Skimmer

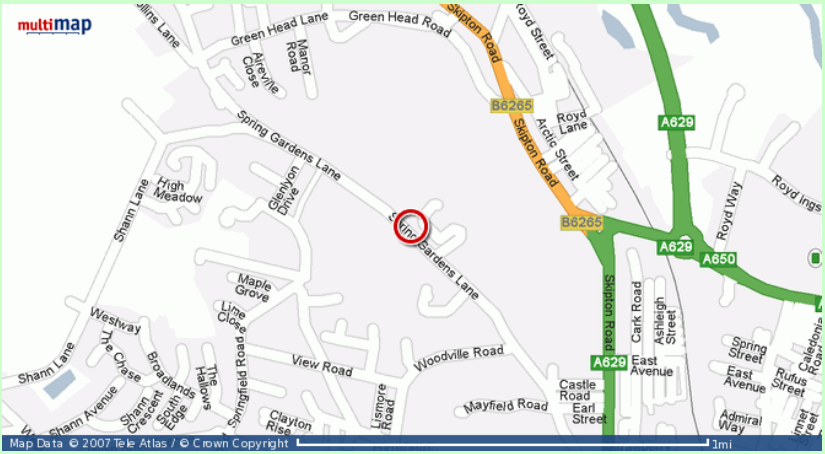
Yorkshire Branch Magazine 2009

www.yorkshiredragonflies.org.uk

Annual General Meeting

3rd October 2009, at Cliffe Castle, Keighley

Cliffe Castle Museum, Spring Gardens Lane, Keighley, West Yorkshire, BD20 6LH
Telephone: 01535 618231
AGM at 2pm (£1 for refreshments)



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Cover Photo: Broad-bodied Chaser at Reighton Ponds. Paul Ashton.

Notes from the Chair

2008…what a year…surely 2009's weather can't be any worse…hang on, didn't I say that about 2007 last year. Seriously though, once again we've got some great trips lined up, Variable Damselflies and Hairy Dragonflies at Broomfleet Washlands, Golden-ringed Dragonflies at Timble Ings and an exciting day out at Castle Howard Arboretum, where our VC62 Recorder, Keith Gittens, has been doing some sterling work in promoting odonata to a wider audience. I'd also like to take this opportunity to thank Paul Dinsdale for continuing in his stand-in role as Branch Secretary, Paul Ashton for becoming our new Skimmer editor and Steve Warrillow, whose two year stint as Branch Treasurer comes to an end in October. I'd also like to welcome Emma Marshall, our Treasurer-in-waiting. Her position is to be ratified at our AGM in October…where we will be once again utilising the facilities at Cliffe Castle in Keighley.

As you know, my two year leadership as Branch Chair is also due to finish in October but, as yet, no-one has stepped forward and offered to take the helm. As some of you are aware, dragonflies are not my only passion; butterflies, moths and beetles are all vying for my attention and I would therefore like to spend a bit more time pursuing these Orders…therefore I'm making this appeal for someone to step into the breach and become the new Branch Chair. It's not too time consuming and really just like being the cement in a wall, joining all the bricks together. So if you feel you can help, either by taking over from Paul as Secretary or the Chairman's duties from myself, please contact me on 01535 678334 or pop along to one of the trips we've organised and I'll let you know what it all entails.

On the subject of trips, I'm going to Cheshire in search of Common Club-tail and Downy Emerald dragonflies on either the Saturday or Sunday on the first weekend in June (depending on the weather, of course) so if you want to come along please let me know and don't forget that if you need a lift to any of our events, please don't hesitate to contact me and I'll arrange for someone to pick you up.

Happy dragonflying
Tom Hubball

Million Ponds Project launched on 19th February 2009

- One hundred years ago there were over a million ponds in Britain; in fields and meadows, and across mountains and moorlands. Now, half of those ponds have gone and of the few that remain, a shockingly small number (8 %) are in good condition.
- The Million Ponds Project is a national initiative to reverse this long-term decline and bring back clean, unpolluted, wildlife-rich ponds to the landscape.
- The project is backed by the UK's largest landowners and marks a step change in how we protect our freshwaters.
- The Million Ponds Project will start by making 5000 ponds in the next four years, with a focus on 1000 sites that will benefit more than 80 species listed in the UK Biodiversity Action Plan, that use or live in ponds. These include the spangled water beetle, tassel stonewort and the pondweed leafhopper. The project will provide a network of clean water havens for these and other endangered freshwater plants and animals that depend on unpolluted water.

Pond Conservation
http://www.pondconservation.org.uk/News/latestnews/millionpondsprojectlaunch.htm

Minutes of the Indoor Meeting - 14th February 2009

Yorkshire Museum, Museum Gardens, York YO1 7FR.

