Large Skipper** and **Dark Green Fritillary** did as well as the **White Admiral** did badly. Sadly, the situation with the **Small Pearl-bordered Fritillary** now appears critical. On a happier note, the **Silver-studded Blue** recolonised Lynchmere Common near Haslemere. Mid June saw modest influxes of **Painted Lady** and **Clouded Yellow**, and even a **European Swallowtail**, but these events were to be overshadowed later in the summer.

July started hot and sunny, and favourable weather became firmly entrenched. By now there seemed to be far more winners than losers and although the **Purple Hairstreak** continued its run of poor seasons, the **White-letter Hairstreak**, **Brimstone**, **Purple Emperor** and **Silver-spotted Skipper** emerged in good numbers. The **Purple Emperor** appeared widely across both counties and flew long into August, showing particularly well on the Knepp Castle Estate. The **Silver-spotted Skipper** appeared in several new areas of West Sussex, with at least attempted colonisations at Waterhall, Benfield, Mill Hill, Washington Pits, Cissbury Ring and Springhead Hill. Some of these butterflies appear to have hatched on site (e.g. Cissbury), so it seems that the spell of fine weather towards the end of an otherwise awful 2012 summer brought at least some benefits.

The first week of August was marked by good numbers of the fabulous **Peacock**, the first **Brown Hairstreak** of the year, and plentiful second brood **Wall**. However, it was the historical influx of exotic migrant butterflies and their offspring which would grab all of the headlines for the remainder of the season. These arrived along with large numbers of commoner migrants; downland coombes

suddenly filled with hundreds of **Large** and **Small White** on 3rd and 4th August and 140 **Clouded Yellow** were reported in a lucerne field at Thorney Island just a few days later. The latter species would go on to produce a few 'home-grown' butterflies in the first week of October.

The gigantic **European Swallowtail** was seen at Peacehaven and Friston Forest on 3rd August, Steyning on 8th August, Chichester on 11th August, and Arundel on 19th August. The cluster of sightings near Alfriston on 15th, 18th and 23rd August all relate to a single specimen (C. R. Pratt, 2014). This species laid eggs in gardens and allotments in both Chichester and Hastings, with a few caterpillars reaching maturity and pupating. It will be interesting to see if they survive the winter to produce adults next spring. Out-sizing even this goliath was the **Monarch**, seen coming off the sea at Widewater Lagoon on 19th August.

However, 2013 will always be remembered for the **Long-tailed Blue**. This very rare visitor arrived in early August and bred, much to the delight of the large number of enthusiasts who managed to see either the primary immigrants or their offspring. The first specimens (both egg-laying females) were seen at Arundel on 8th August and Pett on 9th August. The progeny of these voyagers began to emerge on British soil from mid September onwards, with the last specimen being seen at Brighton Racecourse on 24th October, close to where the species was first described in 1859. By then, adults had been seen widely between the Arun Valley and the far east of East Sussex, with a concentration around Brighton, Newhaven and Seaford. Colin Pratt (2014) has collated these events in detail, totalling a minimum of 65 individual **Long-tailed Blue** butterflies, of which 53 hatched on Sussex soil. He records that only 22 adults had been sighted in Sussex prior to 2013.



Long-tailed Blue

Having been distinctly scarce since the start of the year, we enjoyed a modest influx of **Red Admiral** at the end of October. Although some of these may have made the return journey in December, others stayed to tough it out. Sporadic sightings continued right up until the end of the year, through wet, windy, but very mild conditions. 2013 will be remembered as one of the more exciting years for butterflies.

References

Pratt, C. R., 2014: A Complete History of the Butterflies and Moths of Sussex – Supplement Number Three

Butterfly Conservation Sussex Branch website: www.sussex-butterflies.org.uk

TWO-WINGED FLIES (DIPTERA)

by Patrick Roper, *Sussex Diptera Recorder*

Sussex featured in two papers published in *Dipterists Digest* in 2013. The first by Adrian Pont and Steven Falk, concerned two of the five British species of *Polietes* (Muscidae), *P. meridionalis* and *P. lardarius*. The latter is a common, large Muscid in the British Isles, often seen on ivy flowers. The other and very similar, *P. meridionalis*, is not so common but is also under-recorded as many dipterists have not distinguished between the two species. Pont & Falk have rounded up all the evidence they could and give records of *P. meridionalis* from 11 UK counties and three in the Irish Republic. This includes eight records from East Sussex between 1886 and 2008, mostly in the Lewes area. They point out though that many collections have not yet been examined. The paper also gives comprehensive details of how to separate the two species.

P. meridionalis, though collected since the 19th century, is therefore announced in *Dipterists Digest* as 'new to Britain'. This illustrates one of the difficulties of recording: to which *Polietes* is, or was, the recorder referring?

Another Muscid featuring in *Dipterists Digest* in 2013 (Falk, Harvey, Smith, Wolton & Wyatt) was *Musca osiris*. This stood on the British list through one record from Seaford in 1875 and was not recorded again until one was captured by Steven Falk at Birling Gap near Eastbourne and another at nearby Deep Dene in 2006. Individual examples have now also been recorded in Essex and Devon and the species seems currently to be confined to places near the coast in the southerly parts of the country, perhaps another example of a response to climate change.

Found elsewhere from the Canaries to the Caspian Sea, *M. osiris* is reported as being a troublesome sweat fly in Egypt and this, perhaps, accounts for the specific name 'osiris' - an Egyptian god (not to be confused with the biblical Lord of the Flies or Beelzebub). It is not as common, however, north of the Alps. It increases to three the number of British species in the genus *Musca*: the other two being the common house fly *M. domestica* and the face fly *M. autumnalis*.

All of these species breed in dung of various kinds.

Among the other notable fly records of 2013, were *Ctenophora flaveolata* and *C. pectinicornis*, both striking yellow and black craneflies trying to look as though they might sting, the first from Levin Down and the second from Cooksbridge Meadows, both SWT reserves. Both species have early stages in dead wood.

Iping Common produced the strikingly marked **Mottled Bee-fly** (*Thyridanthrax fenestratus*) and the magnificent **Hornet Robber-fly** (*Asilus crabroniformis*), while at West Dean the rare *Agathomyia wankowiczii* was found by Nick and Elizabeth Sturt galling the bracket fungus *Ganoderma applanatum*. This is one of the very few British insects that cause galls on fungi and is thought to be a relatively recent arrival here.

I cannot mention all the people who have supplied Diptera records in 2013, but many useful records have come from Chris Bentley, Gordon Jarvis, Graeme Lyons, Alice Parfitt, Sam Buckland, Shaun Pryor, Jonathan Wood and Sam Smith. A splendid list of records has also come from the Old Lodge Invertebrate Survey.

SPIDERS (ARACHNIDS)

by Andy Phillips, Sussex BAS Regional Co-ordinator

Over the last few years I regularly receive in the post specimens of *Steatoda nobilis* and *Steatoda grossa*, or false-widow spiders as they are called, to confirm identity. On occasion this can involve large gravid females. I don't usually put living specimens, received through the post, straight in the freezer to be sacrificed to science. Keeping specimens alive for a few days or weeks can be beneficial to check for parasites, or studied for parenting behaviour. This has meant allowing female *Steatoda nobilis* to lay eggs and for the occasional spiderling to escape. My flat is now infested with *Steatoda nobilis*. They are everywhere, under window sills, behind cupboards, in some old boots, a female even set up home in my spice rack behind the turmeric. Luckily for the spider I rarely use turmeric when cooking so it was left alone to catch any pesky flies that entered the kitchen.



Whilst away on a collecting trip a very large female *Steatoda nobilis* set up home under the coffee table. After returning home I collapsed on the settee after a tiring journey home. Now as an arachnologist, collecting spiders throughout the UK and Europe for the last 15+ years, I'm used to spiders but the sight of that large dark 'Latrodectus-shaped' *Steatoda* dropping down from its web under the table and hanging just millimetres from my bare feet prompted a few expletives and some deep breaths to reduce the flow of panic induced adrenaline pulsing through my veins.

I have now moved out of that flat, for reasons unrelated to the spiders, but I do feel sorry for the people that move in after me. I hope they are not arachnophobes, poor souls! 'I'm sure I saw that spice rack move.'

Luckily for us softies in the UK *Steatoda nobilis* and *Steatoda grossa*, which cause so much media hysteria and school closing panic, are pretty harmless. They bite extremely rarely and the bite is usually less painful than a bee or wasp sting. One or two people, featured in the national media, have reported more serious reactions but are usually not able to confirm the species so it's never been able to reliably attribute these reactions to *Steatoda grossa* and *Steatoda nobilis*. And usually these reactions sound more like the symptoms of tegeranism which is caused by *Tegenaria agrestis* bites and not *Steatoda*.

