

British
Dragonfly
Society



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The Magazine of the British Dragonfly Society
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The Magazine of the British Dragonfly Society

Published twice a year, in April and October, *Dragonfly News* covers all aspects of the British Dragonfly Society's field, recording, monitoring, research, conservation and social activities, as well as information from the wider dragonfly, natural history and conservation world. The emphasis is on dragonflies recorded in the UK.

The British Dragonfly Society aims to promote and encourage the study, conservation and understanding of dragonflies and their natural habitats, especially in the UK, and to raise public awareness of dragonflies.

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Editor's Notes



Lauren Kennedy

Welcome to the 2023 spring edition of Dragonfly News, and my first issue as editor. Having started as Conservation Outreach Officer at the end of last year's dragonfly season I am so very excited for this summer. I am not the only newbie, we have also welcomed Jess Slight our new Operations Officer, as well as four new trustees. 2023 is set to be an exciting year for the BDS, we are celebrating our 40th Birthday, launching two new Hotspots and returning to a face-to-face AGM in November. We are so looking forward to seeing many of you there!

This issue is packed with updates from staff and trustees, and a peek at some of our field meetings and events for the year. We also have lots of fascinating articles which include Dave Smallshire's look at whether SuDs can benefit dragonflies, Stephen Corcoran's Blue-tailed Damselfly fieldwork in Scandinavia, and an exotic Panama adventure by our very own BDS Ambassador Joel Ashton.

The Young Naturalist section has a very special edition of Dragonflies and Me, where we find out more about our newest BDS Trustees. Young volunteer Isla shares her passion for dragonflies with us all and Ashleigh Whiffin from National Museums Scotland lets us know what it is like 'Working With Wildlife' as an Entomology Curator.

I wish you all the most enjoyable dragonfly-filled summer!



Chairman's Report



Brian Walker

By the time you receive this magazine the first damselfly of the season will almost certainly have been seen. I was going to write dragonfly, but recent changes mean that as I write this in mid-January a dragonfly has already been reported. It wasn't identified, but was almost certainly a Vagrant Emperor; an occurrence that is now becoming something to be expected during the winter. The change for this species from being a very rare occurrence, to be an expected annual vagrant is just one of the many changes that are occurring with our dragonfly populations. Last summer I found Willow Emerald Damselflies close to my home in Oxfordshire and I, and others, subsequently found them at other sites in the area. They had not been seen locally before this, but now seem to have arrived in the area in force. This winter when I checked the site where I first saw them, I found the distinct egg scars on a Willow shoot that confirmed that they laid eggs. Hopefully, there will be larvae developing in the pond this year and I will see adults again in 2023 and will find them at even more local sites as they become

established.

The changes that are occurring add to the interest of going out and searching for dragonflies. There is always the chance of finding something unusual to add to the fascination of simply watching them and gaining more understanding about how they go about their lives. Many of the changes we are seeing seem to us to be positive, because new species are colonising the country and existing species are extending their ranges. However, the factors driving these changes, primarily climate change, also pose a threat to some of our other species and certainly pose a threat to wildlife and our lives more generally.

We are some way from fully understanding all that is happening, let alone the detail of the drivers, which is why collecting data is so important. I record all of the dragonflies I see as full lists for visits to sites and enter them into iRecord. I also record other species groups where I am confident in my ability to identify species or can get a photograph to seek help with identification. I would encourage everyone to record the dragonflies they see and to submit full lists of all of the species they identify at a site. There is plenty of help available to identify species if you can get a photograph. It is these records that will help us to monitor trends and identify areas where we need to focus research efforts. One of our current projects is the White-legged Damselfly Investigation. It is my favourite species of damselfly, both because I think it is very attractive

and because of the associations around my first sighting of it. When I moved to Oxfordshire, I was delighted to find it at most sites I visited along the Thames and in large numbers at many of these. I can recall floating Iris leaves at one site on the Thames being covered in pairs ovipositing. I now no longer see it at several of these sites and numbers at other sites are much reduced. To me, it seems that the species is in trouble, but while the Investigation is confirming my observations that there have been reductions along the Thames and some other rivers, in the country overall, the population appears to be stable. We would still like to have a better understanding of why populations in some areas are doing well and others not so well, but the project so far does illustrate the value of pooling knowledge through records from many observers; 539 at the last count have contributed records to the White-legged Damselfly Investigation.

Just as dragonfly populations are changing so is the British Dragonfly Society. Jess Slight has joined our team as Operations Officer and will take over a range of duties to help the organisation run smoothly and develop further. One of these will be to run our membership office and act as the point of contact for membership matters. She will take this over from Lynn Curry who has fulfilled this role as a volunteer for over 15 years with considerable efficiency and we are extremely appreciative of the effort she has put in. Our current membership database and systems are



struggling to cope with all that is needed and we are in the process of switching to a Customer Relationship Management (CRM) system which will improve operations and allow us to improve communications with volunteers, particularly in relation to projects. Jess will also take over a range of other administrative tasks to free up Trustees and other staff to allow a greater focus on outreach and conservation.

In another change, this will be my last editorial as Chair of Trustees. Tim Coleshaw has taken over this role and a key focus for him will be to push forward with the implementation of the strategy for the Society, which he has had a key role in developing as Vice-Chair. I will be continuing for the present as a Trustee and as Treasurer, and will be supporting Tim in the continuing development of the Society along with the existing Trustees and the new Trustees that were elected at the AGM last year.

Membership Matters

As we look forward to the new dragonfly season, it is the time of year for you to renew your membership of the BDS (the membership year runs from the 1st April to the 30th March).

For those of you who do not pay your membership by standing order, you should have already received a membership renewal form, either by post or via e-mail.

If you have not already paid your membership for this coming year, there are 2 ways that you can proceed:

1. On our website using a credit/debit card or PayPal. Just follow the link for membership renewal. Please remember to quote your membership number if you know it (that helps with the paperwork!)

2. By cheque. If you pay your membership annually by cheque please could you return the membership renewal form to me together with your membership fee (if you have not got a renewal form or cannot print one a covering letter will do).

If you have not received a renewal form and you are unsure if you have set up a standing order please contact me by e-mail (membership@british-dragonflies.org.uk), and I will check your details on the database.

If you normally pay by cheque or via the website you may find it more convenient to set up a standing order for this and any subsequent payment. If you wish to do this please could you complete all the sections on a membership renewal form and

return it to me; alternatively, if you use internet banking you can set up a Standing Order, with your bank, very easily online.

Please also remember to keep us informed of any change of postal or e-mail address.

If you have any membership queries please do not hesitate to get in touch.

In the unlikely event of your wishing to leave the society, please let us know. This will prevent the extra expense of sending you an unnecessary reminder letter.

Thank you!

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All change in the Membership Office

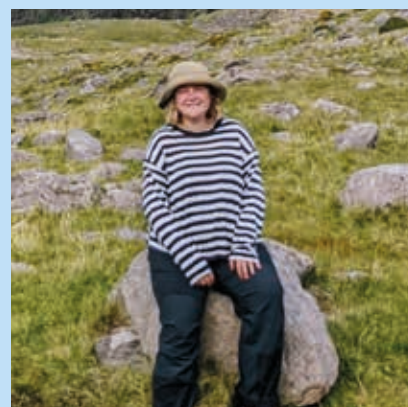
A message from Lynn - By the time you read this I would have left the BDS Membership Office. So I would like to say goodbye and thank you for having me. It has been an honour and a privilege working with you all over the years. Maybe I will bump into you somewhere on the hunt for that elusive dragonfly?

I am sure Jess will look after you very well, be kind to her!

All the best Lynn

Hello from Jess! - Nature and the world around us has always offered huge inspiration and joy to me. I spend as much time as I possibly can outdoors, walking and swimming. It was through swimming that I first started to discover Dragonflies and have been enchanted ever since.

I graduated from Cardiff Metropolitan University in 2018 with a degree in Illustration and am thrilled to have Dragonflies as my latest subject. I'm so pleased to be joining BDS as Operations Officer and can't wait to delve in and learn more about these magnificent insects.



News From You

Keep In Touch

We love hearing from you! Here is a selection of some of our favourite communications from you:



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We receive some amazing dragonfly snaps via email.

Below: Neil Galton emailed in this Four-spotted Chaser devouring a damselfly. Taken in May 2022 at the West Hay reserve in Somerset.



Left: Chris McMullon in Barnham, West Sussex. @christophermcmullon on Instagram tagged us in his photos of his brilliant pond finds! After watching lots of egg laying in his pond in the summer Chris then found plenty of larval skins in the autumn!

Below: Ali Rajabali was looking back on his nature finds of 2022 "Right at the top of that list would be this absolute beauty of a dragonfly, easily my favourite from the ones I witnessed, the White-faced Darter (*Leucorrhinia dubia*) photographed at Whixhill Moss NNR. This beautiful dragonfly can be found in a handful of sites around the Midlands and Cumbria and North West Scotland, but it is classed as endangered as a whole in Britain."

Take a look at Ali's photos on Instagram @rajabali_photos

Neil Phillips had taken on the incredible task of seeing all British Odonata species in 2022.

From his field adventures Neil has produced the Dragonfly Tour series

You can watch the series on YouTube @ukwildlife

You can also follow Neil on Twitter @UK_Wildlife



Sightings Updates **Adrian Parr**

Migrant News

One of the major highlights from the second half of the 2022 dragonfly season must surely be the plethora of new site records for **Willow Emerald Damselfly** that were received, the species' rate of range expansion having, if anything, accelerated over recent years.

Amazingly, last summer and autumn saw records from as far afield as Gosforth (Newcastle upon Tyne) in the north, Burnley and Crewe in the northwest, Spetchley (Worcester) in the west, and both Christchurch and Trowbridge in the southwest.

At present, there are no records for Wales, but these surely cannot be too far away. It may also be just a few more years before the species is seen pretty much over the whole of England. And all this for a species that first colonised Britain only as recently as 2007!

Summer 2022 in western Europe was notable for its extreme weather, both in terms of heat and drought. These conditions might perhaps have been expected to stimulate dragonfly migration, but in fact, the second half of the season in Britain was a relatively unspectacular time for migrants. Maybe population levels in source areas had been depressed by the extreme conditions. Despite the quiet time in terms of 'quantity',

a few significant sightings were nevertheless still made. A male **Scarlet Darter**, for instance, turned up at Minsmere in Suffolk on 28 July. This is only the twelfth British record, though the species has become a relatively common breeder on the near Continent over recent decades and must now be considered a potential colonist to our shores. Following a period of easterly winds, a **Yellow-winged Darter** was also noted at Spurn, East Yorkshire, on 5 September. This is the first British record of this declining species since 2015.

In terms of our more 'routine' migrants, after a record-breaking summer, **Lesser Emperor** had a quieter end to its season, with the last record of the year being from Housel Bay in Cornwall on 10 September. **Red-veined Darter** also had a quiet second half of the year, with only a handful of sightings being made. Clearly, both late-season immigration and the emergence of a locally bred second generation following spring arrivals had been limited. A recently emerged female was, however, found at Windmill Farm in Cornwall on 27 August, while mature males were photographed at Reston in the Scottish Borders on 14 August and at Portland Bill, Dorset, on 15 September. **Southern Migrant Hawker** continued to show at most of its recently established breeding sites in southern England, though numbers tended to be lower than in other recent years, summer weather conditions presumably proving unfavourable. A number of immigrant or dispersing individuals were also noted during late July–



Above: Lesser Emperor male by Pablo Darve

early September, though again rather fewer than in the previous couple of years. As well as sporadic records along the south coast, sightings included dragonflies seen at Stewartby in Bedfordshire, Clifton-upon-Dunsmore in Warwickshire, Kenfig in Glamorganshire, Spurn in East Yorkshire, and Saltholme in County Durham. Finally, **Vagrant Emperor** showed a small autumn influx, as has now become an annual occurrence. Only about half a dozen confirmed sightings were however made; most records were from the south coast of England or coastal East Anglia, but a female was photographed at Heysham south harbour, Lancashire, on 25 October.

It will be interesting to see what events lie in store for 2023. Hopefully, the summer droughts of last year will not have had too severe an impact on dragonfly populations, both at home and on the Continent. With luck, fresh immigration might help top up populations of some of our more localised recent colonist species, such as Southern Migrant Hawker and Southern Emerald Damselfly, that might perhaps have suffered because of recent weather conditions.



Above: Scarlet Darter by Steve Covey



Last Dates for 2022 *Adrian Parr*

Weather-wise, large parts of summer and autumn 2022 were notably warm, with England, Wales, and Scotland all setting new record highest-ever temperatures during July. Summer droughts caused many waterbodies in England to shrink and warm up, and some dried out altogether until rains during September finally broke the worst of the drought. The consequences of these weather extremes are not straightforward to predict, but some significant disturbance to normal phenology might perhaps have been expected. In the end, last dates for many species turned out to be fairly typical, with any extension of flight periods brought about by a benign autumn, possibly being offset by the peak of initial emergences being earlier than normal. The only record to stand out as particularly unusual was an immature male Common Blue Damselfly seen at Kempton Nature Reserve in Surrey on 20 November. This will represent an individual that would normally have overwintered as a late instar larva that was instead induced to emerge early.

At the very end of the year, the only species to still be on the wing in December was Common Darter. Although individuals were seen in at least eight counties during the early days of that month, including even one spotted in southwest Yorkshire, the sudden arrival of arctic drafts and freezing temperatures meant that none were seen beyond 6 December.

Details of all latest dates currently to hand are given below:

SPECIES	LAST DATE	PLACE	OBSERVER
Banded Demoiselle	09-Oct-22	Hampshire	P. Winter
Beautiful Demoiselle	19-Sep-22	Cornwall	C. Poland
Scarce Emerald Damselfly	12-Aug-22	Norfolk	D. Weaver
Emerald Damselfly	07-Oct-22	Lincolnshire	B. Lawrence
Willow Emerald Damselfly	23-Nov-22	Middlesex	D. Miller
Azure Damselfly	15-Sep-22	Leicestershire	G. Hunt
Variable Damselfly	02-Aug-22	Dumfriesshire	A. Riches
Dainty Damselfly	04-Aug-22	Kent	G. Sherwin
Red-eyed Damselfly	03-Sep-22	Northeast Yorkshire	K. Gittens
Small Red-eyed Damselfly	17-Sep-22	Warwickshire	G. Rowling
Large Red Damselfly	02-Sep-22	Angus	A. Hall
Common Blue Damselfly	20-Nov-22	Surrey	C. Duncan
Blue-tailed Damselfly	01-Oct-22	Kent	J. Beale
Scarce Blue-tailed Damselfly	17-Sep-22	Worcestershire	A. Warr
Small Red Damselfly	30-Aug-22	Cornwall	C. Poland
White-legged Damselfly	10-Sep-22	Worcestershire/East Sussex	A. Warr/B. Clough
Southern Migrant Hawker	12-Sep-22	East Sussex	H. Prendergast
Southern Hawker	25-Nov-22	Hampshire	P. Winter
Brown Hawker	16-Oct-22	Lancashire	T. Middlehurst

Norfolk Hawker	06-Aug-22	Norfolk/Suffolk	J. Ferguson/P. Wilkins
Common Hawker	25-Oct-22	Shropshire	S. Barlow
Migrant Hawker	20-Nov-22	Northamptonshire	J. Underwood
Emperor Dragonfly	23-Sep-22	Pembrokeshire	S. Loving
Hairy Dragonfly	10-July-22	Cambridgeshire/Derbyshire	N. Rawlings/M. Bryce
Golden-ringed Dragonfly	08-Oct-22	Devon	L. Clavell-Bate
Downy Emerald	30-Jul-22	Berkshire	A. Holmes
Brilliant Emerald	09-Aug-22	East Sussex	J. Luck
White-faced Darter	06-Aug-22	Shropshire	N. Moss
Broad-bodied Chaser	04-Sep-22	Lincolnshire	I. Butterfield
Scarce Chaser	19-Aug-22	Northamptonshire	D. Holden
Four-spotted Chaser	05-Sep-22	Lancashire/Fife	S. Heywood/J. Milne
Black-tailed Skimmer	17-Sep-22	Dorset	L. Gardiner
Keeled Skimmer	25-Sep-22	Surrey	S. Ali
Black Darter	12-Nov-22	Southwest Yorkshire	D. Wozencroft
Ruddy Darter	18-Oct-22	Kent	Sandwich Bay Bird Obs
Common Darter	06-Dec-22	Hertfordshire/East Sussex	J. Wiltshire/Anon

Gift Aid Declarations

Many long-standing members of the Society have provided Gift Aid declarations in the past which predate our new form as a Charitable Incorporated Institution. We have been advised that it is desirable that we ask these members to provide fresh Gift Aid declarations to avoid any future issues. We aim to do this in a way which minimises the cost to the Society and makes completion simple for members. A declaration can be provided by clicking on the Gift Aid button on our website and completing and submitting the form that is displayed. You only need to provide your name and home address including post code. No signature is needed. You must of course be a valid UK taxpayer as set out in the declaration.