Tom Hubball/Paul Dinsdale

PRESENT: Tom Hubball (in the chair), Chris Abbott, Paul Ashton, Helen and Paul Dinsdale, Keith Gittens, Jason Gregory, Bill Hall, Emma Marshall, Peter Mill, Richard Shillaker, Steve Warrillow

1 Apologies for Absence

Ian and Jenn Atkin, Carol Band, Laura and Hugh Coventry, Michael Densley, Graham Featherstone, Christine and Howard Frost, Peter Larner, Ken and Pat Limb, Jill & Brian Lucas, Sarah Mumford, Jill Warwick, Lee and Jax Westmoreland, Michael Wilcox.

2 Minutes of AGM 2008 and Matters Arising

Accepted as a correct record.

It was noted that volunteers were required for the positions of secretary, chairman, and treasurer (the latter two from October 2009 when the current post holders would have completed their 2-year terms). Current incumbents were willing to continue for the time being until replacements come forward. TH emphasised that he would like to step down as chair and hoped that another Branch member would like to take on this important but relatively easy role. He would remain as VC63 and VC65 recorder. Emma Marshall volunteered to take over from Steve Warrillow as treasurer at the AGM in October. Paul Ashton agreed to take over responsibility for producing Skimmer with immediate effect.

3 Membership Report

PD reported that the branch currently had 21 life members, 27 individual members and 9 family members. There had been 5 new members (4 individual + 1 family) recruited since the AGM, and 6 memberships for 2009 were currently unpaid. All inactive life members had been contacted by post and asked to confirm that they were still at the addresses recorded and wanted to remain in membership. Currently 8 had not replied. It was agreed to remove these from the register until such time as any confirmation of continued interest was received.

4 Treasurer's Report

SW reported that the balance of the Branch's account stood at £499.34. In view of likely future expenses, e.g. Skimmer production, publicity material and Yorkshire Atlas, it was felt that these funds would be put to good use in the medium term. Ideas for new promotional materials from members would be welcome. Members should contact TH on 01535 678334 to discuss ideas.

5 Skimmer Articles

TH reported that much of the content was already sourced. However, he would like to have seen more articles from a greater number of members and noted that even a few words about a particular sighting or behavior may be of interest to other members, so please do try to jot something down this year and send it to TH or PA.

6 Records

The annual meeting of the Dragonfly Recording Network would be held in the West Midlands on 28 March. TH could offer a lift to anyone wanting to go (departing quite early). Collaboration with the Yorkshire Naturalists Union to consolidate dragonfly records by both organisations was under discussion. TH reported that the number of people submitting records seemed to be falling.

7 Field Trips 2009

The following trips were scheduled:

Monday 25 May 2009	Tophill Low (Yorkshire Water) open day (Paul Ashton)*
Sunday, 31 May 2009	Broomfleet and North Cave Wetlands (Paul Ashton)*
Sunday 28 June 2009	Spurn (for Red-veined Darter) (Steve Warrillow)
Saturday 11 July 2009	Otley Wetlands (jointly with Wharfedale Naturalists)
Saturday 11 July 2009	Arboretum Gardens at Castle Howard (Keith Gittens)
Saturday 25 July 2009	Timble Ings (for Golden-ringed Dragonfly)
Sunday 9 August 2009	Strensall and Askham Bog

* During National Dragonfly Week

All to be led by TH, except where indicated. Full, finalised details would be published in Skimmer and on the website. Trips would also be publicised by the BDS.
Other possibilities under consideration were Barlow Common (Selby) and an excursion being planned by TH to Cheshire on 1st weekend in June for Club-tailed Dragonfly and Downy Emerald.
TH asked all attendees, especially leaders, to bear in mind the branch's health and safety policies.

Other Events

Saturday, 7 March	Leeds Philosophical and Literary Society, Science Fair in the Leeds City Museum.
Saturday 4 July	Royal Entomological Society, Insect Festival at York Museum Gardens.

The branch's stand would be present at both events, the latter jointly with the national society. Volunteers to assist were invited.

8 Yorkshire Wildlife Trust – River Hull Project

Richard Shillaker reported that YWT was interested in mounting a project covering the whole of the River Hull valley, to enhance the wetlands and promote public awareness, including a survey of dragonfly sites. It was hoped that it might be possible to arrange an event to assist their volunteers in dragonfly ID, or to provide information to the public. RS would continue to liaise.

9 Website

PA reported that the locations page was being expanded (particularly for VC61 and VC62) to include more information on habitat, species and grid references. Google Maps were being introduced. Some members felt that other Internet mapping resources such as Multimap were superior but PA pointed out that the Google maps show both a satellite view and conventional map of the selected site. Members were invited to submit ideas for website development. PA also reported that site usage was increasing. It was also noted that several new members had joined in 2008/09 as a result of seeing the site.

TH reported that a dragonfly information board would shortly be installed by Colin Slator at Thruscross reservoir, which included a reference to the branch website.

10 Talks and Presentations

Nothing was currently planned. KG reported that he had missed the recent AGM so that he could man the branch stand at the North Yorkshire Environment Day. TH noted that a countryside ranger at Wintersett reservoir had requested a talk/ID session at some point in the future. Anyone interested in helping out with this request should contact Andrew McGuinness on 01924 303989

11 Yorkshire Atlas

This was tentatively scheduled for publication in 2015. Sources of funding were being investigated and members' help and ideas were requested.