Both of the large UK *Steatoda* species are becoming a lot more common in Sussex. Ten years back records of the native *Steatoda grossa* and the larger introduced *Steatoda nobilis* were confined to a small number of areas around Chichester, Brighton and Hastings. Both species are now much more widespread in Sussex.

Now for some more important spider news. The Iping and Stedham Common Invertebrate Assemblage Survey carried out in 2012, which recorded four new species for Sussex, 44 new species of spider for the nature reserve and published a combined list for the site of 204 species, prompted the organisation of two British Arachnological Society (BAS) field meetings in 2013. One at Iping and Stedham Common Nature Reserve and the other at Rye Harbour Nature Reserve. These are the two most arachno-diverse™ sites in Sussex, both Sussex Wildlife Trust reserves, for which a friendly rivalry has arisen to be crowned the best site in Sussex for spiders.

Both field meetings were well attended and some important records were made on both days. The field meeting at Rye Harbour Nature Reserve on 15th June was a bit of an endurance test for those that attended, due to the high winds whipping across the channel and tree-less shingle ridges into our faces. We huddled in some welcome shelter at the edge of the riverside saltmarsh and the first spider to be found by sieving tide litter was the Nationally Rare ground spider *Haplodrassus minor*. Also recorded were an assemblage of coastal shingle and saltmarsh rarities including the Nationally Vulnerable money spider *Trichoncus affinis*, found by Graeme Lyons on shingle and the Nationally Scarce comb-footed spider *Enoplognatha mordax*, found by Chris Bentley under tidal debris on the edge of the saltmarsh. Rye Harbour NR is the only site in Sussex for all three of these species.

The visit to Iping and Stedham on 28th September was also very rewarding. One of the highlights was the abundance of *Philodromus histrio*. This smartly patterned running crab spider is usually quite scarce and can be difficult to find on heathland in Sussex, but occasionally you get an abundance of immatures during autumn, especially on young regenerating heather or recently cut heather. The females require tall mature heather to build their nursery webs in heather tops during summer, but immatures seem to then spread out into shorter vegetation and young heather to hunt during autumn. This species is scarce in the UK, confined mainly to heathland, with a small number of populations of a distinct form found on saltmarsh. These observations between the different requirements of adult and immature *Philodromus histrio*, which I've also observed at other heathland sites in the South East, highlight the need for rotational management on heathland to ensure the continuity of all seral stages of heather for many heathland spiders. Carpets of even age heather don't quite cut it for spider conservation. The mosaic of sandy bare ground, scrapes, varied aged heather, wet heath, scrub, acid grassland, open grown pine and woodland edge at Iping and Stedham Common combine to make it such a special site for spiders.

Also recorded during the field meeting were *Evarcha arcuata*, *Ero tuberculata*, *Scotina celans*, *Anelosimus aulicus*, and *Araniella displicata* amongst a suite of heathland, pine and scrub species.

Not many species were added to either site during 2013 so the species lists for both still remains similar. The most significant new addition was the nationally scarce jumping spider *Sibianor (Bianor) aurocinctus*, found by Chris Bentley at Rye Harbour.

During 2014 we are organising more British Arachnological Society field meetings in Sussex. To find out about these events please check the British Arachnological Society website <http://wiki.britishtspiders.org.uk/index.php5?title=Events/Meetings> and the Sussex Spiders website <http://sussexspiders.tumblr.com/> for details. All are welcome at the field meetings, and there are usually two or three experts on hand if you want to learn more about spider field survey techniques and identification.

Other records of note for 2013 included the ant-mimic jumping spider *Myrmarachne formicaria* at the Crumbles near Eastbourne in July and *Uloborus walckenaerius* and *Dipoena tristis* from Ambersham Common also during July. During June *Nigma puella* and *Philodromus albidus* were recorded from Filsham Reedbed, Hastings and *Marpissa muscosa* (which is spreading throughout Sussex) and *Pseudeuophrys obsoleta* from Rye Harbour.



Uloborus walckenaerius - female



Uloborus walckenaerius - male

For any spider enquiries or identification help please contact me via my email threecubes@gmail.com or the new sussex spiders email sussexspiders@gmail.com

Unfortunately the great majority of spider species cannot be identified accurately from photographs, so to ensure the Sussex spider dataset remains high quality and accurate help with photographed spiders will need to be accompanied by a specimen for identification and confirmation.

BIRDS (AVES)

by David Howey, Recorder, Sussex Ornithological Society

The Sussex Ornithological Society's report for 2012

Records submitted to the Sussex Ornithological Society (SOS) for 2013 are still being received, so the final total is not yet known. The total for 2012 was 148,727 which was, with the completion of the Atlas surveys, predictably lower than in 2011. However, the total of 271 species reported was the highest ever.

Almost 200 records of scarce birds were submitted in 2012, of which 155 were accepted by the SOS Records Committee and a further 10 by the British Birds Rarities Committee (BBRC).

One species was added to the Sussex County list, which now stands at 398. The species added was a **Hooded Merganser**, which was present in Pagham Harbour from 30th October to 17th November. All previous sightings of this species were considered to relate to escaped birds, but this time the BBRC accepted the record as being a genuinely wild bird.

Other scarce species recorded during 2012 included a **Cory's Shearwater** passing Selsey Bill on 21st April (the first since 2000), a **Night Heron** at Pulborough Brooks on 23rd May, a **Squacco Heron** at Seaford on 21st June (only the eighth county record and the first since 2000), a total of five **Great White Egrets**, a **Purple Heron** at Church Norton on 4th June, a **Black Stork** over West Burton Hill on 17th July, at least 13 **White Storks**, a minimum of six **Glossy Ibises**, a **Red-footed Falcon** at Chichester Gravel Pits from 20th August to 8th September, two **Black-winged Stilts** at Medmerry on 1st June, a **Kentish Plover** at Rye Harbour on 3rd to 6th May, two **Temminck's Stints** (at Rye Harbour and Medmerry), a **Pectoral Sandpiper** at Pulborough Brooks from 30th September to 5th October, a **Terek Sandpiper** in the Adur Estuary on 24th July (5th county record), a **Grey Phalarope** at Seaford on 12th January, a **Long-tailed Skua** off Worthing on 29th August, two **Sabine's Gulls** (Rye Harbour and Hove), a minimum of seven **Bee-eaters**, six **Hoopoes**, 14 **Wrynecks**, five **Golden Orioles**, a **Red-backed Shrike** at Telscombe on 5th September, a **Shore Lark** at Cuckmere Haven on 30th October, a **Pallas's Leaf Warbler** at Pyecombe on 15th November, nine **Yellow-browed Warblers**, a **Hume's Warbler** at Beachy Head from 30th October to 4th November, a **Barred Warbler** at Pett Levels on 6th September, a **Melodious Warbler** at Beachy Head on 19th August, a **Paddyfield Warbler** at Pagham Harbour from 30th January to 13th March (5th county record), a **Great Reed Warbler** at Pett Levels on 2nd to 4th May (the first since 1998), three **Rose-coloured Starlings** (all adult males), a **Bluethroat** at Pett Levels on 12th November, a **Red-breasted Flycatcher** at Climping on 6th October, a **Siberian Stonechat** at Birling Gap on 20th to 23rd October (5th county record), a **Desert Wheatear** at Worthing on 24th-26th October (7th county record), a **Tawny Pipit** at Worthing on 20th May, a **Serin** at Beachy Head on 18th May, a **Common (Mealy) Redpoll** at Chilgrove on 16th February, a **Parrot Crossbill** at Blackdown from 22nd January to 18th February (only the second county record with the only other record dating back to March 1870) and a **Common Rosefinch** at Pett Levels on 6th October.

Some other species were recorded in significant numbers: a total of 112 **Woodcocks** in February, over 1,000 **Black-tailed Godwits** in Pagham Harbour in December, at least 38 **Short-eared Owls** during the early months of the year, 17 **Ravens** at Beachy Head in March, a total of 86 **Waxwings** in December with up to 5,500 **Fieldfares** and 3,500 **Redwings** in February. Also of note were the unprecedented movements of Arctic and Great Skuas in April. On 25th, 153 **Arctic Skuas** passed Birling Gap with a total of 260 **Great Skuas** passing Seaford on 25th/26th.