Please complete the declaration if you joined BDS before 19th July 2016 (which is when we became a CIO.) You don't need to do this if you have paid your subscription via our website but we would ask you to do so if you pay by Standing Order. If in doubt about whether a new declaration is needed, or if you have not previously provided a declaration, please complete the form.



Are SuDS any good for dragonflies?

“The cleaner the water, the greater the biodiversity benefit”

by *Dave Smallshire*

The summer of 2007 saw exceptionally heavy rainfall and widespread flooding that caused some £3bn worth of damage. Subsequently, the Pitt Review led to the Flood and Water Management Act 2010, which requires the installation of SuDS for nearly all new developments in England and Wales in an attempt to reduce future flood risks. The acronym stands for Sustainable Drainage Systems (SuDS), also formerly also known as Sustainable Urban Drainage Systems (SUDS). (Note that in Scotland, the Water Environment and Water Services (Scotland) Act 2003 had made the use of the SuDS approach compulsory for new developments some years earlier). Readers will no doubt be aware of the scale of sewage discharges from treatment works during periods of heavy rain, as well as the largely unknown effects of this and pollution from other sources on our dragonflies.

SuDS aim to prevent flooding and overwhelming sewage treatment works by:

- controlling the flow and volume of surface water;
- preventing or reducing pollution downstream of developments; and
- promoting the recharge of groundwater.

These are achieved by channelling rainwater away from sewerage systems, using sustainable, natural pathways to slow down water flow and capture sediment. Practical tools for doing this include:

- source control – using green roofs, living walls, rain gardens, permeable surfaces, filter strips, bioretention areas.
- site control – using detention basins
- regional control – using retention basins and associated wetlands

Detailed guidance is available in The SuDS Manual, which runs to no less than 968 pages! More user-friendly guidance, aimed at improving the outcomes for wildlife, has been produced by the RSPB and the Wildfowl and Wetlands Trust (Sustainable Drainage Systems: Maximising the potential for people and wildlife - A guide for local authorities and developers).

As well as a requirement for most new developments, there is also huge potential to retrofit existing built-up areas, although there is no legislation or financial incentive to do this! More sustainable drainage could be achieved in existing buildings by disconnecting down pipes and diverting surface water away from drains through water butts and from impermeable surfaces along grassy

swales, through basins, rain gardens, and planters. This could “turn uninspiring open spaces into vibrant, aesthetically pleasing areas full of wildlife”, according to the RSPB/WWT guide.

I have become acutely aware of the importance of SuDS as new housing estates appeared where I live, on the fringe of Chudleigh, south Devon. Unfortunately (for me), the two developments near me have been furnished with retention basins, which are designed to fill up with storm water and release it slowly (into the River Teign); they have little or no permanent water for dragonflies. The basin nearest me sits in a small, sheltered field that is rich in plants and insects and would have been a fabulous dragonfly pond if it had been designed as a permanent water body. (In fact, I’ve yet to see it holding any water at all!) A second, larger basin nearby could have been designed to capture the enormous amounts of soil that eroded from the inevitably extensive areas of bare ground exposed over the building site. Unbelievably, this sediment all ended up in an existing drain that flowed right alongside the basin and thence straight into the Teign – not good news for the salmon and trout that already struggle to find gravel beds to spawn in. Incidentally, I learned recently from a pond constructor in Scotland that possibly half of the SuDS ponds there are incorrectly engineered and actually connect up to sewers, which totally negates the reason for creating them!

Despite these good reasons for thinking that SuDS won’t do much for dragonflies directly, I have found some hope in the form of sedimentation and retention ponds elsewhere. The best examples I’ve



Gallows Cross SuDS pond 2020: Emergent vegetation had become well-established by 2020.





Gallows Cross SuDS pond 2022: Within two years the beds of Reedmace and Reeds had almost eliminated open water

come across locally are Gallows Cross SuDS ponds (SX861735), two ponds that lie either side of a road on the edge of a recent housing development on the western fringe of Kingsteignton, in the Teign Valley. Ironically, the houses they serve were built on the site of New Cross Pond, a former Devon Wildlife Trust reserve that was infilled with claypit spoil. This old Bovey Basin clay pit was confirmed as a Key Dragonfly Site in 1995, when it held breeding Red-eyed Damselfly, Hairy Dragonfly, and a healthy population of Downy Emerald. Fortunately, these species breed in at least some of the dozen or so flooded ball-clay pits within a mile or so and the first two have appeared at the SuDS ponds over the last few years. In fact, I've recorded a total of 15 species there since 2017 of which nine, and possibly 14, have bred (compared with 18 recorded at New Cross Pond, of which at least 10 bred).

As is typical of building sites, access was restricted during the creation of Gallows Cross SuDS, but when I was first able to visit there was already much vegetation established. Around the fringes were stands of both Reed (*Phragmites*) and Reedmace (*Typha*) that have quickly spread and reduced the amount of open water, quite significantly in one pond, latterly favouring the likes of Hairy Dragonfly and Migrant Hawker rather than the Broad-bodied Chaser and Black-tailed Skimmer that bred initially. Likewise, pondweeds have also spread within the open water areas, benefitting Small Red-eyed Damselfly but almost ousting Common Blue Damselfly. On the steep sides that seem to be typical of SuDS ponds, willow growth has made observations increasingly difficult. Such rapid natural succession appears to be typical of SuDS ponds and the presence of muddy water around the inlets suggests that dredging will have to be frequent. This raises the question of who maintains SuDS ponds to keep them working effectively.

It seems that typically a management company will be expected to do this along with mowing communal grass areas and maintaining playgrounds,

funded by maintenance fees collected annually from the residents. As SuDS are still something of a novelty, it will be interesting to see how well such an arrangement works in the future. I wonder, for example, where the spoil from any dredgings will end up when the pond becomes choked with sediment and emergent vegetation; and what happens if Great Crested Newts colonise? Another new development on the edge of Chudleigh is proposed to have a SuDS pond, as well as an attenuation basin and a rain garden that will be set within four fields that won't be built on. The developers' plan is to let a management company look after these, but there is a groundswell of opinion to bring these areas into public ownership: maybe the Town Council could oversee more sympathetic management, with advice from Chudleigh Wild (the local wildlife group, of which I happen to be the Chair!). The Land Trust, a charity committed to the long-term sustainable management of open space for community benefit, may take on the management of larger sites, including those with SuDS.

Away from building developments, roads and other impermeable surfaces contribute significantly to run-off, with the added problems of oils, residues from brake linings and tyres and other pollutants entering watercourses. To treat this contaminated run-off at source, it must either be allowed to infiltrate into soil or be collected before release via silt interceptors and bioretention areas. The Site of Special Scientific Interest at Stover Country Park has failed recent condition assessments by Natural England on the grounds of water pollution. National Highways has recently spent £1.6 million creating SuDS at Stover to clean up the run-off from the adjacent A38 dual carriageway. Two pairs of sedimentation and 'reedbed' filtration/balancing ponds were created in the winter of 2018-19. During 2020-22, I recorded 17 dragonfly species using these, of which 13 have bred.



Hairy Dragonfly (*Brachytron pratense*)



That's all well and good, but one of the original water sources for Stover brings commonly encountered water quality problems. Its small catchment is a mix of residential dwellings, light industry, agriculture and forestry. As well as collecting diffuse pollution from agriculture (especially nitrogen), there is ingress of (mainly) treated sewage from the human developments. To alleviate this, an off-stream sedimentation pond was dug in 1992; this was dredged out in the winter of 2020-21 and the spoil spread over adjacent land. Stover has recently succeeded in gaining £2.1 million from the National Heritage Lottery Fund, with match-funding of a further £1.5 million, to do extensive works in the Park, including dredging out sediment from a 1.4 ha section of the lake. Preparatory work felling a conifer plantation next to the lake took place in autumn 2022, making space to take the dredged sediment. The BDS has agreed to train a dozen 16-25-year-olds during the next three years to monitor the fate of Stover's dragonflies, before and after the dredging.

In summary, therefore, SuDS have the potential to benefit wildlife, including dragonflies, by both cleaning up the water entering our rivers and streams and in some cases by providing new ponds.

For more information on Stover Country Park visit:
<https://www.devon.gov.uk/stovercountrypark>

Species recorded	S Sed Pond	S Bal Pond	N Sed Pond	N Bal Pond	Overall
Emerald Damselfly	B	x	x		B
Beautiful Demoiselle	x		x		x
Azure Damselfly	B	B	B	B	B
Large Red Damselfly	B	B		B	B
Red-eyed Damselfly	B	B		x	B
Small Red-eyed Damselfly	B	B	B	B	B
Common Blue Damselfly	B	B	x	B	B
Blue-tailed Damselfly	B	B	x	x	B
Hairy Dragonfly	x	x			x
Migrant Hawker	B	B		B	B
Emperor Dragonfly	B	B	B	B	B
Lesser Emperor		x		x	x
Four-spotted Chaser	B	B		x	B
Broad-bodied Chaser		x	B	x	B
Black-tailed Skimmer	B	B	B	x	B
Keeled Skimmer		x		x	x
Common Darter	B	B	x	B	B
Total recorded	15	16	10	14	17
Total breeding	12	11	5	7	13

x = recorded; B = breeding evidence



Stover South Sedimentation Pond 2019: one of Stover's primary sedimentation ponds after completion in 2019.



Stover South Sedimentation Pond 2022: The same pond three years later: 15 species recorded of which 12 had bred.



Stover South Balancing Pond 2019: One of the 'reedbed' filtration ponds at Stover after completion in 2019.



Stover South Balancing Pond 2022: Still without any substantial establishment of emergents. But dragonflies prospered: 16 species recorded of which 11 had bred.

References

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National Dragonfly Recording Scheme Report 2022

Summary by Eleanor Colver



This is a summary of the County Dragonfly Recorder (CDR) Reports for 2022 which can be found in the Recording section of the BDS website or by scanning the QR code. A big thank you to all CDRs for their continued support.

Migrant Hawkers also performed well and notable records included: a count of over 300 on 13 September at Oakenshaw Nature Reserve, Durham; numbers in the double digits counted in mid-September in the Carlisle/inner Solway area, Cumbria. In addition, numbers were up on the Isle of Man where it was recorded from 15 sites. There are now annual Scottish records; its three main ranges are: the eastern Borders to Edinburgh, along the coast of southwest Scotland, and Ayrshire.

Southern Hawker continues to expand its Scottish range out from the Inverness area, the west coast, and southern Scotland; the species has now been recorded from almost 300 hectads (22 pre-2000).

The **Broad-bodied Chaser** expanded into southern Scotland, with 38 records in 2022, mostly from near Edinburgh and the Borders.

Emperor Dragonfly also had a bumper year in Scotland (62 records) where it was seen throughout the Borders and southwest Scotland, and occasionally in Ayrshire.

Small Red-eyed Damselfly continues to thrive; for example, up to 600 were counted in Sheffield Park, Sussex (23 June), and 600 plus on the Exeter Canal, Devon (17 July). It was recorded at two new sites in Gloucestershire (Tewkesbury Nature Reserve and Oddington House, near Stow-on-the Wold) and in Shropshire (Telford Town park and Pasford Farm,



Norfolk Hawker © Val Perrin

The effects of the unprecedented hot weather experienced during 2022 were noted by many CDRs; in particular, the drying out of their favourite wetlands. Some species appeared to thrive in the warm conditions, including the **Norfolk Hawker**, which now has sites all across Norfolk. In Suffolk new breeding colonies are beginning to emerge, including one in the valley fens of the Rivers Little Ouse and Waveney headwaters. The species is establishing itself well in Hertfordshire where records were received from 15 tetrads, and high counts were received from its Westbere and Stour Valley sites in Kent. Various sightings of dispersing individuals were noted including: Wimbledon Common, Surrey (5 July); Slapton Ley, Devon (17 June - 29 July); Lower Moor Farm, Wiltshire (July); and a female at Amberswood Common, Lincolnshire (19 June).



Emperor Dragonfly © Stephen Burch



southeast of Telford).

A rare sighting of a **Keeled Skimmer** was made in Durham at Twizell Woods; there was also the fifth Keeled Skimmer record for Derbyshire, made at Little Barbrook reservoir (21 August), and the first county record for Worcestershire, made at Ryall near Upton.

The range of **Scarce Chaser** continues to expand and notable 2022 records include: a record at a new site in Hampshire (Mopley Pond, southeast of New Forest), and sightings high up the Thames, north of Shillingford, in Oxfordshire. The species is also doing well on the Isle of Wight, at Sandown Meadows Nature Reserve, which had a max count of 23 on 16 June.



Scarce Chaser © Luke Gaskin

The **Beautiful Demoiselle**, another riverine species, was recorded at new sites in Leicestershire and the River Greta in Cumbria. The **Banded Demoiselle** showed continuing range expansion in Scotland in 2022 with records from the Borders and the southwest.

Reserve colony is healthy but there have been no recent sightings from its historic sites in the north of the county and the Grantham Canal. In Berkshire, only 11 records were reported, and it was only recorded once in Oxfordshire from the Barton Fields/Radley Lakes area.

The Northwest Yorkshire report states that **Hairy Dragonfly** is now reported yearly in the county and was recorded for the first time in Nosterfield Nature reserve. In Worcestershire, an exuvia found in Croome Park proved breeding on the Croome River. Two new breeding sites were also discovered in Dumfries and Galloway; this species' Scottish distribution is restricted to the southwest and Argyll.