12 BDS News

Peter Mill reported that sites for a permanent base for the BDS were under consideration; areas around Peterborough seemed to offer ideal accessibility.

Articles from members based in the north of England would be welcome for Dragonfly News; general articles would be welcome – they need not be 'scholarly'.

TH reported that an extremely rare vagrant Winter Damselfly had been reported from Neath (Wales) on 21 December 2008. This had been found by a member of the public who thought it was unusual and notified the BDS. It was photographed and identified by Steve Coker and Mike Powell (VC41 dragonfly recorder) and verified as a first for mainland Britain by Adrian Parr.

13 Date of Next Meeting and AGM

Saturday 3 October 2009 at 2 pm at Cliffe Castle Museum, Keighley BD20 6LH.

14 AOB

Rodley Nature Reserve

PM reported that a substantial amount of work on the ponds at Rodley Nature Reserve had been undertaken during 2008 but completion had been hampered by the bad weather. The outcome in terms of the dragonfly populations would be eagerly awaited.

East Riding Biodiversity Partnership

PA reported that he had been approached to participate in the East Riding Biodiversity Partnership and would be doing so on behalf of the BDS after discussing it with Kat Parkes, the BDS conservation officer.

Castle Howard Arboretum

KG reported that a dragonfly information board would be installed there shortly.

Radio Publicity

SW reported that he had been working with Radio 119, run by people with learning disabilities as part of Bradford Community Broadcasting. Content from the branch would be welcome.

In closing the meeting the chairman thanked Pip Strang and the Yorkshire Museum for very kindly providing the venue, refreshments and tour of the museum's entomology collections prior to the meeting.

2009 Branch Field Trips

Note: Two field trips have been arranged for Saturday 11th July.
Check the website for the latest status and updates on planned field trips.

National Dragonfly Week – 23rd to 31st May.

BH Monday 25th May 2009

Tophill Low at 10:00am. Grid Ref: TA073486

From the A164 Beverley to Driffield Road. Leave the A164 at Watton, sign posted Tophill Low Pumping Station and follow the brown tourist signs along unclassified road for 6.5km/4 miles. Turn right at the main gates and follow the road round to the car park. This visit coincides with the Tophill Low Open Day where there will be several events taking place during the day including dragonfly walks to the north and south end of the site, bird walks, pond dipping sessions and talks on the management of the reserve. The Yorkshire wildlife trust will be attending, along with the RSPB Phoenix group and hopefully several other organisations. The open day represents an excellent opportunity to sell the Yorkshire Branch and the British Dragonfly Society to a wider audience.

Species on display at this time of year should include Blue-tailed, Common Blue, Azure and Large Red Damselfly. There is the possibility of finding immature Red-eyed Damselflies in the grasses around 'O' reservoir, along with Four-spotted Chasers.

Contact Paul Ashton on 07984 980583 or via email at vc61@erdragonflies.co.uk.

Sunday 31st May 2009

Broomfleet Washlands and North Cave Wetlands at 10am. Grid Ref: SE865281

Leave the M62 at the North Cave junction. Take the B1230 to Newport. Before reaching Newport take the left turning to Broomfleet along Wallingfen Lane. At the end of the road turn right on to Common Road. Continue straight on, the road eventually turns in to a deeply rutted track which is passable with care, car park can be found before the track rises towards the railway. Alternatively turn left off Common Road on to Carr Lane. At the end of the road turn right on to Main Street. Take the right hand bend and follow the road until reaching the bridge over the Market Weighton Canal, don't cross the bridge, the road is wide enough to safely park. Walk north towards the railway where there is an underpass on to the washlands complex. Meet at the railway underpass adjacent to the canal at 10:00am. Time permitting, we will visit North Cave Wetlands during the afternoon which can be found 1 mile north of the M62, clearly signposted as you approach North Cave village. Grid Ref: SE886328

Key species for this site are Variable Damselfly and Hairy Dragonfly.

Contact Paul Ashton on 07984 980583 or via email at vc61@erdragonflies.co.uk

Sunday 28th June 2009

Spurn Point NNR at 10:30am. Grid Ref: TA416158

From the A1033 Withernsea road take the right fork in Patrington onto the B1445 to Easington. From here, unclassified roads lead to Kilnsea and then Spurn.

Meet at the Bluebell café car park.

Target species for this trip will be Red-veined Darter.

Contact Steve Warrillow on 07896 097269 or via email at whirlygigwarrillow@googlemail.com

Saturday 11th July 2009

Otley Wetland NR at 10am. Grid Ref: SE200455

The entrance to Otley Wetland Nature Reserve is via the old cattle auction mart, just over the river Wharfe, almost opposite the turning to Farnley.

The gate will be locked promptly at 10am as the site is private. Anyone turning up late will have to park on the surrounding streets and make their way on to the site by foot.