The cold, wet weather in April, May and June resulted in an extremely poor breeding season for many species. Ground nesting species were affected particularly badly with nests flooded or abandoned, while at Rye Harbour the situation was exacerbated due to predation by badgers. In most instances breeding success was described as low or poor. For example, the survival rate for **Grey Partridges** was only a third of that in 2011. Although there were over 50 pairs of **Avocets** in the county only seven young were reported, while the breeding success rates for **Oystercatchers**, **Little Ringed Plovers**, **Lapwings**, **Common Snipe** and **Common Redshank** were all low. Sadly, there were no reports of successful breeding by **Stone-curlews**. Terns appear to have been badly hit, with no reports of successful breeding of **Common Terns**; only one successful pair of **Little Terns** and just one **Sandwich Tern** chick reaching the fledged stage. Some raptors fared no better; there were **Honey-buzzards** at seven sites but only one pair bred successfully and only three of fifteen pairs of **Red Kites** successfully raised young. The few success stories included **Little Egrets** with 44 or 45 occupied nests, and **Marsh Harriers** which raised a total of eight young at two locations.

Further details of these, and other records, can be found in the *Sussex Bird Report 2012* published by the Society. Further details about the SOS, including updated Recent Sightings, and other features can be found on the Society's website: www.sos.org.uk.

SEA MAMMALS

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

It has been a good year for sea mammal sightings, especially for seals, recorded both offshore and visiting Sussex rivers.

Cetaceans

There were sporadic records of cetaceans this year, with species not always verified due to lack of information/experience of the observer. Main sightings are as follows: Probable **Bottlenose Dolphin** sightings at Seven Sisters 2nd March, Brighton Pier 24th March and Seven Sisters 30th March. A dead **Harbour Porpoise** was washed up at Peacehaven 20th March. Three **Harbour Porpoise** were seen off Seaford 28th March and Cooden Beach Bexhill 29th March. Probable **Bottlenose Dolphins** (four) were also observed at Seaford 4th April and one at Eastbourne 20th April.

I have received anecdotal sightings of a group of 10 **Bottlenose Dolphins** between Brighton and Shoreham during April, but 21st April I confirmed a sighting. A **Bottlenose Dolphin** was also reported via SOS off Selsey Bill the same day. A **Harbour Porpoise** was seen at Brighton Pier 16th May, a small cetacean at Littlehampton 14th July, four **Bottlenose Dolphins** at Royal Sovereign Shoals, Eastbourne 2nd Aug and Beachy Head 21st Aug. Over the years the great increase in human activity near shore appears to have had a negative effect on inshore movement of cetaceans.

Seals

An exciting year for seal observations with over 60 records that I have verified; these do not include the resident seals at Chichester or multiple sightings. While it is often difficult to know how many individual seals are observed compared to total number of sightings, I have been able to distinguish seven individual seals this year. The following is a summary of the seal sightings this year: A very young **Common Seal** was seen periodically in the lower reaches of the river Adur between the 7th and 18th Feb. On 24th an adult **Common Seal** was seen in the River Adur near Lancing College, and was still around on the 3rd March. The same seal (by photo identification) was also seen on the River Adur by the footbridge on 14th March and 8th April. There were also anecdotal reports. A **Common Seal** was also seen on the River Ouse at Piddinghoe, probably the same seal that visits each year.

A **Grey Seal** was spotted from the shore on 14th April at Worthing, and a **Grey Seal** was also seen at Cuckmere haven 27th April.

On the 17th May a **Grey Seal** turned up on Eastbourne Beach; it is thought to be 2-3 years old and had a few minor scrapes. Worryingly, the seal was allowing people to get fairly close, and it was originally thought it might just be tired due to the recent stormy weather. BDMLR medics have been monitoring it. The seal (nicknamed 'Trevor' by BDMLR) soon moved along the coast to Seaford where it preceded to moult on a public beach throughout June. BDMLR erected a barrier to protect the seal and the public. As it neared the end of its moult, 'Trevor' took occasional trips to Brighton Marina.

A **Common Seal** was observed visiting Shoreham during the first two weeks in July, in particular between the 6th and 9th July when it was seen every day, sometimes more than once. Most of these sightings were in the River Adur, the seal travelling over a wide area and has been seen near the Norfolk Bridge but also as far up river as the old cement works. Cuckoo Corner has also been a favourite site.

Also throughout July, a **Grey Seal** was observed off Lancing, Worthing and Littlehampton; on 5th July it approached a swimmer at Worthing and appeared to be a very inquisitive animal. On at least one occasion it was reported in the River Arun (with a photograph to back up that this was a **Grey Seal** - depicted at Ford eating a flatfish). The presence of this seal (and size) in the Arun coincided with 'Trevor' being sited at Selsey by BDMLR indicates that this is a different **Grey Seal**. On 7th July this **Grey Seal** was seen at Worthing, and at Shoreham on 10th July. On the 17th it was just off Littlehampton and on the 22nd July in the lower reaches of the Arun at Littlehampton. Verification has been possible with various photographs, from camera to mobile phone images, which have been a great help. The seal attracted a lot of interest and newspaper articles with my contact e-mail resulted in some useful sightings and photographs that helped to plot its movements. On the 6th July a **Common Seal** was at Cuckoo Corner in the Adur.

There were many sightings of the same **Grey Seal** in August, as far up river as Arundel and Pulborough including three fascinating close encounters with kayakers, and some great photographs and videos. There were also many records of the seal in the Arun near Littlehampton. Reports of this seal in the Arun continued until 26th September. A **Grey Seal** visited Shoreham Harbour on 19th and 20th September, and interacted with a dog. Also in September a juvenile **Common Seal** took up temporary residence in Shoreham Harbour and managed to get through the lock gates for a few days. The seal was a bit on the thin side but otherwise healthy; it was first seen on 2nd September and last seen on 15th September. I managed to isolate a marking on the head that could be used for future identification of this seal. A **Common Seal** was observed at Lewes (River Ouse) on 21st September, Saltdean on 23rd September and Peacehaven on 24th September, which may have been the same seal.



On 1st October a **Grey Seal** was photographed in Eastbourne Harbour. I have received anecdotal reports of seals visiting Eastbourne Harbour this year, some of which have been attended by BDMLR. A **Common Seal** visited Shoreham Harbour on 19th October. A **Grey Seal** was seen at Ford on 2nd November; a seal (species unknown) was reported at Goring beach on 19th November and was seen under Worthing Pier on 4th December.

Miscellaneous

Unusual sightings include a **Basking Shark** off the shore at Brighton on 2nd July and a dead Loggerhead Turtle washed ashore at Worthing on 4th December.

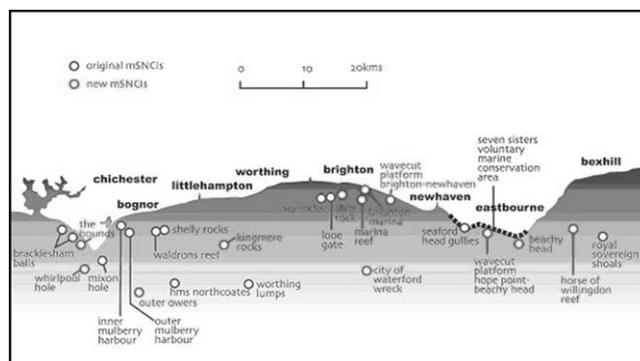
Please report any sea mammal sightings to seawatch17@yahoo.co.uk photos at <http://sussexmarinejottings.blogspot.com/>

SUSSEX MARINE CONSERVATION ZONES 2013

by Dr Gerald Legg

Marine conservation has been a long time coming in the UK and still has a very long way to go. Lundy, off north Devon, was Britain’s first Marine Protected Area, established as a voluntary marine nature reserve in 1971. In 1986, it was designated as England’s first, and what turned out to be only, statutory Marine Nature Reserve (MNR). 1980 saw Sussex develop the Seven Sisters Voluntary Marine Conservation Area (SSVMCA) along one of the few remaining lengths of undeveloped coast in South East England.

In 1988 the IUCN called on governments to ‘provide protection, restoration, wise use, understanding and enjoyment of marine heritage’. Just prior to this in 1987, the government initiated the Marine Nature Conservation Review ‘...to provide a comprehensive baseline of information on marine habitats and species, to aid coastal zone and sea-use management and to contribute to the identification of areas of marine natural heritage importance throughout Great Britain.’ In order to assist in gathering data the Joint Nature Conservation Committee (JNCC) utilised the experience of the Marine Conservation Society (MCS) that set up Seasearch in the 1990s (initially carried out in Scotland, soon after in Wales, Sussex 1992 and Dorset 1995). The main aim of Seasearch, which uses volunteer sports divers to gather data, is to map the various types of seabed found in the near-shore zone around the whole of the Britain and Ireland and record what lives in each area, establishing the richest sites for marine life, the sites where there are problems and the sites that need protection. Sussex Seasearch recognised a number of significant marine sites and designated these as Marine Sites of Nature Conservation Interest.