There was some good news for **Southern Damselfly** in 2022; the Parsonage Moor colony, Oxfordshire, had a superb count of 425, and two new populations were found on the River Test in Hampshire.

Small Red Damselfly also had some good news with high counts reported at a number of Cornish sites. The species was also seen at a number of sites outside its core range in Devon, including Aylesbeare Common, suggesting its ability to disperse may be greater than we previously assumed.

Regarding our Red Listed species, **Variable Damselfly** was recorded for the first time in Dorset for some 30 years. Emergence records for Willington Daisleys Lake confirm it's now breeding in Bedfordshire. In Nottingham, the Skylarks Nature

Scarce Blue-tailed Damselfly had no Devonshire records but a new site was discovered on Cannock Chase, Staffordshire, and at a storm drain in Didcot, Oxfordshire. It was also recorded for the first time in Hertfordshire since 1948, at Kingsmead. In Wales, Breconshire records were low due to the desiccation of known sites like Mynydd Illtyd, but in Radnorshire, it was recorded at two new sites - one in the north and one in Rhos pasture to the west, where breeding was confirmed.



Hairy Dragonfly © Keith Noble

Common Clubtail had low records in 2022; for example, there were only five records from the Thames in Oxfordshire, one from the Severn in Gloucestershire, and the annual emergence counts at Bewdley in Worcestershire were poor. Worryingly, 2022 was the fourth year running in which no sightings were reported in Radnorshire.

The **White-faced Darters** at the Drumburgh Moss reintroduction site, Cumbria, continue to flourish; 1st-year larvae were found,



thus proving successful breeding. In Scotland new sites were found at: Ben Sheildaig, the neighbouring Kinloch, and near Invergordon.

Concern continues for the **Azure Hawker**; during an assessment of its five main breeding areas in Scotland, the majority of its pools were found to be in poor condition.

Northern Emerald was targeted for surveying in 2022, which produced 95 records from the northwest, Argyll, and Strathspey; a new breeding site was also discovered on the Woodland Trust Reserve south of Loch Arkaig.

Northern Damselfly had 76 records in 2022, two-thirds from Strathspey and the rest mainly from Deeside. Interestingly, this species was discovered in six sustainable drainage systems illustrating its ability to colonise new ponds and provides hope for this rare species.

The heatwave did not help our declining heathland species; **Black Darter** only had 11 records from Berkshire and one record from Sussex. **Common Hawker** only had two records from Gloucestershire, one from Norfolk, and none from Worcestershire.

Records of **Emerald Damselfly**, our fastest declining species, were outnumbered by Willow Emerald Damselfly in a number of vice counties, such as South-west Yorkshire, Cambridgeshire, and Huntingdon. Records were low in Cornwall; little over 100 were

received in Norfolk and in Sussex it was recorded in just seven 1-km squares, half the number of 20 years ago.

Finally, the **Dainty Damselfly** appears to be expanding its limited range in Kent and was recorded for the first time at a new site within Sandwich Bay and at Oare Marshes, Faversham, where over 200 were counted on 11 June.



Dainty Damselfly © Marc Heath

Get involved!

Will you be recording dragonflies this year? There are a number of ways you can get involved!

Send us your records

You can submit a single dragonfly record or a list of dragonfly records to the national recording scheme via iRecord [<https://irecord.org.uk>]

Migrant Dragonflies Project

Want to keep up with the latest migrant and rare species sightings? Join the Migrant Dragonfly Facebook group.

Adopt a Site

We are looking for enthusiast dragonfly recorders to carry out Complete List surveys at sites of their choice. Recorders are encouraged to adopt their local wetland sites, visiting it three times from May-September every year; the data generated from these surveys is very valuable when tracking species trends as well as identifying sites with a high species diversity or priority species, which need to be protected. If you need help selecting a site, contact your County Dragonfly Recorder for help.

For full details and help with identification visit our website.



News from Scotland

Working with Forestry and Land Scotland - Daniele Muir



Glen Affric © Daniele Muir

We were very pleased to sign an agreement with Forestry and Land Scotland (FLS) towards the end of 2022, which sets out an exciting future for dragonflies across the country! FLS own and manage approximately eight percent of Scotland's land, with over fifty sites being home to many of our rarest dragonflies including White-faced Darter, Northern Emerald, Azure Hawker and Northern Damselfly.

One of the aims of the agreement is to extend current knowledge on sites where priority and scarce species are present on the FLS estate, so the first step is to undertake surveys where site information is incomplete. Once we know the condition of the site and have a complete list of species present, we will be able to move on to the next stage – on the ground management. The country is split into five different areas – North, East, West, Central, and South, with most sites clustered in the north. Let's explore one of my favourite northern locations a little further!

Many of you will be familiar with Glen Affric as a summer holiday destination. When I was small we used to go on holiday to nearby Cannich and I have wonderful memories of paddling in the lochs and rivers, clambering through the sunny woods, and spotting wildlife – Red squirrels and Golden eagles were always top of the list - with my new binoculars. With a wide range of habitats in the glen – waterfalls, lochs, bogs and forests, White-faced

Darter, Downy Emerald and Common Hawker can all be found fairly easily. The area close to Coire Loch is certainly one of the top locations in Scotland to see White-faced Darters and there was an interpretation panel put in by FLS at the loch a few years ago to help people learn about the local Odonata.

However, as previously reported, the majority of the shallow pools which many of our rare species breed in, dried up in the hot and dry spring of last year in the north-west Highlands. We urgently need volunteers to carry out larval surveys in this area to see how larvae are surviving drought. Pat and I can give out further details if this is something you'd like to get involved with.

As well as fantastic sites to see dragonflies, there are top FLS locations for enjoying other iconic Scottish wildlife including Beavers, Ospreys, Red squirrels, Otters, and White-tailed eagles. There is a lot of scope to organise a fantastic wildlife holiday going from one FLS site to another, making the most of their hides and Ranger-led walks. More info can be found on their website here: <https://forestryandland.gov.scot/learn/wildlife>

We are really looking forward to working with FLS to provide training to staff, help implement on the ground improvements for rare dragonflies, and explore how peatland restoration processes can be modified to provide habitat for our rare bog-pool dragonflies.



Coire Loch © Daniele Muir



© Daniele Muir

Volunteer Update

Valuing our Volunteers - Andrea Hudspeth



Volunteering is an important part of any organisation as it allows people to come together and work towards a common goal. It is also a great way to build relationships, learn new skills, and give back to the community. Our volunteers are essential, providing valuable assistance to staff in meeting the society's aims to conserve dragonflies and their habitats. However, with the ever-changing environment, it is becoming increasingly difficult to keep track of our volunteer network and ensure that they are being recognised for their achievements.

Over the past year or so, we have been considering how we can revitalise our volunteer network by

recording volunteer roles and achievements, setting aims and objectives, and ensuring that volunteers are supported and rewarded for their charitable efforts. Through funding received from the Volunteer Impact Fund (in Scotland), we have been looking at how we can use technology to help us achieve these goals and ensure that volunteers across the UK receive the recognition they deserve for their valuable contributions.

Through our research, we have chosen a company called Beacon to help us to store and manage our volunteer data, as well as our membership data and fundraising data. This CRM system (customer or contact relationship management) has been achieving great reviews and awards over the past couple of years, and they have been holding our hands throughout the process of getting us set up.

We recognise that there are people out there who have been supporting the BDS voluntarily since the beginning of BDS's story, and this includes some of our current Trustees, who are volunteers themselves. Currently, we don't know when volunteers started to support us, in what ways and how often or indeed have any way of identifying who would like to volunteer but are unsure of how they can help, beyond just recording what they see.

We are now entering a phase in which we will record volunteer roles, recognise the achievements of volunteers, establish a framework of aims and objectives for the network, and make sure that our charitable aims are being met. By doing this we can ensure that our volunteers feel valued and appreciated for their hard work and dedication which will in turn lead to more successful outcomes for everyone involved.

To get us started on this journey, we ask that anyone reading this article who considers themselves a volunteer for the BDS, in whatever capacity, or would be interested in volunteering, kindly complete our new online Volunteer Application Form, either by following the link or scanning the QR code below.

Complete it as if you are applying as new, but note there is a question asking when you started volunteering for the BDS which will flag up to us that you are not new. If you have any queries with the form or would like to speak to someone to help you complete it, please email Andrea Hudspeth at andrea.hudspeth@british-dragonflies.org.uk

Many thanks in advance and we look forward to communicating with you more regularly from now on.

Complete the form by visiting: <https://britishdragonflysociety.beaconforms.com/form/0f7e1853> or scanning the QR code with your phone camera!



Studying New Ponds in Leyland

by Ian Fairey

In late 2021, aided by a small BDS Corbet Moore Award grant for equipment, I set out to study two newly created ponds in Leyland, Lancashire to go along with my Open University environmental studies. Pond A was created near existing fishing and dipping ponds, and close to a housing estate (only local visitors), whilst Pond B was in a very popular park (maybe 300,000 visitors a year). Both ponds were dug in September 2021 and filled by rain in October. I felt it was an opportunity to be grabbed, to see what would appear and use these new ponds ... and how soon in 2022 would I see any Odonata usage?



Pond A

Both ponds started out very muddy, while Pond A cleared a little at the sides over the course of my study. Here I found that creatures such as water fleas, water boatmen, beetles, amphibians/newts and midges came to make the pond a home. I also once happened to come across a water scorpion. I had never seen one before, but it was unmistakable surely!? Some vegetation was on the edge of the pond which I thought may attract certain insects.



Water Boatman

So you are all wondering where the Odonata were. Well they did come visiting and in fair numbers. Maybe they arrived from the nearby dipping pond, which silted over a bit, or from the nearby fishing pond. I saw a few Blue-tailed Damselflies hanging around and I was excited to see Emerald Damselflies in pairs. I was even more excited to see three to six Azure Damselflies and some Common Darters egg laying at the new pond during the course of the year. Also there was a male Southern Hawker buzzing around checking out the new location.



Water Scorpion

Pond B at the popular park remained mostly muddy throughout the year. There was less pondlife evident here, with a limited amount of water fleas, water boatmen and midges, but I did see some amphibians/newts. This pond was the first of the two to be visited by a dragonfly - a Broad-bodied Chaser. However, I only saw it once and even when visiting within thirty minutes of seeing egg laying in Pond A, I did not encounter one again or see any other dragonflies at this second pond.

Overall, the new ponds have been a good addition to the local environment. They provide new habitats and food sources, and are therefore helping to support biodiversity in the area. They also held water throughout the very dry summer of 2022, so were useful in that respect too. Since Pond B had a lot more disturbance from visitors and their dogs, this may have affected its chance to build up its ecosystem. So in turn it was less attractive to dragonflies than Pond A. It is interesting how two ponds of similar age and in the same town can differ. The full results of my study have been passed on to relevant local groups, so they can be used in their thoughts and plans for the future. In 2023 I hope to see what the next season of dragonflies looks like. I also hope to extend my pond dipping studies and see how the range of other pondlife develops and compare their numbers.



Blue-tailed Damselfly Female



Common Darter pair



Broad-bodied Chaser Male



Celebrating our 40th Birthday

The British Dragonfly Society was founded in April 1983, and thus this year marks a big birthday. Throughout the year we will be celebrating 40 years of the BDS.

With our growing team of staff and volunteers, and increasing list of brilliant Dragonfly Hotspots- there is a lot to celebrate. Help us celebrate this year by joining us at one of our events, field meetings or our AGM in November.

Get involved and send us your BDS and dragonfly memories to be featured in our special 40th celebration article in the Autumn magazine.



Dragonfly Hotspot Launches 2023

Panshanger Park



Panshanger Park is in the Mimram Valley, Hertfordshire. It is owned by Tarmac and managed in partnership with Herts & Middlesex Wildlife Trust. Previously quarried, a large part of the site is now open as a nature reserve and country park. The network of lakes provide habitat for a diverse range of dragonflies and damselflies.



Osprey Lake © Peter O'Conner CC BY 2.0

WWT London Wetland Centre

A brilliant place to connect with nature so close to the heart of London. **Join us for the hotspot launch on Sunday 9th July!**



London Wetland Centre © WWT

Check our website events page for more information on the details of the launch events



New insights on the habitat preferences of the Northern Emerald Dragonfly

Luigi Cristofaro

© Joanne Hood

The Northern Emerald Dragonfly (*Somatochlora arctica*) (Fig. 1) remains one of the rarest and most challenging dragonfly species to survey in the UK, with its presence being only recorded in localized areas in the Centre-North of Scotland. Past studies suggested that individuals of this species tend to prefer peatland habitats in the vicinity of coniferous woodlands, with a presence of Sphagnum-filled shallow bog pools. However, it is important to note that the majority of these observations were based purely on empirical data and lacked proper statistical backing. As I have always been passionate about dragonfly conservation, I have decided to address this knowledge gap regarding the habitat preference of the Northern Emerald Dragonfly by making it the focal point of study for my MSc dissertation project; a project which has now been successfully completed and that I am ready to share with you.



Fig. 1 Larva (nymph) of Northern Emerald Dragonfly (*Somatochlora arctica*). Photo was taken by Luigi Cristofaro during field surveys 19/06/2022.

The project involved repeated surveys on a monthly basis over the summer months of 2022. The surveys involved the capture and release of individuals of Northern Emerald Dragonfly at the larval (nymph) stage (Fig. 2.B) in Sphagnum-filled bog pools at three known hotspots of the species in Scotland; these were Abernethy & Loch Garten NNR, Beinn Eighe NNR and Flanders Moss NNR. A colander was used to extract the larvae from underneath the top Sphagnum layer and, after identification, each larva was safely returned to the original pool; however, exuviae were sometimes kept (Fig. 2.A, 2.C & 2.D). At each survey site, a number of environmental variables (e.g. Sphagnum species, Sphagnum depth, water temperature, distance to the nearest woodland) were also collected, as these were later compared to the numbers of individuals of the species found within each bog pool and, through the use of statistical tests, used to determine the habitat preferences for the species.

The data collected indicates that the Northern Emerald Dragonfly did prefer peatland sites in the vicinity of coniferous woodland, as previous studies suggested. However, the data also suggests a new and somewhat unexpected environmental factor that impacts the habitat preferences of this species: The type, or more precisely the species of Sphagnum present in each bog pool. Bog pools can, of course, be filled or surrounded with more than one species of Sphagnum, however, one is often more abundant than the others. It turns out that, according to the data collected, larvae of Northern Emeralds are more likely present in Sphagnum pools filled primarily with either *Sphagnum cuspidatum* or *Sphagnum denticulatum*; two fairly common species in northern Scotland. Conversely, Northern Emeralds seemed to be virtually absent from bog pools filled with *Sphagnum fallax*.