This is a fabulous way to explore a private nature reserve, which usually has permit only access. We will be joined by members of Wharfedale Naturalists and lead around the Reserve by their dragonfly Recorder.

Contact Tom Hubball on 01535 678334 or via email at vc63dragonfly@blueyonder.co.uk

Saturday 11th July 2009

Kew at Castle Howard Arboretum at 10am. Grid Ref: SE706697

BDS group walk 10am to 2pm, to explore a series of ponds and small lakes within the Arboretum.

Arboretum Dragonfly Walk 2.30pm / Talk 4pm. One of a series of events organised by the Arboretum Trust open to the public.

Entrance is free to BDS members coming for the morning walk. Members coming specifically for the afternoon walk/talk there is a £4 charge.

The Arboretum is opposite the entrance to Castle Howard.

Meet in the arboretum car park.

Contact Keith Gittens on 07968 840623 or via email at keith@brilliantemerald.wanadoo.co.uk

Saturday 25th July 2009

Timble Ings at 10am. Grid Ref: SE165529

Another chance to see how the work undertaken by Yorkshire Water and others has improved this wonderful site for dragonflies.

Target species will be Golden-ringed Dragonfly

Meet at Swinsty Reservoir Car Park Grid Ref: SE187538, off A59 Harrogate-Skipton road, where we will car share to Timble Ings as parking is limited there.

Contact Tom Hubball on 01535 678334 or via email at vc63dragonfly@blueyonder.co.uk

Sunday 9th August 2009

Strensall Common at 10am. Grid Ref: SE648611

A walk across the MOD ranges, to study a series of ponds, access to some areas may be restricted.

Meet at the small parking area near the cattle grid at 10am.

Contact Keith Gittens on 07968 840623 or via email at keith@brilliantemerald.wanadoo.co.uk

Contacts for the **Yorkshire Branch**

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Secretary: **Paul Dinsdale H: 01535 653041 E: courant@blueyonder.co.uk**

Treasurer: **Steve Warrillow M: 07731 041558 E: whirlygigwarrillow@googlemail.com**

Website and Skimmer Editor: **Paul Ashton H: 01430 803005 E: vc61@erdragonflies.co.uk**

Field Trips – 2008 Summary

Tom Hubball

Sunday 1st June 2008 River Colne Project

Two Yorkshire Branch members and six River Colne Project volunteers turned up at the small bridge over the River Colne at West Slaithwaite. Torrential rain ruled out any possibility of a walk but I managed to do the identification talk from the back of my minibus. After the volunteers had left, the weather improved slightly and one of the remaining Branch members and myself had a walk along the Narrow Canal but due to the temperature, no odonata species could be found.

Note: Jill Lucas handed me a deceased non-UK Ischnura sp. for identification. It had been passed to Jill by her local garden centre. I photographed it and emailed the photos to Dave Smallshire and Pam Taylor but they were unable to positively identify the species either.

Sunday 8th June 2008 Toad Holes Beck and Bees Urban Nature Reserve

Four Yorkshire Branch members turned up to Toad Holes Beck on a rather cool day. Only a few Blue-tailed and Large Red damselflies were in evidence. We then moved onto the Bees Urban Nature Reserve, near Bradford University, which as it turned out, was a bit tricky to find. The Branch Treasurer Steve Warrillow, who had missed the earlier visit to Toad Holes Beck, turned up and directed us to the small Reserve. The two ponds at the Reserve were very shaded by tall trees on three sides and overgrown with various submergent and emergent vegetation, resulting in disappointing numbers of dragonflies and damselflies which could have been expected at such a site.

Saturday 14th June 2008 Chartley Moss

This Branch 'away day' was cancelled as it appeared that no-one wanted to go. This, I suspect, was partly due to poor weather being forecast (this turned out to be correct) and partly due to the rise in petrol prices. Unfortunately it meant that Tim Beynon and myself dipped twice as the following week's 'official' BDS trip was cancelled too due a storm front coming from the south west.

Saturday 28th June 2008 Potteric Carr

Seven Yorkshire Branch members and three Reserve visitors were lead around the Reserve by John Hancox, one of the Wardens there, to survey a newly acquired part of the Reserve. We visited three areas in total but two of them, including the 'newest' part which had only just been landscaped, did not produce many sightings except for 100+ Blue-tailed damselflies and the odd Azure and Common Blue damselfly. There were also a lone Common Dater and Black-tailed Skimmer. The older more established part was better, as it was in a sheltered corner surrounded by trees on two sides. Here we found 15 Black-tailed Skimmers, 18 Four-spotted Chasers, a lone Broad-bodied Chaser, 3 Emperors, 100+ Blue-tailed, 16 Azure and 63 Common Blue damselflies as well as 3 Common Darters. We also did a spot of pond-dipping and found a rather large water beetle larva which promptly tried eat everything in the sampling tray.