The County has rich and varied marine life associated with the diverse geology and includes a number of nationally and internationally important habitats. The dominant seabed type is cobbles,

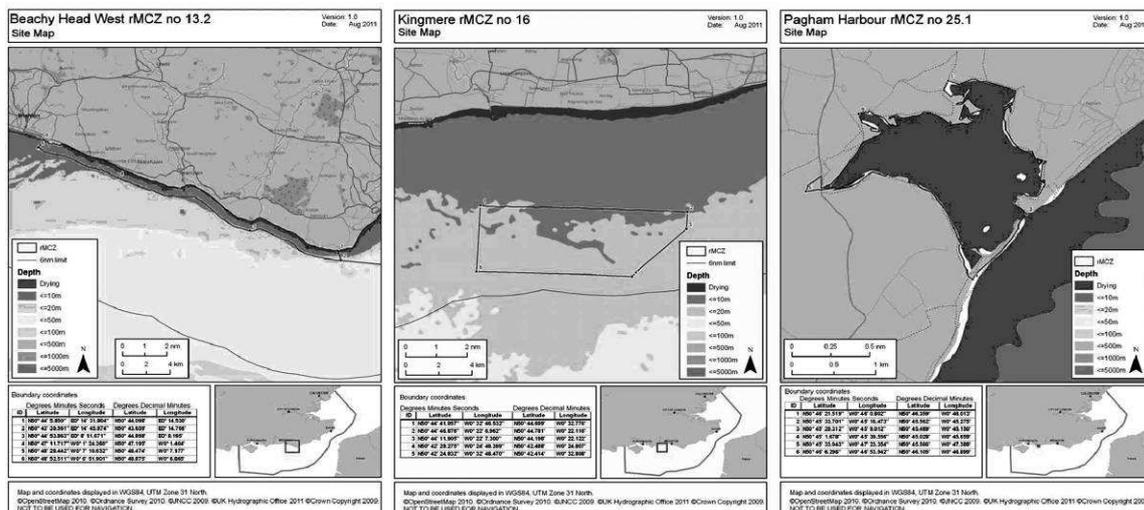
pebbles and other sediments. The familiar chalk cliffs show themselves below the sea as ancient gullies off Seaford Head around to Beachy Head. Sublittoral north-facing cliffs, rising to 3 m, occur off Brighton, Hove, Worthing and Littlehampton. Exposures of chalk bedrock crop-up amongst the cobble/pebble sediments. Outcrops and boulders of sandstone and calcareous sandstone occur off Bognor, Littlehampton, Selsey and west and south-east off Eastbourne forming reefs and exposures amongst areas of sediment. Clay exposures notably occur off Selsey with the deep Mixon Hole riddled with piddock holes. In some areas masses of the introduced *Slipper Limpet Crepidula fornicata* form its own biogenic habitat of shells. Isolated areas of biogenic reef formed by the *Ross Worms Sabellaria spinulosa* also occur. The aforementioned are natural substrata; there are also many artificial ones particularly since Sussex has one of the most heavily wrecked coasts in the UK. Natural abhors a vacuum so any new or exposed substrate is soon colonised. Numerous sunken ships offer refugia and niches for a rich variety of animals. Other concrete and metal structures such as the sunken Mulberry Harbour caissons off Selsey/Bognor, piers breakwaters marinas and harbour walls also offer opportunities for life.

In April 2009 the government published 'Delivering Marine Conservation and Zones and European Marine Sites: A draft strategy for marine protected areas.' A strategy setting out a vision and framework for marine protected areas in territorial waters adjacent to England and UK offshore waters (adjacent to England Wales).

In order to identify possible marine conservation zones nationwide consultation processes were organised. The coastal areas were divided into a number of regional groups; Sussex and part of Kent were grouped together under 'Balanced Seas', made up of stakeholders including fishermen, the aggregate industry, harbours, anglers, those with an interest in yachting, kite surfing, surfing, scuba diving, the wildlife trusts etc. To assist stakeholders, in March 2010 Natural England and JNCC published the Ecological Network Guidance to regional stakeholder groups on identifying Marine Conservation Zones:

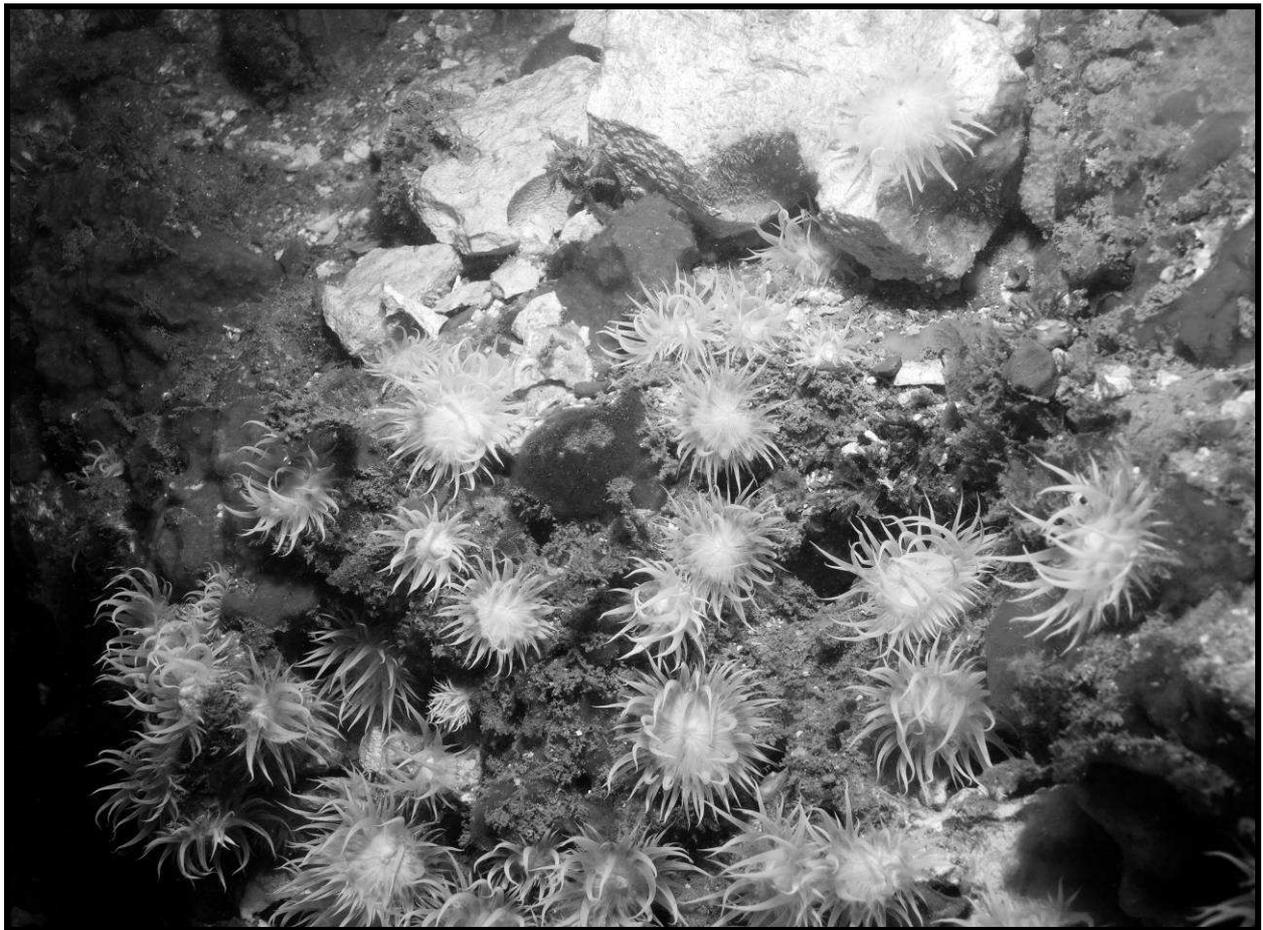
'MCZ identification should be based on the best available scientific evidence. Lack of full scientific certainty should not be a reason for delaying decisions on site recommendations. - MCZ identification should take account of local and lay knowledge.'