After this revelation, a number of possible hypotheses were formulated: Could it be that



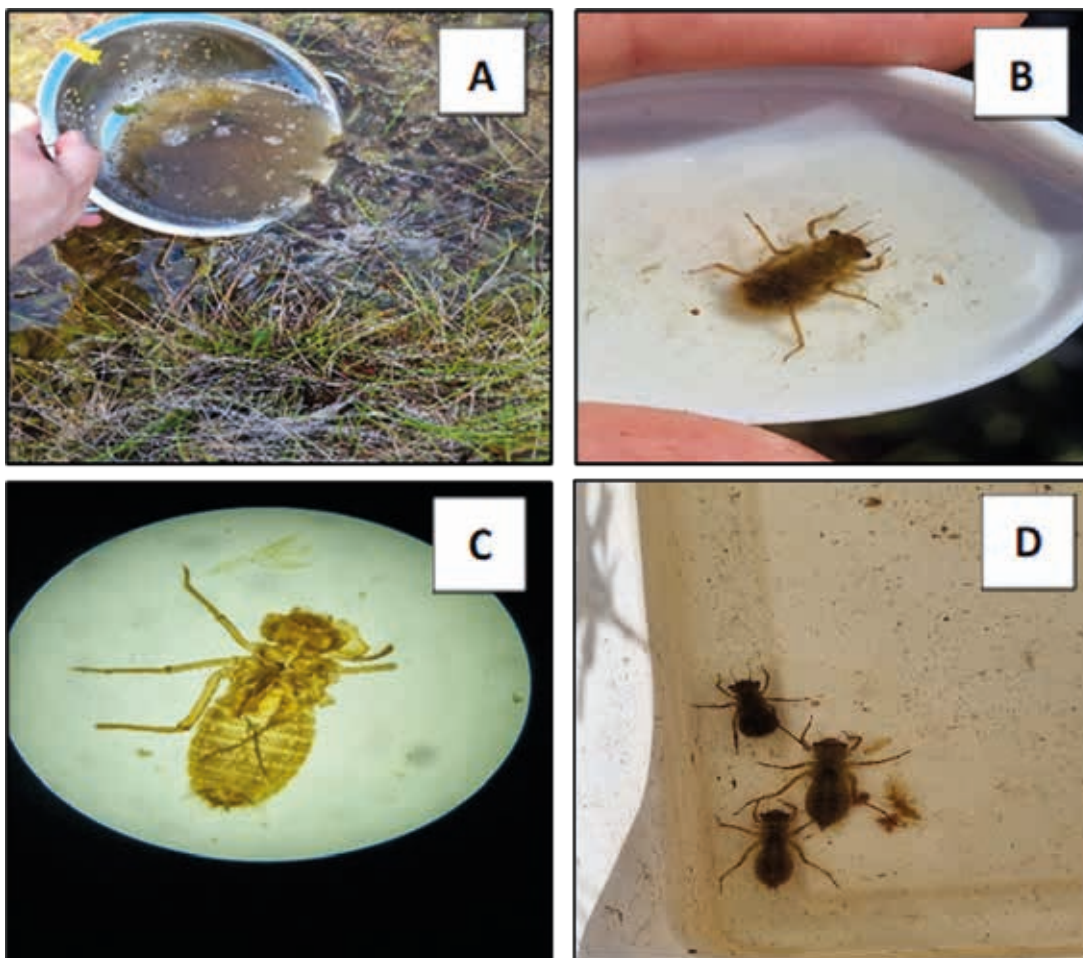


Fig. 2 Photo A shows the collection of dragonfly larvae from a bog pool by using a colander to extract the larvae from underneath the top Sphagnum layer. Photo B shows a collected nymph of Northern Emerald. Photo C shows an exuviae of Northern Emerald under a microscope. Photo D shows 3 dragonfly larvae after extraction. The 2 individuals at the centre and bottom of the photo are Four-Spotted chasers (*Libellula quadrimaculata*) and the individual at the top is a Northern Emerald Dragonfly.

different species of Sphagnum could somehow alter the habitat characteristics within each individual bog pool, therefore, making the habitat conditions more or less favourable for Northern Emerald? This could be true as, after all, we do know that Sphagnum can be an ecosystem engineer. Or could it perhaps be that certain Sphagnum species may be related to the presence of other invertebrates, on which larvae of Northern Emerald feed?

The truth is, that we are still lacking enough data to truly formulate a definitive theory regarding the observed habitat preferences. What we do know, however, is that the data collected in this study provides useful new insights upon which future studies can build, as well as providing new prospects for peatland and dragonfly conservation and management programs.

In fact, this is a very exciting insight for conservation efforts of this species as it opens the door to new possible peatland management systems that could help to conserve current hotspots as well as expanding the national home range of the species. For starters, the data collected provides stronger tested evidence of the important role that coniferous woodlands play in the site selection of Northern Emerald. This means that future peatland management efforts in sites wishing to expand existing populations of the

dragonfly species could focus on the expansion of coniferous woodland sites surrounding the peatland. Or alternatively attempt the creation of woodland corridors, although these can be challenging at times to manage in the context of peatlands, as they would require the presence of sections of woodlands within the peatland boundaries which, generally, tends to be avoided as a conservation practice. The impact of different species of Sphagnum, although requiring further study to be conducted, could potentially influence future conservation programs. Practical applications here could involve the focus on the expansion of peatland areas with presence of Sphagnum species that have shown to positively impact on the presence of the Northern Emerald Dragonfly. Likewise, a good conservation practice could be to focus future conservation efforts in areas where these species of Sphagnum are already located, as these would likely have the highest rate of conservation success.

In general, this study has shown exciting new insights into the habitat preferences of this rare dragonfly, which I hope can successfully inform future conservation studies and help with the management of the species and related protected areas.



SPOTLIGHT ON

Broadland Country Park David Weaver

Broadland Country Park, Norfolk, occupies an area that until recently was relatively unknown for its wildlife. Historically it was part of the heaths that extended across the glacial soils north of Norwich, along the western fringes of the Broads. Since the 18th century most of these were enclosed and either farmed or planted with conifers and other trees. However, as trees have matured for harvesting, the potential for habitat restoration has been realised, helped by funding through agri-environment schemes. In 2014, 25 acres of pines were felled surrounding a small valley fen and mire complex at a headwater tributary of the River Bure, and heathland has quickly returned. In 2020 Broadland District Council took on the 140 acre site as a country park to meet the need for public green space as local residential developments have increased. Fortunately, its biodiversity importance has been recognised as a County Wildlife Site, and by an agreement with Norfolk and Norwich Naturalists Society for a three-year research project to survey the wildlife and help inform its management. Several nationally and locally scarce invertebrates and fungi have been found, particularly saproxylic species. Among more familiar wildlife, both Nightjar and Woodlark regularly breed and 25 species of butterfly including White Admiral and Silver-washed Fritillary are recorded.

Habitat management has included opportunities for wetland enhancement and creation with an emphasis on holding water onsite during the recent hot, dry summers. Before this began the site was often surface dry by mid-summer. In addition to maintaining existing pools within the mire, work also includes pond and pool creation, refunctoning and blocking of former forestry drainage ditches, and rewetting of seepages into the mire.

The dragonflies have responded well, increasing to 22 species since management, with one pond having attracted 17 species alone. Widespread species such as Azure and Large Red Damselfly, Four-spotted and Broad-bodied Chaser, Southern Hawker, and Common Darter are ubiquitous and increasing, while more specialist species such as Keeled Skimmer and Scarce Emerald Damselfly now breed in small numbers. In 2022 Scarce Blue-tailed Damselfly appeared for the first time.

A network of paths is gradually being created around the site to enable guided wildlife walks with sensitive areas being protected from disturbance, while activities such as dog-walking or cycling are popular elsewhere on the park.



Left: Keeled Skimmer. Above: Scarce Emerald Damselfly. Images - David Weaver

More information:

To find out more visit their website: <https://www.southnorfolkandbroadland.gov.uk/broadlandcountrypark>

Facebook: Broadland Country Park



Dragonfly Hotspot Funding Appeal

On Sunday 9th July, during Dragonfly Week, we will be launching an exciting new Dragonfly Hotspot at WWT London Wetland Centre. The Centre brings 105 acres of countryside into urban London, situated in the London Borough of Richmond upon Thames. Although close to the heart of the capital, it is a haven of tranquillity for both wildlife and people. With six hides and 180 bird species recorded each year, it's a birder's paradise. This incredible mosaic of wetland habitat is also home to a rich diversity of insect life, with 26 species of dragonfly and damselfly! Species include: the London scarcity, **Hairy Dragonfly** *Brachytron pratense* and fairly recent colonists to the UK – **Small Red-eyed Damselfly** *Erythromma viridulum* and **Willow Emerald Damselfly** *Chalcolestes viridis*. The last few years have seen the **Norfolk Hawker** *Aeshna isoceles* and **Scarce Chaser** *Libellula fulva* added to the site list.



Black-tailed Skimmer © Penny Smallshire

We are raising £2000 to design and install interpretation boards, and provide educational resources, ready for our launch this summer. Please donate to help us to educate visitors about the amazing life of the dragonflies at the London Wetland Centre.



Norfolk Hawker © Naomi Landy

To donate to our Appeal go online: <https://british-dragonflies.org.uk/product/donation/>

or send a cheque payable to the British Dragonfly Society with a note to indicate it is for 'London Wetland Centre Appeal' to: Ashcroft, Brington Road, Old Weston, Huntingdon, PE28 5LP

Please note: any donations received above our target will allow us to install boards at other Hotspot sites across the UK. Thank you.

To find out more about the London Wetland Centre visit their website:

www.wwt.org.uk/wetland-centres/london



London Wetland Centre © WWT





Young Naturalist Section

Dragonflies and Me: our new Trustees

At the end of 2022 we welcomed four new trustees to the BDS team! We asked them to share with us their best dragonfly encounters.

Bailey Tait

Campaigns Officer and WILD Magazine Editor at Essex Wildlife Trust

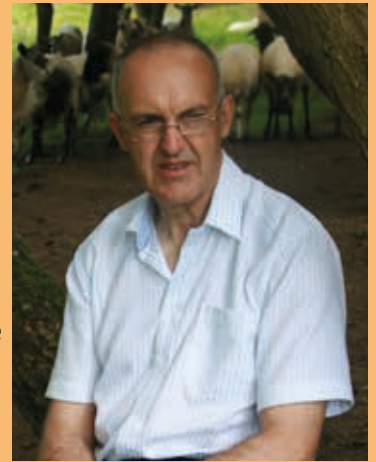
My favourite dragonfly encounter is the first that I can remember. Growing up, I was lucky enough to have a pretty large garden. Naturally, my garden paradise felt much bigger back then even though it hasn't changed in two decades. In the garden was a pond full of lily pads and big orange fish. During summer I used to sit cross legged by the pond and try to count the fish. One day, a large, winged creature shot past me. A rather worried "Daaaaaad..." squealed out of me. He explained that this majestic insect was a dragonfly. From then on, sightings of dragonflies became exciting and momentous occasions. I enjoyed watching them whizz around and couldn't believe that this seemingly carefree creature that could fly anywhere would choose to come to our garden.



Mike Lehane

Retired academic, previously Professor of Entomology at the Liverpool School of Tropical Medicine

I grew up on the North Kent marshes. The Lapwings were 100 yards from my back door and as far as you could see there was just marsh, drainage canals and huge skies. Since then I have worked all over the world and the only skies I have ever found to match them were in the West of Ireland. Every day was summer and bird watching through a pair of old opera glasses (which I still have even though they are long retired) or catching (and releasing!) slow worms and grass snakes from under the pieces of galvanised tin we scrounged. But the greatest excitement was netting the drains and all the amazing, unidentifiable invertebrates we dredged up. And kings among those were my first dragonfly nymphs.



Carmel Edwards

Senior Policy Advisor at WWF-UK

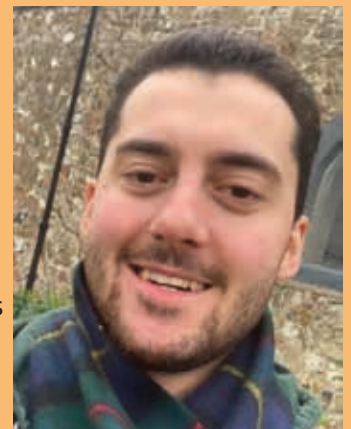
My best dragonfly encounter was watching swarms of dragonflies along the banks of the River Great Ouse last summer. Emperor dragonflies and Demoiselle damselflies were in abundance all the way along the 3 mile stretch from Eaton Socon to Paxton Pits, flying back and forth over the yellow water lilies and yellow irises. When walking and kayaking this I also regularly saw fish, herons, kingfishers, cormorants, reed warblers and many other small and wetland birds, and on a few occasions a kestrel and water snake. My other memorable dragonfly hotspots are Rudd lake in Paxton Pits, Étang du Moulin and neighbouring lakes when I lived in Brussels and the sand dune pools in Ainsdale, near where I grew up.



Josh Younespour

Senior Policy Advisor at DEFRA

Every encounter with a dragonfly is special and captivating. For me, one of my more recent memories of seeing dragonflies stands out. After recently moving to our new home, which is situated in the countryside and by a waterway, we started seeing large numbers of dragonflies that I had never seen before. Upon investigation, we found big clusters of them sunning on an old log and we marvelled as they darted around in the late summer evening. It is indicative of the unique beauty of dragonflies that it made our new home feel particularly magical.





handwritten labels is one of the many challenges. I'm very relieved that most Entomologists now print their data labels!

Do you have any advice for anyone wanting to start a career in Entomology?

Get involved with your nearest natural history society or museum, and try to get out in the field or talk to like-minded people. We have a wonderful network of welcoming, knowledgeable Entomologists in the UK – many are eager to share what they know. There are also some great resources available via the Royal Entomological Society's website.

Finally, what, or who inspired you to want to work with insects?

I came to Entomology via a somewhat indirect route. I went to university to study forensic science and discovered the incredible applications that insects can have in solving criminal investigations – hence my fondness for Carrion Beetles. I became instantly fascinated and this new interest was nurtured by some hugely inspiring lecturers (shout out to Dr Kate Barnes and Professor Karim Vahed) which led me to pursue a master's in Entomology at Harper Adams University. It was there that I met the late Professor Simon Leather, and his infectious enthusiasm and mentorship really solidified that studying and advocating for insects, was exactly what I was meant to be doing.

Keep in touch with Ashleigh:

Twitter: @AshWhiffin
Instagram: ash_whiffin

Learn more about how to get involved with the Carrion Beetle Recording Scheme on our website: <https://www.coleoptera.org.uk/silphidae/home>

Working With Wildlife

Ashleigh Whiffin

© National Museums Scotland

I'm Ashleigh Whiffin and I'm an Entomologist and Curator at National Museums Scotland, based in Edinburgh. For the last 8+ years I've been responsible for the care, curation and development of the insect collection, containing approximately 2.5 million preserved specimens.

What is the best thing about your work?

It's hard to pick! One of the primary tasks is to ensure the collection is accessible to anyone wishing to work on it. This means hosting a wide array of visitors; everyone from researchers, other museum professionals, ecologists, students, local naturalists, and even artists. I get to meet lots of incredibly interesting people and hear first-hand about some of the exciting work happening within the community.

I'm also very privileged that I sometimes get to travel, both nationally and internationally, for fieldwork, conferences and to visit other museum collections. This further increases the incredible diversity of insects I get to feast my eyes on!

What does a typical day/week involve?

No two weeks are the same –

that's yet another reason why I love museum work! Along with hosting visitors to the collection, I also process requests for research loans (sometimes arranging for specimens to be shipped halfway around the world), deal with specimen donations and public inquiries. On other days, I may have the opportunity to be creative and share some of the marvellous stories and diversity from the insect world, through creating new displays, exhibitions, or organising public events.