Saturday 5th July 2008 Billy Wood Nature Day at Town Close Hills Nature Reserve aka Billy Wood

Once again the atrocious weather halted this event in its tracks. After struggling to put up various gazebos in the wind and rain, the heavens opened and one by one the various wildlife and social activity groups who attended the event drifted off home.

Sunday 6th July 2008 Spurn Point

Unfortunately this field trip was cancelled due to the weather forecast for cold, overcast conditions. Once again, the forecast turned out to be correct.

Sunday 27th July 2008 Fen Bog

Six Yorkshire Branch members attended this field trip and were rewarded with sightings of 29 Keeled Skimmer, 4 Golden-ringed 6 Black Darter, several Large Red damselflies, 3 Common Hawker and a lone Emperor. We also managed to spot eleven butterfly species including Dark Green and Small Pearl-bordered Fritillaries and I was delighted to photograph a Green Tiger Beetle. However, despite an extensive search of Eller Beck we were unable to locate any Beautiful Demoiselle. We then continued in my minibus to the tarn at Goathland where we saw 500+ Emerald, 9 Common Blue and 15 Large Red Damselflies and 5 Black Darter.

Male Keeled Skimmer at Fen Bog. Paul Ashton.

Saturday 16th August 2008 Foxglove Covert

Six Yorkshire Branch members, three volunteers and a visitor were lead around the Reserve by one of the wardens. It was rather cool and overcast but we were delighted to see a recently released Water Vole from the re-introduction program at the first pool we arrived at. This sighting was trumped at the next pool where we found three more, two of whom provided excellent close up photo opportunities. As we progressed further around the Reserve, the weather improved a bit and we were rewarded with views of several Common Darter along the moor edge. We then made acquaintance with the Reserve's four Highland Cattle. We were informed that they were a friendly bunch but after being charged by one of them, I'm not so sure. Luckily, no harm came to any of us but it does emphasis the need to complete risk assessment forms and be covered by BDS insurance. After lunch at the Reserve Centre, the Yorkshire Branch members split up into small groups and revisited various areas. Although it was still cool, the sun was now out and produced sightings of single Southern and Common Hawkers. Eight Common Blue and two Emerald damselflies were also seen as well as a total of fourteen Common Darters. Before we left, we thanked the warden and volunteers for their time and made a donation of £10 towards their conservation fund.

Male Southern Hawker at Foxglove Covert. Paul Dinsdale.

A Few French Dragonflies to Identify

Bill Hall

In the past three to four years I have been able to turn a general interest in dragonflies into a serious study, mainly through the use of improved optical equipment. First of all I had to replace an older pair of birding binoculars with a pair which focus down to about two metres and a good DSLR. Most important however was the acquisition of a 300mm lens which allows the possibility of identification shots. I came into possession of this last piece of equipment just before a trip in July 2008 to see friends who have a house in central France.

The areas we visited were Deux-Sevres (near Poitiers) and the Brenne (near Châteauroux). The Brenne is a superb region for wildlife with very many lakes. Apart from dragonflies its specialities are orchids and water birds. Incidentally in Mézières-en-Brenne by chance we met someone in a restaurant, obviously a naturalist, whose name turned out to be Dave Smallshire.

Most of the fieldwork took place around our friends' house in a small village called Clavé and particularly on the wooded shores of a nearby sizable reservoir and small lake. The Brenne probably has more potential and Dave Smallshire was making a reconnaissance trip there to plan a 2009 tour. However the variety found in our local area was still impressive. In the wooded area around the reservoir we found a demoiselle which I take to be a female Copper Demoiselle (Calopteryx haemorrhoides) from the pale pseudo-pterostigmata.

The White Featherleg (Platycnemis latipes) shown was one of three types of Featherleg photographed; the others being Orange Featherleg (Platycnemis acutipennis) and White Legged Damselfly (Platycnemis pennipes), which occurs in southern England of course. An enlarged view of the tibia is shown in the inset picture.

I took a number of pictures of the next dragonfly because it was pretty obliging, resting on the ground and on low vegitation, and also because it was rather showy. My initial guess was Yellow Clubtail, quickly followed by Pronged Clubtail and then male Western Clubtail (Gomphus pulchellus). In that part of France there is the possibility of four Clubtails according to published distribution maps, the fouth being Common Clubtail. A bit further north the maps show that there is a fifth, since River Clubtail is on the Loire.

Altogether I think I must have taken pictures of about 15 different species and at the time I had no idea of what the vast majority of them were. I had to buy a copy of Dijkstra's Dragonflies of Britain and Europe on my return to the UK and I am still trying to make complete sense of them.

East Riding Dragonflies 2008

Paul Ashton

The damp weather this year had an impact on the number of records received from observers. The usual breeding species were generally found in their usual haunts and numbers, some increasing in numbers where water was suddenly available. The biggest impact was the lack of migrant species arriving in the area. The following is a brief summary of the main highlights or areas to focus on during 2009.