Stakeholder meetings went on throughout 2010 and 2011. A number of sites were offered-up for protection: Royal Sovereign Shoals (Beachy Head East), Seven sisters (Beachy Head West), Worthing Lumps (Kingmere), Mixon Hole (Selsey Bill and the Hounds) Pagham Harbour (italics denotes accepted sites; note some name changes). Despite strong support and evidence an addition site, the SW Rocks Complex (off Brighton/Hove) was rejected and not put forward. During 2012 the final input from the Balanced Seas stakeholder group was analysed.



From Balanced Seas draft final recommendations August 2011.

Out of the 127 sites put forward nationally, the Government has sadly only accepted 27 of which three are in Sussex: Beachy Head West, Kingmere and Pagham Harbour. Tragically their aim 'for the establishment of an ecologically coherent network' of marine sites appears to fall short. However the process of gathering further data on the sites and determining the sites' management continues as does data gathering on 'rejected' sites including Selsey and the Hounds, SW Rocks Complex and Beachy Head West. In the future these too may gain protection and extend the 'coherent network'. In the marine world we are at an early stage in the development of site conservation (and lag behind many other countries) perhaps akin to 1949 when the terrestrial environment was coming to grips with conservation and the development of Sites of Special Scientific Interest. Let us hope that this beginning will provide a foundation upon which we can protect, enhance and build up our rich biodiverse marine heritage.



Kingmere Reef: Sponges, worms, seamats and Sandaled Anemone. Gerald Legg/naturaimaging 2013.

SUSSEX MARINE CONSERVATION ZONES 2013

By Ian Tittley, Sussex Marine Algae Recorder

During 2013 the Sussex Wildlife Trust organised nine Shoresearch visits to sites along the Sussex coast. I was able to attend four of these in East Sussex and participate in the transect and quadrat surveys, and record the marine algae present. Sites I visited were: the intertidal chalk reef at Saltdean (8 May, TQ384017), the intertidal chalk reef to the east of Cuckmere Haven (8 April, TV521972), the intertidal sandstone reefs of the Pound to the west of Eastbourne (17 September, TV602967), and the

foreshore at Pett Level (20 August, TQ889131, 889129, 891130). A Seasearch diving survey was undertaken on the Royal Sovereign Shoals (2 August 2013, TV714967) east of Eastbourne and south of Bexhill at a depth 6.4 m; I am grateful to Bryony Chapman (Kent Wildlife Trust) and Gerald Legg (marine recorder, SWT) for algal specimens collected during this dive. Species recorded are listed in the table below; voucher specimens for some have been deposited at BM. Symbols used in the table are: + for present, ? for a provisionally identified species, and d for a drift (unattached - washed ashore) record.

Species	Saltdean	Cuckmere Haven	The Pound Eastbourne	Royal Sovereign Shoal Offshore	Pett Level
Rhodophyta – red algae					
<i>Aglaothamnion hookeri</i>	+	+			
<i>Ahnfeltia plicata</i>		+			
<i>Brongniartella byssoides</i>				+	
<i>Calliblepharis ciliata</i>			d	+	
<i>Caulacanthus okamurae</i>	+	+	+		
<i>Ceramium ciliatum</i>	+				
<i>Ceramium cimbricum</i>			+	+	
<i>Ceramium deslongchampsii</i>		+			+
<i>Ceramium gaditanum</i>	+	+	+		+
<i>Ceramium secundatum</i>				+	
<i>Ceramium siliquosum</i>	+				
<i>Chondria dasyphylla</i>	+				
<i>Chondrus crispus</i>	+	+	+	+	+
<i>Colaconema daviesii</i>			+		
<i>Corallina officinalis</i>	+	+	+		+
<i>Cryptopleura ramosa</i>	+	+	+	+	
<i>Cystoclonium purpureum</i>	+	+	+		
<i>Delesseria sanguinea</i>				+	
<i>Dilsea carnosa</i>	+	+	d	+	
<i>Erythrotrichia carnea</i>			+	+	
<i>Furcellaria lumbricalis</i>		+			
<i>Gelidium pusillum</i>	+	+	+		
<i>Gracilaria gracilis</i>		+			
<i>Gracilariopsis longissima</i>	?	?	?		
<i>Gymnogongrus crenulatus</i>			+		
<i>Gymnogongrus griffithsiae</i>		+			
<i>Halarachnion ligulatum</i>				+	
<i>Halurus equisetifolius</i>		+	+		
<i>Hildenbrandia crouaniorum</i>			+		
<i>Lomentaria articulata</i>	+	+	+		
<i>Mastocarpus stellatus</i>	+	+	+		

<i>Membranoptera alata</i>	+		+		
<i>Osmundea pinnatifida</i>	+	+	+		
<i>Palmaria palmata</i>	+	+	+		d
<i>Peyssonnelia</i> sp.	+	+			
<i>Phyllophora pseudoceranooides</i>			+	+	
<i>Phymatolithon lenormandii</i>	+	+	+		
<i>Plocamium cartilagineum</i>		+	+		
<i>Plumaria plumosa</i>			+		
<i>Polyides rotundus</i>	+				
<i>Polysiphonia atlantica</i>			+		
<i>Polysiphonia fibrillosa</i>			+		
<i>Polysiphonia fucoides</i>	+	+	+		+
<i>Polysiphonia nigra</i>	+	+			
<i>Porphyra linearis</i>		+			
<i>Porphyra purpurea</i>	+		+		+
<i>Porphyra umbilicalis</i>			+		
<i>Pterosiphonia pennata</i>	+		+		
<i>Rhodymenia holmesii</i>			d		
<i>Rhodophyllis divaricata</i>	+				
<i>Rhodothamniella floridula</i>	+	+	+		
<i>Spermothamnion strictum</i>		+			
Ochrophyta (Phaeophyceae) - brown algae					
<i>Chorda filum</i>					d
<i>Cladosephus spongiosus</i>	+	+	+		
<i>Colpomenia peregrina</i>			d		
<i>Desmarestia aculeata</i>				+	
<i>Dictyota dichotoma</i>	+		+	+	+
<i>Ectocarpus fasciculatus</i>	+				
<i>Ectocarpus siliculosus</i>			+		
<i>Fucus serratus</i>	+	+	+		d
<i>Fucus vesiculosus</i>	+				+
<i>Halidrys siliquosa</i>			+		
<i>Laminaria digitata</i>	+	+	+		
<i>Petalonia filiformis</i>		+			
<i>Pylaiella littoralis</i>	+	+	+		
<i>Saccharina latissima</i>	+	+	+		
<i>Sargassum muticum</i>	+				
<i>Sphacelaria fusca</i>			+		
<i>Sphacelaria</i> sp.	+				
<i>Taonia atomaria</i>				+	

Chlorophyta - green algae					
<i>Blidingia marginata</i>		+	+		
<i>Blidingia minima</i>		+	+		
<i>Chaetomorpha ligustica</i>			+		+
<i>Chaetomorpha linum</i>	+				
<i>Cladophora rupestris</i>		+	+		
<i>Cladophora sericea</i>	+	+	+		+
<i>Ulothrix flacca</i>	+				
<i>Ulva compressa</i>		+	+		
<i>Ulva lactuca</i>	+	+	+		+
<i>Ulva linza</i>					+
<i>Ulva prolifera</i>	+	+	+		+

OCEANS, CLIMATE CHANGE & SUSSEX

By Stephen Savage, Biologist, Environmental Educator and Wildlife Author

With the push for Marine Conservation Zones, and recent designation of the Beachy Head West Marine Conservation Zone in Sussex, the marine environment is deservedly receiving a lot of attention. Having been involved in the marine environment for about the last 35 years as a biologist and an environmental educator, it is heartening to see the marine environment getting much needed attention. In fact, the local marine environment is also a major part of the Brighton Biosphere Bid.

In Sussex we are very fortunate to have not only a diverse patchwork of terrestrial habitats, but our coastline and offshore marine sites are equally as diverse and fascinating. Sussex Sea Search has methodically mapped marine species and habitats in Sussex waters and contributed much to our understanding of the marine environment.

But of course, the marine environment off Sussex is part of a complex system of seas and ocean basins that make up the global ocean. More than just home for a rich and fascinating biodiversity, the oceans are a driving force of the planet – covering 2/3 of the earth’s surface and 95% remains unexplored. The ocean controls weather, and moderates our climate by dominating the Earth’s energy, water and carbon systems. The ocean absorbs much of the solar radiation reaching Earth and distributes this stored heat across the globe. The ocean produces 50% of the oxygen and is an integral part of the water cycle and is connected to all of the earth’s water reservoirs via evaporation and precipitation processes. Much of the freshwater that falls on Sussex comes from the Atlantic Ocean.