My own research interest is focused on carrion ecology and I specialise in Carrion Beetles (Silphidae), a fascinating group that helps to facilitate the decomposition of vertebrate remains. Their lifestyle choices aren't as glamorous as some of the more well-known groups but they're vitally important decomposers. I've been trying to encourage more people to take notice and record these beetles through a voluntary project – the national Silphidae Recording Scheme.

Describe the most challenging aspect of your work?

There's always too much to do! It's a frequent juggling act to fit it all in. Working with collections, a large amount of time is spent on documentation and databasing specimens. Transcribing old,



Defending the Devils Darning Needle

An essay by Isla Callis

Isla (aged 16), inspired by dragonflies and driven by the want to protect and conserve them, wrote the following essay for an English assignment at school. Isla has a love for all things Odonata! She really enjoys taking photos and reading the articles in her BDS member magazine.



“Habitat destruction and the effects of climate change are threatening the survival of a third of Britain’s dragonfly species.” The prehistoric sentinels of our freshwater and wetland ecosystems have been incredibly clear indicators of healthy water since way before the dinosaurs. Since the appearance of humans, they have been the subject of plenty of myths, legends, art pieces, and poems, securing their place in history and culture forever. Due to this and the environmental significance of dragonflies, can we really justify letting their numbers decline to such a critical level? Their role in wetland ecosystems is imperative and simply their presence is useful to researchers and farmers alike. Innumerable factors threaten the existence of dragonflies and yet hardly any action is being taken to prevent the extinction of entire species within the order Odonata, exemplified by national geographic: “In 2009, the first comprehensive assessment of insect species showed that 10 percent of dragonfly species were under threat of extinction.” They can’t fight back. While dragonflies are an obscure species they are the backbone of the ecosystems they appear in, knowing this why do we give in to the filthy human habit of pollution? Their niche makes it clear that the extinction of the dragonfly is not an option.

Devil’s darning needle, horse stinger, ear cutter - by these nicknames alone it is clear that in the west of the world dragonflies, for a long time have been greatly misunderstood as pests. In contrast, in the east of the world dragonflies have been of great cultural importance, and the inspiration of mythology, literature, and art for years. For example in Japan, where a journal (Tombo) has been devoted to reports of their biology since 1958, dragonflies (Odonata) traditionally have been held in high regard. In other Asian cultures, they are considered benign and auspicious. Simply the fact dragonflies exist for us to marvel over and inspire our imaginations to create refined works of art is a sign they deserve our utmost respect. Unlike most insects, dragonflies have glued themselves into our cultural history, not only in Asia but in Britain too, though less frequent, dragonflies were found to be mentioned numerous times in medieval and renaissance illuminated manuscripts. Like any other important historical artefact, intricate and beautiful, dragonflies deserve our total care and attention to guarantee that their impressive, prolonged reign over the invertebrate kingdom lasts another 320 million years.



After emerging from the water, ending their larval stage, crawling out of their exuvia, and beginning their fleeting life on wings, dragonflies only have on average two weeks as an adult to complete mating and find a suitable habitat to lay their eggs - the essential next generation. Since we live in a modern world of fertilisers, chemicals, and climate change it’s becoming increasingly difficult for these frustrated flyers to find somewhere for the new population to grow up. Ponds and wetland habitats suitable for the specific needs of the dragonfly are depleting and constantly being polluted, fertilisers causing algal blooms, pesticides, and general rubbish prevent this crucial indicator species from being able to start the next generation. However, organisations like BDS (The British Dragonfly Society) are trying incredibly hard to augment a domain that Odonata are able to thrive in. Once dragonfly species have inhabited an area, the biodiversity of the ecosystem is greatly increased. Their presence adds an advantageous

factor to the habitat and is exceptionally beneficial to the lives of most of the surrounding wildlife. As an apex predator of the pond or wetland, Odonata control the numbers of a large collection of insects, this skilfully maintains balance and means the ecosystem is at a healthy equilibrium. For landowners or even ordinary people with a pond in their back garden, dragonflies will generally keep the ecosystem stabilised without the need for any interference. Simple.

Dragonflies are not only a great mediator to an environment but they can also be useful in ways that are more essential to usual human life. Like spiders, dragonfly prey includes biting insects such as midges, mosquitoes, and horse flies, even the larvae of dragonflies prey on these species. Dragonflies are helping reduce the number of these pests at every stage of their life cycle. Adult Odonates cannot be used as effective pest control in specific areas but rather generally, however, their younger counterparts (the larvae) according to Britannica “have been used successfully in Myanmar to interrupt transmission of the mosquito-borne disease dengue.” Why stop at dengue? Malaria, a mosquito borne disease that kills almost 1 million people each year, could be significantly reduced by encouraging dragonflies to patrol and lay their eggs in stagnant water around towns or settlements. This quality alone should be reason enough to conserve all dragonflies. It’s been proven they’re saving human lives, why can’t we save theirs?

Unsurprisingly pest control isn’t the only handy use for these diverse insects, they are most commonly used as a biological indicator species, as stated in the journal of ecotourism “what butterflies do as flagships for the terrestrial environment, dragonflies can do for the aquatic environment”. Effortlessly they save farmers and researchers a wealth of money on expensive, complicated, and intrusive equipment that would be used to check water health/quality. For example in India the coffee growing community has started using dragonflies as a biological monitor/biomonitor (an organism that provides quantitative information about the environment around it). By constantly monitoring the behaviour, population and distribution of dragonflies in their coffee plantations, owners can easily target areas of pollution or bad water quality. This technique of using naturally occurring wildlife to manage their land is completely sustainable, unintrusive to the environment and virtually free as it requires no special equipment.

In summary, during their glorious reign, dragonflies have survived much peril, hurricanes, Tsunamis, and even the meteor that wiped out the dinosaurs. Yet now their existence is threatened by meager humans. They have spent millions of years evolving into the – perfectly formed - ultimate predator. Their beauty and many quirks have been admired by thousands of artists, with many important pieces of artwork being inspired by their image. Dragonflies complete whole wetland ecosystems, and improve overall biodiversity, they can even act as a form of natural pest control and they may in the future have the potential to save lives. Despite their misleading reputation, the ‘horse-stinger’ presents humans with only benefits. Surely the barbaric pollution of the habitats in which these incredible insects thrive and reproduce is unacceptable. It is in this critical moment in time that all humans are obligated to stand, take accountability and fix our own mistakes. We have little time remaining before our selfish actions catch up with us and we lose dragonflies forever.



About Isla

“I’ve been interested in dragonflies since I was very young. These intricate insects took my interest mostly because my dad is obsessed with photographing and recording them. I therefore have keenly followed in his footsteps and have started learning about, and photographing them. My interest was enhanced after attending more than one Scottish dragonfly conference and receiving a letter from Sir David Attenborough stating that his favorite insect was also a dragonfly!”



Chasing *Ischnura* in Scandinavia

Stephen Corcoran



Insect distributions are shifting rapidly in response to climate change and are undergoing rapid evolutionary change. The researchers within the School of Biological Sciences at Aberdeen University are looking at Blue-tailed Damselflies (*Ischnura elegans*) to understand how this species is adapting to climate change during their poleward range expansion. Data collected so far from Scotland and Sweden has shown species adaptation.

This summer I joined two other university research staff to travel to Scandinavia to collect damselfly samples across latitudinal transects in Finland and Norway for this climate change project. I was employed as a temporary research technician providing the team with Odonata expertise.

The fieldwork involved identifying survey locations (lakes and ponds) and using large sweep nets to catch damselflies either on the wing or in

vegetation. Blue-tailed Damselflies, if present, were then placed in “bug-cages” for processing while other species were identified, recorded, and released. The aim was to try to catch 20 male and 20 female Blue-tails from each site.

The day’s catch was processed in a mobile “lab” in the evenings where individuals were sexed, colour form and wing maturity recorded as well as the number of macro-parasites (if any) before each one was scanned to create a digital image. The samples were then placed in tubes of ethanol to be returned to Scotland for DNA analysis.

Finland

First stop was Finland in early June surveying around Helsinki (60 degrees North) then moving north over the next 14 days in bounds of around 50-70km. Finland is a land of forests and lakes – a lot of lakes! One of our main challenges was finding access along forest clad lakesides to survey. The presence of “swimming beaches” with cleared areas were found to be good spots to undertake fieldwork though not always representative of good habitat for Blue-tails. Lake swimming is a national pastime in Finland with nearly every lake having a swimming platform, changing rooms, barbecue pits and composting toilets – I enjoyed having a quick dip at the end of the day.

We arrived in Finland in early June, a little early in the season for Blue-tails meaning we were not quite as successful as we had hoped. The weather was generally good, quite warm on many days, though a spell of cold, wet weather dampened fieldwork in the far north towards the end of our trip. We travelled some 450km north of Helsinki,



Blue-tailed Damselfly (*Ischnura elegans*).
© Davie Mitchell.



through the centre of the country reaching nearly 64 degrees north around Sukeva.

We recorded Blue-tails at over half the 51 sites visited and collected around 300 individuals. We did not quite manage to get to our 20/20 target, averaging 10-11 individuals per site, and Blue-tails were only in modest numbers at most sites. It is also likely that we did not reach the range edge of the species though we did find new sites.

I built up an extensive species list recording 2 species of demoiselles, 12 of damselflies and 11 species of dragonflies across all sites. Commonest damselfly species seen after Blue tails were Spearhead Bluet or Northern Damselfly as we call it in Britain (*Coenagrion hastulatum*), and Variable Damselflies (*C. pulchellum*) with many of the latter having similar colour forms to Blue-tail males, a frustrating experience when trying to find our target species. One highlight was seeing quite a few Eurasian Baskettails (*Epitheca bimaculata*), mostly just emerging from their larval skin – this is quite a difficult dragonfly to see in its adult form. For me

it was great to see lots of new Odonata species with several favourites being the tiny Arctic Bluet (*Coenagrion johanssoni*), the uncommon Siberian Winter Damsel (*Sympecma paedisca*), White-legged Damselfly (*Platycnemis pennipes*), and the pretty Lilypad Whiteface (*Leucorrhinia caudalis*).

Norway

Just after mid-summer we travelled to Trondheim on the west coast to start our Norwegian odyssey. Like Finland, it never got dark at night, a sort of bright twilight for 3-4 hours persisting between sunset and sunrise. The landscape is dramatically different from Finland with high mountains and fjords, nearly all heavily forested and fewer lakes. In a sweltering heatwave of 29 Centigrade we headed 250km northwards towards Terrak via Namsos. At 65 degrees north, the same latitude as Iceland, we were barely halfway up the country and were still some way off the range limit for Blue-tails. Due to the pressure of time, we then headed south for



Left to right: Variable Damselfly (*Coenagrion pulchellum*) female. Eurasian Baskettail (*Epitheca bimaculata*) newly emerged. Lilypad Whiteface (*Leucorrhinia caudalis*) newly emerged female.



Left to right: Arctic Bluet (*Coenagrion johanssoni*) female. White-legged Damselfly (*Platycnemis pennipes*) female. Bog Hawker (*Aeshna subarctica*) male.



nearly 700km from Terrak down the coast past Trondheim, Kristiansund and Alesund towards Bergen (at 60 degrees North), sampling sites as we travelled.

Reflecting Blue-tails Norwegian name, Kystvannymfe (“coastal water nymph”), we focused our search efforts on lakes and ponds near the coast. Our success rate in finding sites with blue-tails was much higher in Norway, and we found them at over two-thirds of the 49 sites we visited. The number of individuals caught at sites in Norway was higher than in Finland, with over 700 individuals caught. This reflects being in the middle of the flight season, with catches of over 20 individuals at many sites.

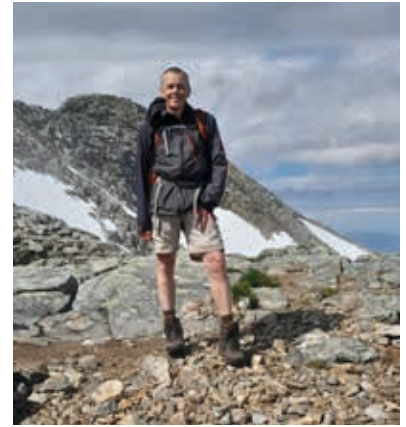
In true Norwegian style (it’s not called the land of waterfalls for nothing) we had to contend with over two weeks of continual rain and cool temperatures. Those hot days of mid-summer were much missed as we had to beat the damselflies out of wet vegetation.

I did chalk up another good species distribution recording one species of demoiselle, 9 species of damselflies and 11 of dragonfly. The commonest damselfly species in Norway I recorded was the Common Blue (*Enallagma cyathigerum*).

I saw a lot of both countries, driving thousands of kilometres, particularly in Norway (where they like building long road tunnels), and stayed in some lovely campsites. In Norway, I had some spectacular

backdrops to my work and even managed to walk up a great mountain, “Heilhornet” at over 1,000m.

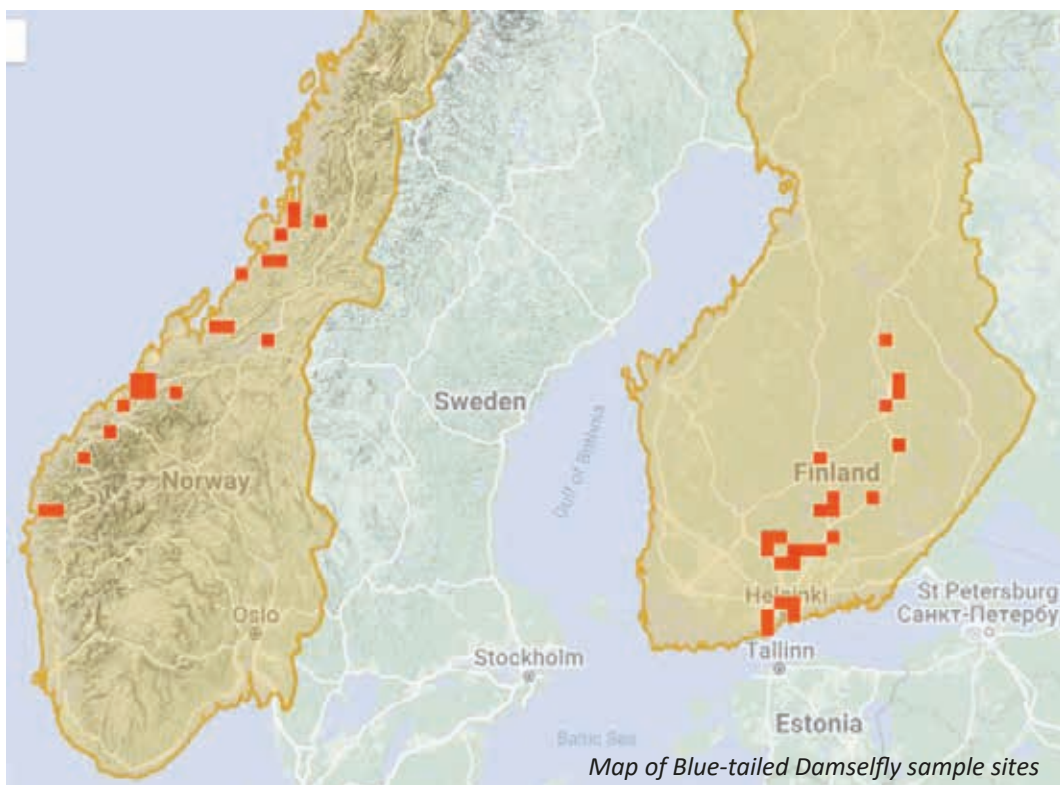
I saw plenty of other wildlife, spotting over 80 bird species in Finland and nearly 100 in Norway, some 25 species



new to me. It was also astonishing to see the difference in the ground flora of woods, meadows and road verges between Scotland and Scandinavia. In both Norway and Finland there is a lush and diverse field layer full of flowering plants and other species that is just not present in our heavily grazed habitats in Scotland.