Beautiful Demoiselle *Calopteryx virgo* was not found along the River Hertford this year, despite checking. They were however several found along the River Derwent after the confluence with the Hertford, and also found along one of the drainage cuts near Sherburn. There is more scope for further 1km squares to be added for this species.

Beautiful Demoiselle on the River Derwent. - Paul Ashton.

Banded Demoiselle *Calopteryx splendens.* A single record from the River Hull near Wawne. With some records received from previous years at the same location and others, it seems to indicate that this species is present along the river, though distribution is still a bit sketchy. This species is already recorded in several areas west of the Wolds, again there are several stretches of water where this species should be present which still need to be surveyed.

Small Red-eyed Damselfly *Erythromma viridulum.* Despite its rapid spread north, three years ago, there so far seems to be no further signs of any expansion. Oak Road Lake, Hull still remains the core site. Three were present at Spurn again this year. Checking the soak dykes along the banks of the Humber towards Hull may uncover further records.

Variable Damselfly *Coenagrion pulchellum* was again found in good numbers at Broomfleet Washlands. Time was spent trying to find out what areas this species was using for ovipositing. Many were found to be using the drain skirting the outside banks of the site. Perhaps some dykes and drains away from the site could be holding this species.

Variable Damselfly at Broomfleet Washlands. Paul Ashton.

Common Hawker *Aeshna juncea*. Present on most visits to North Cliffe Heath this year. The site in recent years has been dry, however the wetter condition have led to standing water all year round which has proved an attraction to this species. Recorded on many visits with copulation and ovipositing witnessed. Record received from a new heathland reserve, Calley Heath, near Barmby Moor.

Common Hawker at Skipwith Common.
Paul Ashton.

Migrant Hawker *Aeshna mixta* deserves a mention due to the lack of confirmed breeding data. Many are witnessed copulating and ovipositing, though few exuvia are ever found, despite adults being numerous at some sites. The peak count of flying individuals was 45 at Tophill Low, though only two exuvia were found. This is in sharp contrast to Southern Hawker *Aeshna cyanea*, were the peak adult count was four, compared to 64 exuvia found. There are a few possibilities for the difference, i) most Migrant Hawkers are true immigrants, with only a handful of larvae surviving to emerge, or ii) we are looking in the wrong areas for emerging Migrants. Perhaps something to focus on during 2009.

Hairy Dragonfly *Brachytron pratense*. The highlight of the year was the discovery of this species in the VC. It was always thought that the presence of Variable Damselfly *C. pulchellum* at Broomfleet Washlands, was a also a good omen for this species to be present. The first record involved four individuals including a copulating pair. They were difficult to connect with and were only found on four occasions, being photographed on two of these. The next step is to find some exuvia and confirm breeding.

Hairy Dragonfly at Broomfleet Washlands.
Paul Ashton

Broad-bodied Chaser *Libellula depressa* continues to be recorded at an increasing number of sites. A challenge for 2009 is to look out for exuvia to finally confirm breeding of this species.

Black Darter *Sympetrum danae.* The wetter conditions at North Cliffe Heath led to double figure counts this year, the site in recent years has usually been dry. Checks were made on sites further south to understand where this influx arrived from, however only two adults could be found on Bunny Hill Heath immediately south of North Cliffe Heath. There must be another local population still to be found that has augmented the numbers at North Cliffe?

Red-veined Darter *Sympetrum fonscolombii.* There were no confirmed sightings of this species from Spurn this year.

The Variable Damselfly (*Coenagrion pulchellum*)
Enigmatic and little studied.

Richard Shillaker

The Variable Damselfly is described by Parr (2002) as "an enigmatic species in that its distribution is scattered over many parts of England and Wales, extending into Scotland, but the colonies are often restricted to small areas which appear no different from much of the surrounding countryside. Populations may be faithful to long-time colony sites or may shift their concentrations to neighbouring areas from year to year. In contrast, in Ireland the species is common and widespread."

Corbet and Brooks (2008) report that the species breeds in standing or slow moving water having luxuriant growth of aquatic and bank side vegetation and can be eliminated by dredging.

Lowe *et al* (2008) describe the species as locally abundant in the British Isles but in widespread decline. In contrast, they report the closely related Azure Damselfly (*Coenagrion puella*) to be abundant and widely distributed. The difference in distribution of these two species in the British Isles is clearly illustrated by maps in Corbet and Brooks (2008). As far as Yorkshire is concerned, these maps show that only four 10 km squares have any records (historical or more recent to 2006) for the Variable Damselfly as compared with a much larger number of 10 km squares with records for the Azure Damselfly.

It is therefore interesting to report that a significant population of the Variable Damselfly has recently been found at Broomfleet Washlands in East Yorkshire (Grid reference SE 868 282). Following tentative identification of an adult in June 2006, the presence of this species was confirmed in May 2007, when over twenty adults were counted (see Skimmer 2008). Further records of sightings of this species from the Broomfleet Washlands complex have been reported on the East Riding Dragonflies website (for 2007) and on the website of the Yorkshire Branch of the British Dragonfly Society (for 2008). In 2008, there are records from early May to early July, with a peak count of 114 on 10th May. Egg laying by the Variable Damselfly has been observed at this site (Paul Ashton pers comm.).