In early September I was invited to a marine educator’s conference at Plymouth University, jointly run by the Marine Biological Association and the European Marine Science Educators Association; the focus was ocean literacy. Ocean literacy (OL) is an understanding of the ocean’s influence on you and your influence on the ocean. Ocean literacy was started in the USA by a group of scientists and educators who formed a series of Ocean Literacy Principles relating to the importance of the ocean. The aim of the conference was to start the facilitation of OL in the UK and Europe. The first two days of the conference were a typical conference format attended by educators, scientists and students from 15 different countries. The results of the workshops were taken forward and formed the start point for Day 3 and 4 to look at bringing OL into the UK and also into the UK school’s curriculum (it has already been adopted by the USA K12 curriculum). The participants in this part of the conference were the representatives of the lead organisations, 23 OL experts funded by the EU (including myself) and a representative of the EU.

One of the major aims is to make available the wealth of knowledge of ocean scientists and disseminate it to the public in a format suitable for their understanding, ranging from school to special interest groups and the general public. Understanding the ocean is no longer a matter of curiosity, but something our very survival hinges upon.

A major OL focus for the school's curriculum and citizen science was to link real science and scientists, with school children and the general public. A project I run from the Shoreham Beach Local Nature Reserve looks at Shoreham Beach as part of the global ocean as a celebration of biodiversity, but to also looks at how global marine problems may impact Shoreham Beach. This is achieved in part by creating links with scientists around the world, with the help of a travelling bear I have been sending to real locations which are then shared with primary schools (and the information and links used with the secondary and citizen science aspects of the project). The travelling bear creates snapshots of real events in global locations, including the Hawaiian Islands, mainland USA, South Africa and Antarctica so far. The character has sat on the Antarctic ice with penguins, come face to face with great white sharks, dived on coral reefs and ship wrecks (with a real diving bell built by NOAA as part of his 7 month visit to their marine reserves). There was a time that if it is in a newspaper then you knew it was true. Nowadays this is no longer the case, so the aim was to link first hand with marine scientists, climatologists, marine reserves, and marine rescue centres. It was because of this project that I was invited to share this cross curriculum approach to science, and understanding of marine scientific issues at the above conference.

The project also works well as a citizen science project which I have taken to a variety of events, and has proved a great communication tool. Due to movies, many people are expecting a change on the scale of the movie blockbuster 'The Day After Tomorrow'. In fact a one degree sea temperature change can trigger a tropical storm, or cause coral reefs to start to die. The challenge is to raise awareness of these almost invisible changes that can trigger great changes. The problem created by plastic pollution is very disturbing and very visual so many people can easily relate to this issue.

Globally, scientists are predicting drier summers and wetter winters, an increase in tropical storms and changes in the driest and wettest locations on our planet. How this will impact Sussex is harder to predict. However, biological recording can play a very important role in understanding the effects of climate change and SxBRC records can be used to help identify changes in species populations, abundance and also how their geographical range may be changing as a result of climate change. Animals (and plants) are often much more sensitive to small changes. The main concern is the speed our climate is changing.

At the marine conference it was decided that OL was for everyone, as we all rely on the ocean's influences and, to varying degrees, we all have an impact on the ocean.

You can find out more about the project via the Shoreham Beach Education Page
<http://www.fosbeach.com/education-on-shoreham-beach/>

RECORDING WEEKEND AT THE KNEPP ESTATE

by Penny Green, Sussex Biodiversity Record Centre

On the weekend of 1st and 2nd June, there was a sunny summer gathering of over 60 biological recorders at the Knepp Castle Estate's re-wilding project, travelling from all over the country to be present at an exciting, and sometimes gruelling, event. There was a wonderful array of different abilities from new recorder through to established veteran, with a back-drop of crazed excitement stirred up by the all-round-keenies, also known as the 'Pan-species Listers,'...nothing, and I mean *nothing*, was left un-turned...

Sir Charlie Burrell generously hosted us over the weekend; his passion for his landscape-scale project came through as he talked about what had been achieved there in just 12 years. Converting a traditional arable and dairy farm to a pioneering land management project is no mean feat. Introducing free-roaming large herbivores as a natural management tool, where the different animals each have distinct grazing habits, has helped to replicate a more natural ecosystem where there is minimal human intervention. The River Adur Restoration Project at Knepp is restoring 2.5km of river from being a deep and wide canal to a more natural meandering river with associated floodplain system which will support an array of species, everything from wading birds through to wetland plants.

To help learn more about the species that are taking advantage of this natural landscape we concentrated our recording efforts in the re-wilding areas. A whole host of different techniques were employed to record as many species as possible, such as beating trays, pooters, moth traps, binoculars and hand-lenses, but a few recorders used rather curious methods to get their hands on some of the more under-recorded fauna that dwell in, well, less 'obvious' places....look away now if you're eating....

You know it's not going to be an average recording weekend when one of the recorders turns up with a box of latex gloves....What insects can we find if we have a good rummage in this Long-horn Cattle dung? What beetles fall out of this dead Carrion Crow if we give it a good shake? What can we find squirming about in this rotting Roe Deer carcass? Lots of species were found but are currently under the microscope to determine what exactly they are. One exciting find that was identified in the field was of the fast-moving *Creophilus maxillosus*, the Hairy Rove Beetle; a large predatory beetle that raises its scorpion-like tail when threatened.

Other notable species discovered over the weekend include *Pyrrhidium sanguineum* a red beetle also known as the Welsh Oak Longhorn which is newly arrived in Sussex, some rare mosses including **Showy Feather-moss** *Oxyrrhynchium speciosum*, **Willow Feather-moss** *Amblystegium varium*, and new to Sussex **Sessile Grimmia** *Schistidium apocarpum*, and when the wind died down we watched dragonflies flying over the ponds, including a **Scarce Chaser** *Libellula fulva* and **Broad-bodied Chasers** *Libellula depressa*. An **Adder's-tongue Fern** *Ophioglossum vulgatum* was a new plant to the site, but nearly lost underneath a recorder's bottom when we sat down for lunch. The moth trap produced a few goodies such as **Lime Hawkmoth** *Mimas tiliae*, **Poplar Hawkmoth** *Laothoe populi* and **Iron Prominent** *Notodonta dromedarius*.



Pyrrhidium sanguineum by Graeme Lyons

The free-roaming rooting Tamworth Pigs were also a target for our recording efforts, who knows what ticks and fleas you might discover amongst their bristles if you search with a long stick? And why waste precious recording time when travelling when you can catch insects with your nets out of the car window?



Left – looking for pig parasites

Middle – catching insects en route

Below – the resident Tamworth pigs

All photos by Simon Colmer



We had great coverage of the different species groups, with some recorders surveying veteran trees and fungi, some hunting for invertebrates, others searching for reptiles, a couple submerged in the pond looking for aquatic life and a few rooting around for signs of water voles. But above all of the important species records that have been collected for the estate, which will add to the knowledge of how the re-wilding project is faring, one of the greatest things to come out of this weekend is the warm community feel of biological recording and the coming together at such a social and merry event. Our thanks go to Charlie for sharing Knepp with us and for his generous hospitality and contagious enthusiasm. This is surely a ‘Living Landscape’ in every sense of the term.



Recorders hunting for invertebrates

Monitoring and casual recording on Sussex Wildlife Trust reserves and managed sites in 2013

by Graeme Lyons with Rye Harbour covered by Chris Bentley, Sussex Wildlife Trust

2013 was a landmark year for monitoring on reserves as it was the first time that full invertebrate surveys were brought completely in house by reserve staff. Such surveys were carried out at Old Lodge (with Chris Bentley), Filsham Reedbed (with Alice Parfitt) as well as a survey of bare ground invertebrates at Iping Common with Shaun Pryor.

A further development for monitoring on reserves came in the form of my own biological recording database. I was finding it harder and harder to find the time put records on to the Sussex Biodiversity Record Centre (SxBRC) database here at Woods Mill, so I decided to use my own personal copy of Recorder 6 on my laptop and then regularly sync with the SxBRC. Not only does this ensure that I get my records in now, but I also have a powerful tool in storing all my own records and the records from surveys I have commissioned on reserves. At the time of writing the database stands at nearly 18,000 records, most of which occurred on the reserve network.