On returning to Scotland, I then spent several weeks helping the team take measurements of each damselfly caught from the digital images. Research staff at Aberdeen University are now analysing the data and will be producing research papers on the back of all the field work.

A thoroughly successful field trip bringing back 1037 Blue-tailed Damselfly samples from over 70 sites as well as detailed species lists for all 100 sites I visited. The map below shows the distribution of sites where Blue-tails were found by the team.



Studying pruinescence in males of Black-tailed Skimmer and Keeled Skimmer

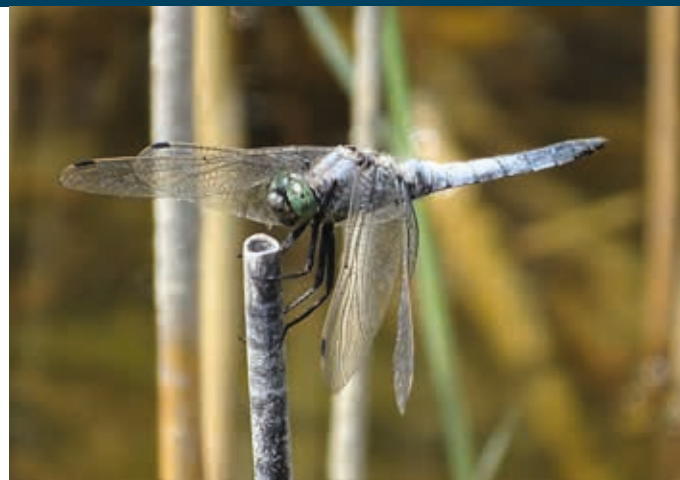
by *Andreas Chovanec*

Climate change has manifold effects on dragonfly communities. Range expansions in many species within the last decades are the most obvious responses of species to increased temperatures. Both dragonfly observers and scientific odonatologists have also proved phenological shifts. Furthermore, early studies have also dealt with influences on interspecific interactions and competition. This short note deals with obvious colour variations in two *Orthetrum*-species, which can be interpreted as a response to climate change and rising temperatures.

In the central and northern parts of their range, males of the Black-tailed Skimmer (*Orthetrum cancellatum*) and of the Keeled Skimmer (*Orthetrum coerulescens*) are characterised by a brownish thorax, with slight pruinescence only in older specimens at the end of the flight period. Since 2016, I observed some male *O. cancellatum* and a high number of male *O. coerulescens* with an intensively pale blue thorax, similar to adult males of the Southern Skimmer (*Orthetrum brunneum*). The investigation sites were situated in Lower Austria between 200 and 300m above sea level. Even in young mature and middle-aged males, the thorax was wax-covered to a degree known particularly from the southern parts of the species' distribution range. Moreover, frons, veins at the wing base, and femora were also covered with wax and, thus, appeared blue. This – for this latitude – extraordinary pruinosity is interpreted as species-specific variation and thermoregulatory adaptation to increasing air temperatures in Central Europe due to climate change. Meteorological data for the study region support this hypothesis by showing significantly higher air temperatures compared with long-term meteorological monitoring data.

Pruinescence on the body supports thermoregulation by reflecting UV radiation. In this context, the thorax seems to play a major role, because the protection of the abdomen can also be enabled by postural adjustments, such as the obelisk posture. Consistent with this interpretation of the role of pruinescence is the greater development of this wax-based colouring in populations inhabiting hotter environments. By reacting to higher temperatures with stronger pruinescence, males are likely able to hold their territories over a longer time without overheating.

The cover photo of the JBDS Volume 36 Number 1, taken by Steve Cham, also shows a Keeled Skimmer with a rather blue thorax. I think it is of interest if this colour variation is widespread up to the northern range of these species and I invite all dragonfly observers to draw their attention to this phenomenon.



A Black-tailed Skimmer with pruinosed thorax. This photo, taken on June 29th, 2021, shows a mature but rather young male. At the investigated water-body this species was observed until mid-August.



The wax coverage of the femora in a male Black-tailed Skimmer may stand in context with the preferred perching sites on gravel and larger stones with increased reflection of radiation. The female shows a strong pruinescence on the less pigmented and sclerotized ventral side of the abdomen providing protection for the reproductive organs against UV radiation.



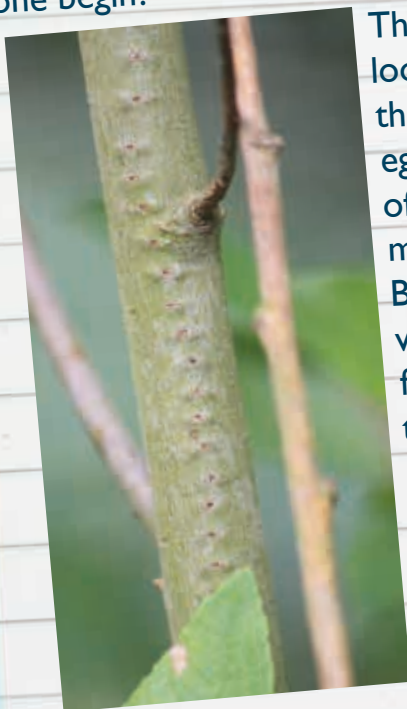
A male Keeled Skimmer with a very pruinosed Thorax at an early stage of the species-specific flight period, July 7th, 2019



Field Notes

Green Tide - the search for Willow Emerald by Alan Homes

You are looking for something the size of a green matchstick in overhanging willows on any pond or lake. It seemed not so much looking for a needle in a haystack, as looking for a green needle in a green haystack. Where in the whole of West Berkshire or North Hampshire would one begin?



The alternative method is to look for the scarring where the females have laid their eggs directly into the bark of overhanging riverside vegetation, often willows but many other plants as well. This behaviour, unique among British dragonflies, seems a genius strategy to survive the winter - until one thinks of the eggs hatching in April - and falling into the hungry mouths of all the newly hatched tadpoles, diving beetles and other predators in the waters below. Initially locating the scarring seemed to involve, in view of the lateness of the breeding season, focusing on overhanging branches on the sunlit north banks of ponds and lakes. And quickly finding there was a fine line between finding scarring, and falling in.

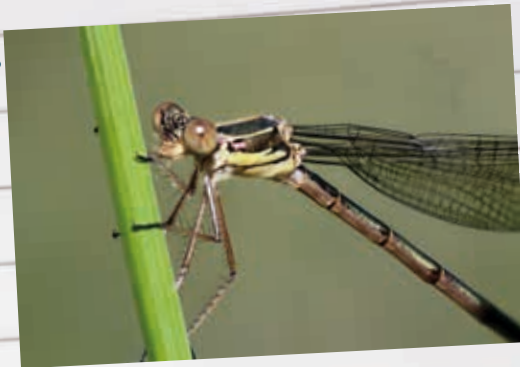
The tide came in three waves. At first, lonely males were found quietly sitting in the willows waiting for females. Occasionally they would reveal themselves with displays or hunting flights that were apparent when one just quietly sat at the side of a pond.

The following year, suddenly they were everywhere. There was scarring in thick agglomerations on branches over ponds and lakes. Occasionally, in what seems a rare sign of dragonfly social behaviour, several pairs would oviposit together as one pair ovipositing seemed to stimulate or attract others.

In the third phase, things became quieter, with



isolated sections of scarring rather than the mass scarring found previously. Perhaps this is how it will be, another quiet addition to the flora. Willow emeralds do not seem very choosy about the habitat. They can be found on unconsidered garden centre ponds through to heathland lakes. The only requirement is the overhanging vegetation. I have even found males on unpromising iron rich orange ponds. The green tide carries on east through Berkshire and one wonders where it will end.



Life and Death by Roger Pendell

I came across the mating pair at the edge of the lake at Felbrigg Hall Norfolk In late July. Although I noticed the third dragonfly on the stem when I was photographing, it wasn't until I was reviewing my images that evening that I saw the spider and realised the drama that was taking place. Truly a case of life and death on one stalk.



If you photograph anything unusual or of interest please let our editor know:
lauren.kennedy@british-dragonflies.org.uk



Pond Creation - a Panama Adventure

by *BDS Ambassador Joel Ashton*

As a wildlife garden designer and installer, many of my projects include creating wildlife ponds. These are of course the best thing you can create in your own back garden to help wildlife, with some very obvious visitors being damselflies and dragonflies.

Back in October 2022, I had the great fortune of visiting Panama, which was part work and part pleasure. I have a friend there who runs an eco-tourism business that employs 15 of the local indigenous tribe, who work as everything from chefs to tour guides. Needless to say, I've since learned they are some of the hardest working people I've ever had the pleasure of working alongside.

Part of the reason for my visit was to help increase the biodiversity within the 200 acres that my friend owns, on an island in the Caribbean, which forms part of the archipelago off the northern coast of Panama, named Isla Bastimentos. Like you, I was questioning how I could possibly improve the biodiversity within a Central American country that borders Costa Rica - a land renowned for centuries for its abundance of life. Surprisingly, it turns out, there were very few natural ponds on the island, yet plenty of dragonflies and even some remarkable frogs called Strawberry poison-dart frogs! After a good discussion with my friend and custodian of this land - Jim, I soon learned there were many reasons for this.



The tropical climate and weather in Panama is so predictable and reliable that unlike our, at times, very bleak winter period, the temperature is almost a constant 26-30 degrees through all 12 months of the year, October being the



coldest, having an average of 26 degrees. This means that even in the "winter" period, it's still plenty warm enough for plants to grow and flower and for butterflies and other insects to breed. Competition for floor space is therefore fierce, and when a tree falls over, it's not long before other plants are maximising the new abundance of light and growing in its place. As you can imagine with a country that receives between 2-2.5m of rainfall per year(!), the plants, shrubs and trees are all adapted to wet conditions, even boggy/swampy ones, meaning any shallow pools that may have formed at the base of a root plate of a fallen tree, are quickly grown over.



I therefore decided it would be great to create a wildlife pond that could be maintained in an existing clearing, to help the Odonata of this unique habitat have a permanent home. So, with the help of 4-5 of the locals, we set to digging an 8m x 4m x 1.2m deep wildlife pond. No mean feat when all you're armed with are spades and pick axes, it's 27 degrees and 90% humidity! The only consolation was the shade cast by the surrounding trees, which towered above us some 80-100 feet into the sky. After 3 long days of hand digging and some VERY squelchy conditions caused by the daily rains, twinned with many months of planning, and a recycled rubber butyl liner that had to be shipped in from North America, the pond was dug! Once lined the next day, we backfilled with the sticky clay subsoil, added some boulders as perching blocks for

our winged friends, and a shallow, rocky/cobbled beach area to allow access for anything that wished to visit this new habitat.

Sadly I had to leave before the rains filled the pond, but Jim has kept me updated regularly and has now planted it with some of the native flora found within the waterways around his land, along with installing a dragonfly perch or two! I hope to return to Isla Bastimentos in 2024 to dig an even bigger pond and create even more habitats for the incredible variety of local wildlife, which includes many migratory bird species. These stop by on their way to/from South America each spring/autumn and will no doubt use this new pond as a source of water to bathe and drink. I am extremely excited to see which species of Odonata have colonised the new pond and hope to update everyone at BDS on my findings.



Field Meetings *Compiled by Mike Averill*

We have listed a small selection of Field Meetings here. This list, along with any additional events, will be added to the 'Events' page of our website. Please check the website throughout the year for the most up to date events information. You can find the latest risk assessments and notes for Field Meeting Leaders on this page too: www.british-dragonflies.org.uk/news-events/our-events/

If you would like to advertise your own event on our website please contact Eleanor Colver: conservation@british-dragonflies.org.uk

<p>Annual Celebration: Dragonfly Week Saturday 1st July to Sunday 9th July 2023.</p>
<p>Monday 27 March 2023 - Wildlife of Llangorse Lake Talk with Green Connections Powys. Leader/Contact: Keith Noble, knoble.kn@btinternet.com Meet: Llangors Community Centre, Llangors, Powys, LD3 7TR, for 7.30 pm start.</p>
<p>Tuesday, 23 May 2023 - Staines, Surrey to look for Clubtails Leader/contact: Sue Webber (HSBG) - hsbg@british-dragonflies.org.uk / 07768 452365 Aims: Looking for Common Clubtail at sites along the Thames where it has been seen in recent years but only photographed once. We may be able to hire canoes or paddle boards to get out on the water. Meet: 10:30 at Staines Lammas Recreation car park, TQ 028 719 / TW18 4UA. Requirements: Boots, lunch. Bring swimming costume if you like a river swim.</p>
<p>Saturday 27th May 2023 - Chartley Moss White-faced Darter Walk Aims: Field trip to visit one of the few schwingmoor bogs and White-faced Darter colonies in England. Walk-in takes around 20 minutes over uneven ground. First walk: 10:30. Second walk: 14:00 Location: Chartley Moss National Nature Reserve, A518, Stafford, Staffordshire. Meeting point: grid reference: SK022289 Cost: £5 per person (pay on day). Requirements: Book space via BDS website. Suitable outdoor clothing and waterproof footwear (preferably wellies).</p>
<p>Thursday, 15 June 2023 - Lakeside Park, Ash Vale, Surrey Leader/contact: Steve Harley (HSBG) / 07860 850829 / hsbg@british-dragonflies.org.uk Aims: Come and explore a new area for our group along the River Blackwater at Lakeside Nature Reserve, the adjacent stretch of the Basingstoke Canal near Ash Lock, and Hollybush. We hope to see Scarce Chaser, which has been present in the area in recent years, along with common early-summer species. Meet: 10:30 at the car park off Lakeside Road at SU 889 518 / GU12 5AD Requirements: Boots and lunch.</p>

Field Meetings continued

Saturday 17 June 2023 - Llangorse Lake, Powys

Leader/Contact: Keith Noble, knoble.kn@btinternet.com

Aims: To walk the Lake Trail from Lakeside to Llangasty and back, (about 3 miles), looking for a range of dragonfly species, which might include Hairy Dragonfly, Variable and Red-eyed Damselflies. Other activities including pond-dipping at Lakeside.

Meet: At Llangorse Lakeside. SO128271. Free parking, cafe, shop and toilets. Activities for everyone, 9.30 to 3.00. Guided walk 10.00 to 2.00, only by booking through Events page at www.bis.org.uk

Requirements: walking shoes/boots, close-focusing binoculars useful.

Saturday 17 June, 10:30-4:30 - Yardley Chase, Northamptonshire

Leader/Contact: Mark Tyrrell, 07305042644, mark.p.tyrrell@gmail.com

Aim: to see the Downy Emerald, and many other early species including Hairy Dragonfly.