There would appear to have been very few published studies of the Variable Damselfly. Notably, the bibliography in the recently published 'Dragonflies' Corbet and Brooks, 2008) lists no original study report with Variable Damselfly (or *Coenagrion pulchellum)* in the title as compared with 12-13 citations each for the Azure and Southern Damselflies *(C. puella and C. mercuriale).*

An outline of the ecology and behavior of the Variable Damselfly is provided by Parr (2002) and also by Nelson and Thompson (2004). Parr however comments that the key environmental requirements of this damselfly are not understood. In this paper, attention is drawn to other published information on the biology and ecology of the Variable Damselfly, particularly with reference to potential competition and/or hybridisation with the related Azure Damselfly.
In the context of potential competition between these two species, it is noted that Corbet and Brooks (2008) comment that both are similar in appearance and behavior, but the Variable Damselfly is slightly more delicate. Also, based on counts in 2008 at Broomfleet Washlands (see website of the Yorkshire Branch of the BDS), it is notable that adults of both species were present in late spring/early summer but numbers of the Variable Damselfly counted were always much higher than for the Azure Damselfly. Steve

Cham (*pers comm*) reports a similar situation at St Ives in Cambridgeshire where "Variable is always in higher numbers than Azure which both breed and are in high numbers".

It is relevant that the Variable Damselfly is highly variable in appearance (hence its common English name). The adult is not easy to identify in the field, and there are currently no known characters that will reliably distinguish larvae of the Variable and Azure Damselflies (Corbet and Brooks 2008; Steve Cham (*pers comm*). Further consideration of the robustness of findings attributed to larvae/exuviae of the Variable Damselfly is presented below.

The main features for distinguishing between adult male Variable and Azure Damselflies in the field are shown in the attached photograph.

Field studies in Belgium (Flanders)

An initial study of dragonflies by Dumont (1971), which included data on the Variable and Azure Damselflies was followed by further work by van Noordwijk (1978). van Noordwijk noted that the Variable and Azure Damselflies do not usually occur together in the Netherlands and Belgium, the Variable Damselfly being a species of more eutrophic habitats than the Azure Damselfly

Dumont studied Odonata in a variety of artificial waters (bomb-craters transformed into fishing ponds, medium sized ponds and a large lake) in Eastern Flanders between 1957 and 1969. He noted that several new species entered the area. If intrusion was successful there was an effect on the species already present. The most striking example was the effect of the arrival of the Variable Damselfly on the Azure Damselfly. Up to 1960, when the Variable Damselfly was first seen, the Azure was abundant on all types of water. After that time the Azure Damselfly gradually became restricted to the bomb craters (not populated by the Variable Damselfly), except for a small population on the ponds flying late in the season after the main flight period of the Variable Damselfly. This finding suggested a competitive exclusion of the Azure Damselfly by the Variable Damselfly, except where the former can avoid interactions through segregation from the latter in space or time.

*[**Larval ID note**: The above brief information on the Dumont study comes from van Noordwijk (1978). van Noordwijk does not mention if Dumont examined larvae/exuviae.]*

van Noordwijk followed up the work of Dumont in the same area of Belgium between May and July 1974 by investigating competition between damselflies. The study sites were a medium sized pond containing 8 species of damselfly (including Variable and Azure) and a small bomb crater pool containing only the Azure Damselfly (and a few *Ischnura*). Exuviae left by emerging adults were counted at different sites in the pond (to investigate the distribution of larvae and the timing of adult emergence) and a mark-recapture study of adults was conducted. It was noted that adult males of both species started to patrol in the second half of the morning. Azure males reached their maximum densities at the water earlier in the day than Variable males, and their peak was less pronounced. There was no indication of species recognition between Azure and Variable Damselflies. The author recorded many instances of a male Azure trying to mate with a female Variable (and *vice versa*) but that "physical contact prevented tandem formation".

van Noordwijk could find no major difference in utilization of the environment in space or time by the Variable and Azure Damselflies, for example the main flying (patrolling) zone for males of both species was high up in the Carex vegetation on the shore line (but was distinct from the main activity

zones of other damselflies). The author however considered that there were indications that female Azure Damselflies were driven out of their favoured areas for ovipositing but continued to oviposit in the larger pond 'at the peak density' of the Variable Damselfly. Hence it was postulated that, in the 5 years since Dumont's study, the Azure Damselfly had adapted to the arrival of the Variable Damselfly.