A walk over survey in the form of a 'bioblitz' at **Cooksbridge Meadow** on the 7th June produced over 300 species including 20 ancient woodland indicators, the nationally scarce *Ctenophora pectinicornis* and singing Firecrest.

Old Lodge produced a total of 585 species including one new to Sussex, the northern deadwood weevil *Pissodes pini*. Species with conservation statuses were few and far between at less than 4% and nothing was recorded rarer than nationally scarce a. Three such species were the deadwood beetles *Ampedus sanguinolentus*, *Aplocnemus nigricornis* and the heathland spider *Diponea tristsis*. Other highlights included *Micrommata virescens*, *Cryptocephalus bipunctatus* and *Carabus arvensis*. Throughout the winter, as many as nine Parrot Crossbills have been observed at Old Lodge, drawing in many birders.



Pissodes pini

At the time of writing, the identifications from the **Filsham Reedbed** survey have not been finished but some 350 species have been identified so far, a far greater percentage of which have a conservation status. Two species new to Sussex were recorded frequently during the survey, the Nb staphylinid *Stenus palustris* and the nationally scarce stonefly *Nemoura dubitans*. Two RDB3 flies

were recorded being *Rhingia rostrata* and *Anasimyia interpuncta*. The Na whirligig beetle *Gyrinus paykulli* was recorded on the pond and the Na bee *Macropis europea* was found to be widespread across the site wherever the foodplant, **Yellow Loosestrife** was to be found. Other highlights included the nationally scarce ground bug *Drymus pumilio* from the fen confirmed by Tristan Bantock and the Nb weevil *Thryognenes schirrosus* from lower fen.

The bare ground survey at **Iping Common** was focused on assessing the successfulness of the Heath Tiger Beetle introduction scheme, but also to look at other species using the purpose-made scrapes. In addition to finding **Heath Tigers** between May and August (with a peak of 67 adults on 25 scrapes in August) several other scarce species were recorded including the Nb jumping spider *Talavera petrensis* (the first record in 45 years which happened to be Iping Common) and the Na BAP carabid *Anisodactylus nemorivagus*. Outside of the survey, but also on one of the scrapes the tiger beetles were released on, I discovered a staphylinid beetle during a British Arachnological Society field trip which proved to be a first for Sussex, *Acidota crenata*. **Redstart** also bred successfully at Iping Common in 2013, with recently fledged fledglings being observed on Iping, and a territory each on Iping and Stedham Commons from the breeding bird survey.

At **Southerham**, an attempt was made to look for the isolated colony of **Burnt-tip Orchids** at Bible Bottom (as they were having an exceptional year at Caburn Bottom) but none were found. On the 14th April I found two specimens of the Nb shieldbug *Canthophorus impressus*. This species only feeds on **Bastard-toadflax** which is abundant in that area, and the record was new to East Sussex. In summer during a site condition assessment I recorded **White Horehound** at a new site at the end of Bible Bottom, and a male *Bombus humilis* to the east of the reserve.

During a repeat orchid survey at **Malling Down**, Shaun Prior (Voluntary Trainee Ecologist) rediscovered **Musk Orchid** after a long absence. All orchid numbers were up on the 2008 survey, and a number of **Fragrant Orchids** were also found. **Autumn Lady's-tresses** numbers rose from 25 in 2008 to 872 in 2013.

Bryophyte surveys commissioned by NE at **Eridge Rocks** and **Marline Valley**, which were carried out by Sharon Pilkington and Tom Ottley, broadly showed that the sites were in good condition and that our management for these species was good. The nationally scarce *Fissidens rivularis* was present still along the stream sides at Marline, and three plants of the rare *Dicranum scottianum* were recorded at Eridge Rocks as well as *Scapania umbrosa* and *Campylopus fragilis*.

At **Ditchling Beacon**, orchids were also looking good with large numbers of **Musk Orchids** and **Marsh Fragrant Orchids** in the quarry. Several **Chalk Carpet** moths were also observed at this time. A large number of specimens of the scarce chalk-grassland bryophyte *Scapania aspera* were found on the main north facing slope in February, along with *Hylocomium splendens*. *Thuidium assimile* was confirmed in the quarry by Tom Ottley.

At **Graffham Common**, the first phase of felling was completed successfully in February whereby a **Tree Pipit** was heard calling in April and **Nightjars** were found to be churring throughout summer. It is fantastic news that such scarce birds could colonise so rapidly. Annual counts of **Marsh Club-moss** show numbers are very low, with only two plants being found in 2013. Most unexpectedly a dead **Pearl-bordered Fritillary** was found on the leaf of a **Round-leaved Sundew** on the 8th June.

At Woods Mill, the stream restoration continues to draw in some interesting beetles associated with bare mud, the Nb *Chlaenius nigracronis* being the scarcest recorded so far. Electro-fishing by EA in the autumn showed that **Brown/Sea Trout**, **Eel**, **Bullhead** and **Stone Loach** were present in the stream. In January, the **carp** and all of the rest of the fish were removed from the lake and it is hoped that this will now become better for plants and invertebrates. Whilst the lake was dry over the summer, the Nb reed beetle *Donacia crassipes* was recorded on the water-lilies that survived the drying out.

Waltham Brooks has had a long staying **Great Grey Shrike** in the winter of 2013/14 with two birds seen briefly in 2013.

Seaford Head produced 909 specimens of **Moon Carrot** during a mapping and counting survey, carried out by volunteers from the Seaford Head Natural History Society, and was found in an additional area away from the main colonies slightly to the north. Casual recording at Seaford Head on the 27th October produced some interesting records with a pRDB3 leaf-mining micro moth on **Agrimony** called *Ectoedemia agrimoniae*. This has not been seen in Sussex since 1906. On the same day, and in roughly the same location, I also recorded a species new to Sussex, the snail *Balea heydeni* which was confirmed by Martin Willing.

Breeding bird surveys, butterfly transects and dormouse surveys continued in the **Friston Forest project area** in 2013. Casual recording produced two males of the Nb cavity nesting wasp *Crossocerus binotatus* on the 5th August, which were identified by James Power.

Rye Harbour by Chris Bentley

A combination of predation and inadequate food supply resulted in a poor breeding season for a number of our seabirds during 2013. Only 120 pairs of **Sandwich Tern** nested at Rye Harbour this year, and did not manage to fledge any young, while only single fledglings each were produced by 36 pairs of **Mediterranean Gull** and 11 little terns. **Common Tern** did somewhat better, with 79 pairs producing at least 24 fledglings, while 1,700 **Black-headed Gull** produced about the same number of fledglings. Waders had a mixed season; 19 pairs of **Redshank** appeared to have good fledging success, and 24 pairs of **avocet** fledged at least 19 young, while for **Oystercatcher**, **Lapwing** and **Ringed Plover** fledging success was low. In addition, **Wheatear** had a marginally better season after a run of poor years, with at least five territories identified producing at least three broods of fledglings. Some notable visitors during 2013 included two **Kentish Plover** during March, one of which was ringed on the nest in Germany in 2009, a **Terek Sandpiper** in April and a **Tawny Pipit** in September.

The monitoring of the new saltmarsh and shingle habitats on Harbour Farm is progressing and continues to turn up some interesting species. This included a female of the RDB2 money-spider *Trichoncus affinis*, the first record for Rye Harbour (bringing the number of RDB species to 102) the RDB3 mesh-web weaver *Lathys stigmatisata*, and the RDB3 ground beetle *Dyschirius angustatus*. Also of note have been the Na jumping spider *Bianor aurocinctus*, the first record for Rye Harbour and only the third recent record for Sussex, and the Nb staphylinid *Achenium humile*, again a first for the reserve. Other rare invertebrates recorded during 2013 included the spiders *Pellenes tripunctatus* (RDB1), *Trichopterna cito* (RDB2), *Haplodrassus minor* (RDB3) and *Pseudeuophrys obsoleta* (RDB3), the beetles *Hydrophilus piceus* (RDB3) and *Isochnus populicola* (RDBK) and the flies *Atylotus latistriatus* (RDB3) and *Odontomyia ornata* (RDB2).

Invertebrate surveys are planned for Flatropers Wood and Burton Pond in 2014.



Pellenes tripunctatus

SUSSEX WETLANDS

by Fran Southgate, Sussex Wetland Landscapes Officer

Wetland species

Otters

Otter activity in Sussex remains negligible, and locations which previously showed otter activity also appear quiet. There are still no confirmed reports of any resident otter populations in the County, although there have been sightings this year on the rivers Adur, Arun and E Rother.