Bring lunch, water and good walking boots. No toilet facilities

Saturday 24 June 2023 - NWT Upton Fen, Norfolk

Leader/Contact: Dr Pam Taylor – Norfolk Dragonfly Recorder. To book: pam.taylor@british-dragonflies.org.uk / 01692 670311

Aim: Morning walk (approx. 3 hours) to look for a broad range of dragonfly species, including Norfolk Hawker and Variable Damselfly.

Meet: 10.00am at Upton Fen car park, TG379136. Postcode NR13 6EQ (Low Road)

From Acle, Norwich or Wroxham head towards South Walsham, then follow signs for Pilson Green. Local public transport services are limited. The nearest train station is Acle (3.5 miles).

Requirements: Booking essential – preferably by email. Numbers strictly limited. Wellies or boots, insect repellent. Packed lunch if staying on site (unguided) for the afternoon.

Sunday 2 July 2023 - Devon Group Meeting - Rewilding Coombeshead, West Devon. 10:00 am to 4:00 pm

Leader/Contact: Dave Smallshire (davesmall@btinternet.com; tel. 07853 216239). Prior booking not needed

Aim: To see Devon's best site for Small Red Damselfly at ponds in a large area in the process of rewilding.

Meet/requirements: Meet in parking area at SX389911; WhatThreeWords: ///pampering.noses.gloom; postcode PL16 0JS. Bring a lunch.

Tuesday, 4 July 2023 - Gatwick Airport, W. Sussex

Leader/Contact: Linda Pryke (HSBG member & CDR for Surrey) email: linda@pryke.net

Aims: We will be visiting the North West Zone around Brockley Wood and hope to advise the Gatwick Greenspace Partnership on the potential for further habitat improvements there. We hope to have local expert recorders Rachel and Tom with us.

Meet: 10:30 am - Book with Linda for info on meeting point, parking, etc.

Requirements: Good boots (not wellies), lunch. Booking essential.

Thursday 6 July 2023 - Caerlaverock WWT 1-3pm

Aims: We will walk down the avenues, through the wildflower meadow and out to the River Lochar. Experts from the British Dragonfly Society will be on hand to help as we use nets and ID guides to catch and identify them. There shall also be some pond dipping in the paddock ponds to find some dragonfly larvae.

Requirements: Booking in advance is essential. Please phone the centre on 01387 770200 to book your place on this event.

Saturday 9 July 2023 - Castle Fraser, National trust for Scotland

Aims: Join the Rangers for this celebration of aquatic life! This is a drop-in public event, 11-3pm, with dragonfly arts and crafts on offer for donations. Book a spot on one of the pond dipping sessions. It is aimed at children aged 5-11.

We will look for our rare Northern Damselfly and other colourful insects flying close to the banks of the Flight Pond.

Meet: This event starts and ends at the Flight Pond at Castle Fraser which is a 15 minute walk from the car park. The Flight Pond will be signed. (Please note there is a charge for non NTS members for parking).

Saturday 15 July 2023 - Swinley Forest, Berkshire

Leader/contact: Alan Holmes. Email: hsbg@british-dragonflies.org.uk / 07768 452365

Aims: We hope to find Golden ringed, Keeled Skimmer and possibly Black Darter & Small Red Damselfly.

Meet: Track on R. off Vicarage Road (gated but open). What3Words: commit.widest.fuzz / SU 9021 6354

Requirements: Good boots (not wellies). Lunch (no nearby hostelry).

Sunday 16 July 2023 - Broadland Country Park and Swannington Upgate Common, Norfolk

Leader/ contact: Dave Weaver (david@davidweaver.plus.com, 07933 233106)

Aim: Morning and afternoon walks at two nearby sites with ponds, heathland pools and valley mires supporting a range of species including Scarce Emerald Damselfly and Keeled Skimmer.

Meet: 10.00am within the Country Park main entrance gates at bend off Haveringland Road (TG181175), 300m from

roundabout on B1149 Holt Road, just north of Horsford near Norwich. The site is shown on OS maps as Houghen Plantation.

Requirements: boots, packed lunch. Booking essential, preferably by email - numbers limited to 20.

<p>Saturday 22 July 2023, 12-3:30pm - Dragonfly day at Greenhead Moss Local Nature Reserve Contact: greenspace@northlan.gov.uk Aim: Join the Ranger Service for a walk around the Local Nature Reserve identifying species of damselflies and dragonflies. Meet: Creamery Road Car Park, Stewarton Street, Wishaw, Motherwell, ML2 8AA Requirements: Booking is essential as spaces are limited. Booking will open in June</p>
<p>Saturday 29 July 2023 - Skipwith Common NNR Aim: Joint meeting with Freshwater Habitats Trust to explore the numerous ponds of this heathland nature reserve. Leaders/contact - Keith Gittens, Anne Carter. Email: vc62@yorkshiredragonflies.org.uk / 07903 449509 Meet: 10am at the reserve car park on King Rudding Lane - SE 64432 37373, What3Words – gather.loom.computers Requirements: Bring a packed lunch, strong footwear recommended.</p>
<p>Tuesday 1 August 2023 - Netherwood Country Park Dragonflies Meet: Car park at SE3954604014 (Bradbury Balk Lane) at 11:00 Lead/Contact: Partnership with Sorby Natural History Society and Sheffield Museums Trust. Contact : Alistair.McLean@sheffieldmuseums.org.uk</p>
<p>Saturday 5 August 2023 - Nosterfield Quarry Wetland Restoration Project Aims: An opportunity to explore recently created wetlands and learn more about the project from Simon Warwick, Lower Ure Conservation Trust Director. Leader/Contact - Keith Gittens / vc62@yorkshiredragonflies.org.uk / 07903 449509 Meet 10.30am at the quarry visitor car park - SE 28289 80453, What3Words – headlight.families.essay Requirements: Bring a packed lunch, strong footwear recommended.</p>
<p>Wednesday 9 Aug 2023 - Wildwood (former) Golf Course, Cranleigh, Surrey Leader/contact: Francis Kelly / www.butterfly-conservation.org/in-your-area/surrey-and-sw-london-branch Aims: 18 of the 33 ponds are suitable for viewing odonata, including Willow Emerald & Small Red-eyed Damsels. Joint trip with Butterfly Conservation Surrey Branch. Meet: 11:00, 10 miles SE of Guildford at GU6 8JR, TQ 0481 3606. Requirements: Boots, lunch, close-focusing binoculars. Booking is not required. If bad weather postponement will be posted on BC Surrey branch website.</p>
<p>Thursday, 24 August 2023 - Thursley Common NNR, Surrey Leader/Contact: David Hepper, Hants & Surrey Borders Group, 07768 452365 / hsbg@british-dragonflies.org.uk Aims: To visit the site and try out the replacement boardwalks. Especially good for Black Darter and Keeled Skimmer. Meet: 10:30 am at the Moat car park, Thursley Road, SU 8994 4160 Requirements: Good boots (not wellies). Lunch (no nearby hostelry).</p>
<p>Thursday 31 August 2023 - Hesley Wood Dragonflies Contact: Alistair.McLean@sheffieldmuseums.org.uk Meet: Smithy Wood Road, SK36719578 at 11:00 In partnership with Sorby Natural History Society and Sheffield Museums Trust.</p>



Courses, Training and other events:

10th June 2023 - Damselfly Identification Course, North Meadow NNR & Jenner Hall. Organised by Cricklade Court Leet and taught by Sue Rees Evans.

17th June 2023 - Introduction to Dragonflies and Damselflies, Preston Montford Field Centre, Shropshire. Organised by FSC and taught by Sue Rees Evans.

1st July 2023 - Introduction to Dragonflies and Damselflies, Bishops Wood Worcestershire. Organised by FSC and taught by Sue Rees Evans.

24th September 2023 - Identification of Dragonfly Larvae and Exuviae, Preston Montford Field Centre, Shropshire. Organised by FSC and taught by Sue Rees Evans.

Please see our website for full details and more events/courses: www.british-dragonflies.org.uk/news-events/our-events/



BDS Business Update

Minutes of the 6th CIO BDS AGM held on 19th November 2022 via Zoom

1. Notice for this AGM had been published in Dragonfly News (DN) No 81.
2. Carolyn Cooksey (although absent) agreed to take the minutes via the zoom recording.
3. Minutes of the 5th CIO BDS AGM as published in Dragonfly News 81 were accepted as a true and accurate record via a Zoom poll.
4. Apologies for absence were received from Carolyn Cooksey, Lynda Pryke, and Dave Goddard.
5. One minute's silence was observed for deceased members.
6. Greetings were sent to our patron Sir David Attenborough and Honorary members.
7. Reports from Trustees:

Chair's report:

- a. Brian reported that the pandemic affected operations in 2021 but they returned to near normal in 2022
- b. The five year BDS Strategy has been agreed and is being implemented
- c. Two Dragonfly Hotspots Launched in 2022 – Donations provided information boards for Llangorse Lakes in the Brecon Beacons and Steart Marshes in Somerset
- d. Conservation highlights were that a contract had been gained to restore habitat and create new ponds for Northern Damselfly, and a Volunteer Project in Scotland was underway
- e. Brian also confirmed that a new CRM system for membership and volunteer support would be introduced shortly, and an Operations Officer is to be recruited to take over Membership and Admin Tasks
- f. Brian stated the intention to raise subscriptions from 2024 and introduce the option to pay via Direct Debit

Secretary's report:

- a. Membership has reduced slightly with a current membership of 1819, (represents 1927 people accounting for joint memberships)
- b. Trustees have held four meetings since the last AGM, all using video conferencing
- c. Two Trustees are standing down and four new Trustees are standing for election having attended a recent meeting

Treasurer's report:

- a. Total income of £162,842 and expenditure of £146,971 was seen in 2021-22. One legacy of £10k was received, along with notice of a further legacy, amount unknown.
- b. We also received the second year of funding from the John Ellerman Foundation (£25k) and the Scottish Volunteer Project (£6.5k).
- c. Donations from members towards Hotspots continue and will allow improvements at existing Hotspots.



d. The financial report was approved through a Zoom poll unanimously.

8. Election of trustees:

a. Two Trustees are standing down (Candis Collins and John Winterbottom) and not standing for re-election.

b. Four Trustees are proposed for election, having attended a recent Trustee meeting. Bailey Tait, Josh Younespour, Mike Lehane, and Carmel Edwards were elected via zoom poll unanimously.

9. A change to the BDS constitution to the required quorum for general meetings (changed from “the greater of 3% or forty members to the lesser of 3% or forty members) was proposed and approved through a zoom poll unanimously.

10. The notice of the next AGM will be published in Dragonfly News No 83 and the venue (virtual, physical or blended) will be decided during 2023.

There being no other business the meeting was adjourned.

The Autumn Meeting and Annual General Meeting of the British Dragonfly Society will be held in on:

Saturday 18th November 2023 at Brackenhurst Campus, Nottingham Trent University

How to book and further details will be added to the event page of our website very soon.

Leave a lasting legacy

It is thanks to legacy income that we were able to employ a fundraiser five years ago, and that in turn has led to significant funding that has allowed us to grow our staff team. With the continued impact of climate change our dragonflies and damselflies are at increasing risk with precious wetlands drying up, our work is more important than ever. We have so many ambitious and exciting ideas for future projects, and legacy income provides us with the additional funds to grow and develop our projects.

Please consider leaving something to British Dragonfly Society when you write or update your will. We are so grateful for your continued support.

You may like to use the following wording to include in this legacy:

“I give the sum of £..... to British Dragonfly Society (Registered Charity No. 1168300), Ashcroft, Brington Road, Old Weston, Huntingdon, PE28 5LP for its general purposes.”

A Gift in Memory

Celebrating and commemorating the life of your loved one with a gift in their memory is a fitting tribute that helps to support our work for Dragonflies and Damselflies. We’re always incredibly touched and grateful to receive donations large or small, which will have a lasting impact for generations to come.



BDS RECORDING SCHEME

Please submit records directly through iRecord or send them in bulk to the local County Dragonfly Recorder for upload.

Vice-County	County Recorder	Contact details
ENGLAND AND WALES		
1. West Cornwall (with Scilly)	David Cooper	12 Ashfield Villas, Falmouth, Cornwall, TR11 2EU 01326 311337. cestmaplace@outlook.com
2. East Cornwall		
3. South Devon	Dave Smallshire	8 Twindle Beer, Chudleigh, Newton Abbot, TQ13 0JP 01626 853393. davesmall@btinternet.com
4. North Devon		
5. South Somerset	Chris Iles	Arborfield, Holcombe Hill, Holcombe, Radstock, Somerset BA3 5DN 01761 239092. kifill22@hotmail.com
6. North Somerset		
7. North Wiltshire	Rosie Ray	07970 875155. rosiehams@yahoo.co.uk
8. South Wiltshire		
9. Dorset	Andrew Brown	Ground floor flat, 15 Lytton Road, Bournemouth, BH1 4SH 07891 573267. brown_a_r@yahoo.co.uk Website: www.dorsetdragonflies.org.uk / Facebook: 'Dorset Dragonflies'
10. Isle of Wight	Jim Baldwin *	Alma, St. Johns Road, Wroxall, Ventnor, Isle of Wight, PO38 3EH * 01983 853580 *. wightdragonflies@gmail.com
11. South Hampshire	Phil Young *	Medstead, nr. Alton, Hampshire. ygphil21@gmail.com
12. North Hampshire		
13. West Sussex	Simon Linington *	Simon Linington - 01273 400419. liningtons@gmail.com Website: sussexdragonflies.org.uk
14. East Sussex		
15. East Kent	Marc Heath	07834 280205. heathym007@aol.com
16. West Kent		
17. Surrey ¹	Linda Pryke	07931 873745. linda@pryke.net
18. South Essex ¹	Neil Phillips	neil_fal@yahoo.com / @uk_wildlife
19. North Essex		
20. Hertfordshire ¹	Roy Woodward	62c High Street, Cheshunt, Hertfordshire EN8 0AH 07855 567332. roykwoodward@outlook.com *
21. Middlesex ¹	Linda Pryke	<i>See 17. Surrey</i>
22. Berkshire ¹	Des Sussex	14 School Hill, Sandhurst, Berkshire GU47 8LD 01344 772000 / 07958 080057. dsussex14@outlook.com
23. Oxfordshire ¹	Stephen Burch	stephen_burchemail@yahoo.co.uk Website: www.stephenburch.com
24. Buckinghamshire	Alan Nelson	74 Holland Way, Newport Pagnell, Milton Keynes, Bucks, MK16 0LW bucksdragonflies@googlemail.com
25. East Suffolk	Adrian Parr	10 Orchard Way, Barrow, Bury St Edmunds, Suffolk, IP29 5BX 01284 810 465. adrian.parr@btinternet.com
26. West Suffolk		
27. East Norfolk	Pam Taylor	Decoy Farm, Decoy Rd, Potter Heigham, Norfolk, NR29 5LX 01692 670 311. pam.taylor@british-dragonflies.org.uk
28. West Norfolk		
29. Cambridgeshire	Val Perrin	valperrin@aol.com
30. Bedfordshire	Rory Morrissey	25 Alwins Field, Leighton Buzzard, LU7 2UF 01525 372477. dragonflies@bnhs.org.uk
31. Huntingdonshire	Val Perrin	<i>See VC 29, above</i>
32. Northamptonshire	Mark Tyrrell	8 Warwick Close, Raunds, Wellingborough, Northants, NN9 6JH 01933 389 748. mark.p.tyrrell@ntlworld.com Website: www.northantsdragonflies.blogspot.co.uk
33. E. Gloucestershire	Richard Mundy	glos.dragonflies@gmail.com
34. W. Gloucestershire		
35. Monmouthshire ¹	Steve Preddy	07989 870508. steve.preddy@me.com
36. Herefordshire	Chris Harris	07779 339887. chris@cjhgraphics.co.uk
37. Worcestershire	Mike Averill	49 James Road, Kidderminster, Worcs, DY10 2TR 01562 638571. mike.averill@blueyonder.co.uk
38. Warwickshire	Mick Schilling	mick.schilling@outlook.com / www.warwickshire-dragonflies.org.uk
39. Staffordshire	Dave Jackson	07940 826671. jacksongrus@talktalk.net
40. Shropshire	Sue Rees Evans	Tel: 01743 354507. suereesevans75@gmail.com Website: shropshiredragonflies.co.uk
41. Glamorganshire ¹	Mike Powell	87 Coed Glas Road, Llanishen, Cardiff, CF14 5EL 029 2076 2182. Mike.powell2011@btinternet.com
42. Breconshire ¹	Keith Noble	25 Belle Vue Gardens, Brecon, LD3 7NY 01874 620133. knoble.kn@btinternet.com