Water vole

Water voles remain threatened and vulnerable in Sussex. Three core populations appear to remain stable, and the Arun valley population is expanding but no new populations have been discovered. The Chichester and Manhood population is supported by the Manhood Peninsular Partnership, the Arun valley population is supported by the Arun and Rother Connections (ARC) project, and the Brede / Romney populations are supported by landscape partnerships based in the High Weald AONB and Kent Wildlife Trust.

The main water vole populations of the South East, form part of a PhD study which will identify the family relationships between Sussex water voles, their population dynamics and their responses to different habitat conditions.

Black poplars

Sussex is host to 38 mature Black poplar trees, comprising 5 genetic clones. Around 6750 young Black poplar trees have been planted throughout the County, including a number in restored floodplain woodlands.

Non Native Invasive aquatic plants

Improvements in technology are enabling much better monitoring of the spread of invasive non native (aquatic) species in Sussex. As information increases, of a list of over 10 species such as Giant Hogweed, Floating Pennywort, Himalayan Balsam and Australian Swamp Stonecrop, it is obvious that the majority are common, widespread, and causing damage to a wide range of (wetland) environments in Sussex.

New regulations are planned to come into force April 2014 to ban the sale of five invasive non-native aquatic plants under Section 14Z(a) of the Wildlife and Countryside Act. Due to their negative impacts on biodiversity and the economy the minister has decided to ban the sale of:

- Floating water primrose *Ludwigia grandiflora*, *Ludwigia uruguayensis* and *Ludwigia peploides*
- Floating pennywort *Hydrocotyle ranunculoides*
- Parrots feather *Myriophyllum aquaticum*
- Australian swamp stone-crop *Crassula helmsii*
- Water fern *Azolla filiculoides*

We would be grateful for the submission of any records of invasive species that you have to the Sussex Biodiversity Record Centre. A free phone app called Plant Tracker (plantracker.naturelocator.org) allows records to be submitted to shared national databases supported by the Environment Agency and Record Centres. The Non Native Invasive Species

Secretariat (NNISS) also host a website with up-to-date information on non-native invasive (aquatic) species (<https://secure.fera.defra.gov.uk/nonnativespecies/home/index.cfm>)

Sussex Wetland Habitats

Sussex has lost a large proportion of its natural wetlands, and much of the remaining habitat is fragmented, degraded and in some cases, at risk of extinction. The County nonetheless hosts some unique and fascinating wetland habitats. Updates on the known areas of habitat (according to SxBRC GIS layers) are summarised below:-

Lowland fen and swamp communities – 320.1 ha. (Definitely fen = 63.6 ha, Definitely but unmapped = 155.7 ha, Possibly fen = 100.8 ha)

Pure reedbed – 194.4 ha (Definitely reedbed = 132.7 ha, Definitely but unmapped = 23.4 ha, Possibly reedbed = 38.4 ha)

Coastal and Floodplain Grazing marsh – 14,609.6 ha (grassland element often poor quality)

Ancient floodplain woodlands – less than 200 ha

Wet heathlands – Not currently separately mapped. Over 30 ha recorded.

Ponds – 18,477 mapped on the Sussex pond inventory

Saltmarsh – 405.3 ha (EA LS3 data)

Coastal and estuarine mudflat – 2037.7 ha (EA LS4 data)

Saline lagoons – 35 recorded, around one third of which are not man made

Rivers in Good Ecological Condition – 33% of groundwater bodies and 19% of other water bodies such as rivers and lakes achieved a good or high ecological status in the last river basin management plan.

Other updates

Greensand Streams

The unique ecological assemblages of streams which are spring fed from some of the unusual geological zones in Sussex have often been overlooked. Recent mapping shows that there are over 140km of chalk stream across Sussex, and now over 170 km of stream associated directly with greensand springs have been highlighted, although not surveyed. We would appreciate any information from local ecologists on any of the unusual micro and macro flora / fauna which can be found in these streams.

SUSSEX GEODIVERSITY PARTNERSHIP

Underlying our lovely Sussex habitats and species is geology. To learn more about the wealth of Local Geology Sites in Sussex, including access, interest features, photographs and site maps, check out this new website: <http://www.geodiversitysussex.org.uk/>

The website is a work in progress, but already there is enough information available to really learn about the great geodiversity we have here in Sussex.

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/>

SUSSEX COUNTY RECORDERS 2013/14

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 497521
Email: sxbrc@sussexwt.org.uk

Fungi

MARTIN ALLISON (mainly E. Sussex)
Email:
martin.allison@sylvanconsultancy.co.uk

Microfungi

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

Lichens

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

Sussex Lichen Recording Group

Jacqui Middleton
Email: jacquiandbruce@tiscali.co.uk

Bryophytes

TOM OTTLEY
13 Cleve Close, Framfield
East Sussex, TN22 5PQ
Email: tom.ottley@virgin.net

Marine algae (seaweeds)

IAN TITTLE
Email: mmit@waitrose.com

Charophytes (Stoneworts)

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

Vascular plants

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
Email: pharmes@btinternet.com

MIKE SHAW

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

Sussex Botanical Recording Society

website: www.sussexflora.org.uk

Orchids

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

Molluscs

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

Dragonflies

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

Psocoptera (Bark lice and book lice)

MARCUS OLDFIELD
moldbug5@hotmail.co.uk
Tel: 01273 552586

Orthoptera & related orders

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

Heteroptera (plant bugs)

Graeme Lyons
Woods Mill, Henfield, W. Sussex, BN5 9SD
Tel: 01273 497506
Email: graemelyons@sussexwt.org.uk

Auchenorrhyncha: Leafhoppers & planthoppers

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

Coleoptera (beetles)

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

Moths and butterflies

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

WENDY ALEXANDER
Moth Group Secretary
Tel: 01424 212894
Email: wkalexander@btinternet.com

Sussex Moth Group website:
www.sussexmothgroup.org.uk

Butterfly Conservation (Sussex)

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

Butterfly Conservation, Sussex Branch website: www.sussex-butterflies.org.uk

Diptera (two-winged flies)

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

Hoverflies

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

Hymenoptera Aculeata: Ants, Bees & Wasps

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

Spiders

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

Pseudo-scorpions

GERALD LEGG (National Recorder)
Email: chelifer2004@yahoo.co.uk

River Fish

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

Amphibians & Reptiles

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

Birds

Sussex Ornithological Society Recorder

DH Howey, 2 Portobello Cottages,
South Coast Road, Telscombe Cliffs,
East Sussex, BN10 7BD.
Email: Recorder@sos.org.uk

Bird conservation enquiries:

Email: conservation@sos.org.uk

All other enquiries:

Secretary

VAL BENTLEY,
Chetsford, London Road,
Henfield, West Sussex BN5 9JJ
Tel: 01273 494723,
Email: 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
Email: stevep.savage@ntlworld.com
www.seawatchfoundation.org.uk

Otters and Water Voles

FRAN SOUTHGATE
Sussex Wetland Landscapes Officer
Sussex Wildlife Trust, Woods Mill
Henfield, West Sussex BN5 9SD
Tel: 01273 497555
Email: fransouthgate@sussexwt.org.uk

Marine Records - (see also Cetaceans)

Gerald Legg
Email: chelifer2004@yahoo.co.uk

Geology

Sussex Biodiversity Record Centre
Woods Mill, Henfield,
West Sussex BN5 9SD
Tel: 01273 497553
Email: sxbrc@sussexwt.org.uk
Website: www.geodiversitysussex.org.uk

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;
Website: www.ashdownforest.org

East Sussex County Council

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

Natural England (formerly English Nature)

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

Environment Agency

Southern Regional Office,
Guildbourne House, Chatsworth Road,
Worthing, West Sussex, BN11 1LD.
Tel: 08708 506506

Email: enquiries@environment-agency.gov.uk

Forestry Commission,

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

High Weald AONB Unit

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

National Trust

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

Otters and Rivers Partnership

See Otters & Water Voles above.

RSPB

South East England Regional Office
Pavilion View, 19 New Road, Brighton, BN1
1UF
Tel: 01273 775333

South Downs National Park Authority

Hatton House, Bepton Road, Midhurst,
West Sussex GU29 9LU
Tel: 0300 303 1053
Email: 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 Bat Group

www.sussexbatgroup.org.uk
Email: contact@sussexbatgroup.org.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 Adastra Review from 2001 are also available on line.

The Record Centre has paper copies of the following: The Dragonflies of Sussex and Sussex Rare Plant Register.

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 hedgebank 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 hederiae* 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.