List of BDS County Dragonfly Recorders, last updated 31 January 2023

43. Radnorshire ¹	Bob Dennison	Tyddyn Clyd, Crossgates, Llandrindod Wells, Powys, LD1 6RP 01597 850301.
44. Carmarthenshire ¹	Stephen Coker	Mountain Grove, Clarboston Road, Haverfordwest, Pembrokeshire, SA63 4SG 01437 563 566. stephen.coker@live.co.uk
45. Pembrokeshire ¹		
46. Cardiganshire ¹	Lin Gander	Penwalk Llechryd, Cardigan Ceredigion, SA43 2PS 01239 682405. lingander@strandings.com
47. Montgomeryshire ¹	Anne Coker	Mountain Grove, Clarboston Road, Haverfordwest, Pembrokeshire, SA63 4SG 01437 563 566. stephen.coker@live.co.uk
48. Merionethshire ¹ to 52. Anglesey ¹	Allan Brandon	Bryn Heilyn, Rowen, Conwy LL32 8YT 01492 651 066. allanrowenconwy@sky.com Website: www.cofnod.org.uk/news (and search 'dragonfly newsletter' – issue 100 is year 2019)
53. South Lincolnshire	Dean Roizer	Dykeside, 112 Starlode Drove, West Pinchbeck, PE11 3TD 07806 822036. dean@roizer.com
54. North Lincolnshire	Fiona McKenna	57 Park Avenue, Washingborough, Lincolnshire, LN4 1DB 07854 114068. fiona.mckenna@rocketmail.com
55. Leicestershire (with Rutland)	Ian Merrill	125 Church Lane, Whitwick, Coalville, Leicestershire, LE67 5DP 01530 815886. i.merrill@btopenworld.com
56. Nottinghamshire	Chris Bradbury	24 New England Way, Pleasley, Mansfield, Nottinghamshire, NG19 7SL 01623 237884. mail@chrisbradbury.com
57. Derbyshire		
58. Cheshire & Wirral	John Roberts	01829 733140 / 07775 706838. cheshiredragonflies@outlook.com
59. South Lancashire	Steve White	0151 707 2744 (daytime). stevewhite102@btinternet.com
60. West Lancashire		
61. S.E. Yorkshire	Martin Roberts	48 Stratford Way, Huntington, York YO32 9YW 01904 761918. vc61@yorkshiredragonflies.org.uk Fb: 'yorkshiredragonflies'
62. N.E. Yorkshire	Keith Gittens	Sunnybank, Low Street, Hushwaite. York. YO61 4QA. 01347 868606. brilliantemerald@btinternet.com
63. S.W. Yorkshire	Alistair McLean	Museums Sheffield, Weston Park, Western Bank, Sheffield, S10 2TP 0114 278 2648. alistair.mclean@museums-sheffield.org.uk
64. Mid-west Yorkshire	Simon Joseph	11 Sandholme Villas, Earby, Yorkshire, BB18 6NF 07972 054098. simonjoseph1967@sky.com
65. N.W. Yorkshire	Keith Gittens	As VC62
66. County Durham	Michael Coates	07715 160644. michaelbds@zohomail.com
67. S. Northumberland	Michael Gardner	11 East Law, Consett, County Durham, DH8 0QJ 07340 456809. vc67dragonflies@gmail.com
68. N. Northumberland		
69. Westmorland	David Clarke	Burnfoot, Cumwhitton, Brampton, Cumbria, CA8 9EX 01228 560117. davidclarke6970@gmail.com
70. Cumberland		
71. Isle of Man	Pete Hadfield	07624 471794. iomodon1@gmail.com
SCOTLAND		
72. Dumfriesshire to 112. Shetland, except:	Pat Batty	Kirnan Farm, Kilmichael Glen, Lochgilphead, Argyll, PA31 8QL 01546 605 316. dragonfly.batty@gmail.com
95. Moray	Stephen Corcoran	07957 696971. stephenjcorcoran@hotmail.com
111. Orkney	Graeme Walker	azurehawker@aol.com
113. Channel Isles	Jersey Biodiversity C.	01534 633393. jbc@societe-jersiaise.org / jerseybiodiversitycentre.org.je
	Guernsey BRC	01481 715799. gsybiorecords@gmail.com * / www.biologicalrecordscentre.gov.gg
	Alderney WT	admin@alderneywildlife.org / www.alderneywildlife.org
NORTHERN IRELAND and EIRE	Damian McFerran	National Museums Northern Ireland, Cultra, Holywood, Co. Down, BT18 0EU Fb: 'Dragonfly Ireland' / Web: www.nmni.com/CEDaR/CEDaR-submitting-records.aspx
Migrant Dragonfly Project	Adrian Parr	10 Orchard Way, Barrow, Bury St Edmunds, Suffolk, IP29 5BX 01284 810 465. adrian.parr@btinternet.com
RECORDS OFFICER	David Hepper	12 Three Stiles Road, Farnham, Surrey, GU9 7DE 01252 721053. records@british-dragonflies.org.uk

¹ Don't worry about county boundary changes! Once records have a grid reference they will be seen by the correct CDR for verification.

* Indicates that the CDR or the asterisked details have been updated recently.

! Do not distribute this list outside BDS. Some details above are privileged. Public info is on the BDS website on page About > CDRs.

Amendments or corrections? Please contact the BDS Records Officer, David Hepper: records@british-dragonflies.org.uk



Checklist of the Damselflies & Dragonflies of Britain & Ireland

Last Revision: 11/8/20. The sequence and nomenclature follow Schorr and Paulson, July 2013:

<http://www.pugetsound.edu/academics/academic-resources/slater-museum/biodiversity-resources/dragonflies/world-odonata-list>

Table 1. Category A: resident and/or regular migrant species recorded since 2000

This category comprises species with well-established breeding populations and migrant species that have been recorded regularly since 2000, the latter often attempting to establish temporary breeding populations.

ZYGOPTERA	Damselflies	ANISOPTERA (cont'd)	Dragonflies (cont'd)
Lestidae	Emerald Damselflies	<i>Anax ephippiger</i>	Vagrant Emperor
<i>Chalcolestes viridis</i>	Willow Emerald Damselfly	<i>Anax imperator</i>	Emperor Dragonfly
<i>Lestes barbarus</i>	Southern Emerald Damselfly	<i>Anax parthenope</i>	Lesser Emperor
<i>Lestes dryas</i>	Scarce Emerald Damselfly	<i>Brachytron pratense</i>	Hairy Dragonfly
<i>Lestes sponsa</i>	Emerald Damselfly	Gomphidae	
Calopterygidae		<i>Gomphus vulgatissimus</i>	Common Clubtail
<i>Calopteryx splendens</i>	Banded Demoiselle	Cordulegastridae	
<i>Calopteryx virgo</i>	Beautiful Demoiselle	<i>Cordulegaster boltonii</i>	Golden-ringed Dragonfly
Platycnemididae		Corduliidae	Emeralds
<i>Platycnemis pennipes</i>	White-legged Damselfly	<i>Cordulia aenea</i>	Downy Emerald
Coenagrionidae		<i>Somatochlora arctica</i>	Northern Emerald
<i>Ceriagrion tenellum</i>	Small Red Damselfly	<i>Somatochlora metallica</i>	Brilliant Emerald
<i>Coenagrion hastulatum</i>	Northern Damselfly	Libellulidae	Darters, Chasers, Skimmers
<i>Coenagrion lunulatum</i>	Irish Damselfly	<i>Leucorrhinia dubia</i>	White-faced Darter
<i>Coenagrion mercuriale</i>	Southern Damselfly	<i>Libellula depressa</i>	Broad-bodied Chaser
<i>Coenagrion puella</i>	Azure Damselfly	<i>Libellula fulva</i>	Scarce Chaser
<i>Coenagrion pulchellum</i>	Variable Damselfly	<i>Libellula quadrimaculata</i>	Four-spotted Chaser
<i>Coenagrion scitulum</i>	Dainty Damselfly	<i>Orthetrum cancellatum</i>	Black-tailed Skimmer
<i>Enallagma cyathigerum</i>	Common Blue Damselfly	<i>Orthetrum coerulescens</i>	Keeled Skimmer
<i>Erythromma najas</i>	Red-eyed Damselfly	<i>Sympetrum danae</i>	Black Darter
<i>Erythromma viridulum</i>	Small Red-eyed Damselfly	<i>Sympetrum fonscolombii</i>	Red-veined Darter
<i>Ischnura elegans</i>	Blue-tailed Damselfly	<i>Sympetrum sanguineum</i>	Ruddy Darter
<i>Ischnura pumilio</i>	Scarce Blue-tailed Damselfly	<i>Sympetrum striolatum</i> *	Common Darter
<i>Pyrrhosoma nymphula</i>	Large Red Damselfly		
ANISOPTERA	Dragonflies		
Aeshnidae	Hawkers		
<i>Aeshna affinis</i>	Southern Migrant Hawker		
<i>Aeshna caerulea</i>	Azure Hawker		
<i>Aeshna cyanea</i>	Southern Hawker		
<i>Aeshna grandis</i>	Brown Hawker		
<i>Aeshna isoceles</i>	Norfolk Hawker		
<i>Aeshna juncea</i>	Common Hawker		
<i>Aeshna mixta</i>	Migrant Hawker		

* - includes dark specimens in the north-west, formerly treated as a separate species *Sympetrum nigrescens* **Highland Darter**

Table 2. Category B: vagrant species

Since 1998 records of these species have been assessed by the Odonata Rarities Committee.

ZYGOPTERA	Damselflies	ANISOPTERA (cont'd)	Dragonflies (cont'd)
Lestidae	Emerald Damselflies		
<i>Sympecma fusca</i>	Winter Damselfly	Libellulidae	Darters, Chasers, Skimmers
ANISOPTERA	Dragonflies	<i>Leucorrhinia pectoralis</i>	Large White-faced Darter
Aeshnidae	Hawkers	<i>Crocothemis erythraea</i> †	Scarlet Darter
<i>Anax junius</i>	Green Darner	<i>Pantala flavescens</i>	Wandering Glider
Gomphidae		<i>Sympetrum flaveolum</i> **	Yellow-winged Darter
<i>Stylurus flavipes</i>	River (Yellow-legged) Clubtail	<i>Sympetrum pedemontanum</i>	Banded Darter
Corduliidae		<i>Sympetrum vulgatum</i>	Vagrant Darter
<i>Somatochlora flavomaculata</i>	Yellow-spotted Emerald		

** - has bred. † - has bred in the Channel Islands.



Table 3. Category C: former breeding species now locally extinct in the UK

Any further records of these species will be assessed by the Odonata Rarities Committee.

ZYGOPTERA	Damselflies	ANISOPTERA	Dragonflies
Coenagrionidae <i>Coenagrion armatum</i>	Norfolk Damselfly	Family uncertain <i>Oxygastra curtisii</i>	Emeralds Orange-spotted Emerald

Table 4. Category D: species recorded only in the Channel Islands

ANISOPTERA	Dragonflies
<i>Orthetrum brunneum</i> <i>Sympetrum meridionale</i>	Southern Skimmer Southern Darter

Table 5. Category E: exotic species introduced accidentally

These records have come principally from aquatic nurseries (Parr, 2000).

ZYGOPTERA	Damselflies	ANISOPTERA	Dragonflies
<i>Argia fumipennis</i> <i>Ceriagrion</i> <i>cerinorubellum</i> <i>Enallagma signatum</i> <i>Ischnura posita</i> <i>Ischnura senegalensis</i>	Variable Dancer Painted Waxtail Orange Bluet Fragile Forktail Marsh Bluetail	<i>Anax gibbosulus</i> <i>Anax guttatus</i> <i>Crocothemis servilia</i> <i>Erythemis simplicicollis</i> <i>Rhodothemis rufa</i> <i>Tramea transmarina</i> <i>euryle</i> <i>Urothemis bisignata</i>	Green Emperor Lesser Green Emperor Oriental Scarlet Eastern Pondhawk Spine-legged Redbolt Ocean Glider

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Les Larves de Libellules de Die Libellenlarven von Paul-André Robert

Paul-André Robert and his life's work on dragonfly larvae

Compiled by
Christophe Brochard
Language: Bilingual in
French and German

Paul-André Robert (1901-1977) was a Swiss artist and naturalist. In Europe Robert is best known for his book *Les Libellules* ('Dragonflies'), which appeared in 1958. This book, which is bilingual (French and German), is a unique combination of art and science. It is an invaluable resource for entomology professionals and a significant collector's item for admirers of high-quality entomological books. It is also a stunning piece of artwork that will please anyone with an interest in natural history, realistic art and illustration.

As an honorary tribute to Robert, an international team of dragonfly experts added an extensive introduction to the book.



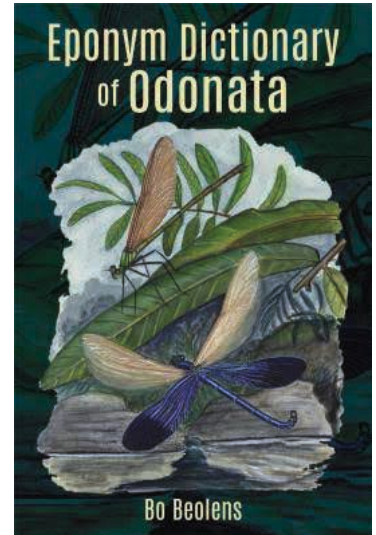
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The Eponym Dictionary of Odonata

by Bo Beolens

The Eponym Dictionary of Odonata is a comprehensive listing of all people after whom damselflies and dragonflies have been named in scientific or common names. Each entry provides details of the species and a brief biography of the person. It is also cross-referenced

so that the relationships between scientific authors, entomologists and others can be followed.



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