*[**Larval ID note**: This study included the ID of exuviae. van Noordwijk acknowledges that the distinction between exuviae of Variable and Azure Damselflies was difficult, especially for specimens lacking caudal lamellae, but does not comment further on the criteria used for species identification. It therefore seems reasonable to propose that some uncertainty must surround the robustness of the reported exuviae data in this paper. Indeed difficulties in exuviae ID might have contributed to the absence of any significant difference being found in the spatial distribution of exuviae or in the median date of emergence (although variation in time of emergence is reported to be greater for the Azure).]*

Field study in the Norfolk Broads

The co-existence of larvae of the four dominant species of damselflies at Upton Broad, Norfolk was investigated from 1971-1974 by Johannasson (1978). These four species comprised the Variable Damselfly, as well as the Common Blue (*Enallagma cyathigerum*), Blue-tailed (*Ischnura elegans*) and Red-eyed Damselflies (*Erythromma najas*). Two other species of damselfly were reported to be less abundant, i.e. Emerald (*Lestes sponsa*) and Large Red Damselflies (*Pyrrhosoma nymphula*) but, interestingly, there is no mention of the Azure Damselfly being present. Of the three principal habitats sampled (reedbed, transition zone and mud below open water), larvae of the Variable Damselfly were found only in the reedbed (the other three species were found in all three areas). In addition, within the reedbed, the author concluded that the Variable Damselfly appeared to be spatially separated from the other three species to some extent because it was more abundant in vacuum and net samples than on artificial macrophytes. These findings were interpreted to indicate that larvae of the Variable Damselfly favoured the horizontal plane within the reedbed or that they didn't like the type of habitat provided by the artificial macrophytes (strands of polypropylene rope apparently floating vertically in the water). It is also reported that large instars of this species showed some preference for *Cladium mariscus* (the Great Fen Sedge or Saw Sedge) over *Phragmites communis (= P.australis,* the Common Reed). Hence there seemed to be some habitat separation between the Variable and other damselflies.

In the summer of 1974, weekly collecting of exuviae showed that emergence of adult Variable Damselflies lasted from mid May- end of June (7 weeks), with most emerging mid May-mid June, and a suggested peak during two weeks at the end of May. Adults were recorded flying from the end of May to the end of July. Egg laying sites of the four dominant species were reported to be distinct and generally separate, with the Variable Damselfly using glades within the reedstand (i.e. not in the dense reed sward nor on lily pads in open water). The last bout of egg laying was observed on July 18th. With a restricted egg laying season the young tended to grow as a cohort many reaching the antepenultimate instar by winter. In early spring they increased dramatically in size, half attaining the last instar by mid-April. The life cycle was described as basically univoltine (one brood per year) and synchronous.

*[**Larval ID note:** Many larvae had to be reared for identification at a larger larval stage. Larvae were identified using Gardener's key (1954). As there was mention of adult Variables in the paper (but not of Azures) it could be argued that all the larvae found are likely to have been Variables. However it is notable that both species are reported from neighbouring Upton Fen in 2006 by Lowe et al (2008). More*

evidence as to the robustness of the larval identification in this study might be presented in the underlying thesis (Johannsson 1976) but this has not been consulted.]

Recent genetic studies

It has been proposed that the decline in the Variable Damselfly might be due to hybridisation with the Azure Damselfly. Such a process (i.e. a noticeable decline in only one of the hybridising species) can occur when the difference in abundance between interbreeding populations is large. According to Lowe *et al* (2008), this is a plausible explanation for the decline in the Variable Damselfly because its fragmented distribution is entirely overlapped by the distribution of the Azure Damselfly.
Examples of interspecific reproductive behavior between Variable and Azure Damselflies under natural conditions are listed by Miller and Fincke (2004), i.e.

- male Azure in wheel with female Variable (Steiger 1988, G.Reder unpubl)
- male Variable in tandem with female Azure (R Hoess unpubl)

A pilot genetic study in Southern England (with adult Azures collected from three sites and adult Azure and Variables from one site) suggested that there was evidence of hybridisation based on investigation of a single genetic marker in mitochondrial DNA (Freeland and Conrad 2002). Certain limitations to the genetic methodology used in the pilot study were voiced by Lowe *et al* (2008). These authors investigated evidence for hybridisation based on a panel of 12 nuclear genetic markers in adult populations of both species from four other sites in the South of England; only one site, Upton Fen, contained both species (this site borders Upton Broad where Johannasson conducted her field study of damselflies). Another site from which only the Variable Damselfly was collected was St Ives in Cambridgeshire (interestingly Steve Cham reports observations on both Variable and Azure Damselflies from a St Ives site, see above). Love *et al* conclude that there was no evidence of hybridisation between Variable and Azure Damselflies. However they note that investigation of other sites where the two species occur is needed to provide conclusive evidence.

Lowe *et al* consider that the most likely causes for the decline in the Variable Damselfly is linked to habitat loss/change/decline. They note that the Variable Damselfly is more sensitive to the effect of agricultural intensification (e.g. eutrophication, drainage) than the Azure Damselfly. This accords with the observations of Nelson and Thompson (2004) who note that in Ireland the Variable Damselfly is the more dominant species in clean, mesotrophic waters in contrast to the Azure Damselfly which is more dominant in eutrophic waters. It is therefore somewhat of a paradox that van Noordwijk (1978) considers that the Variable Damselfly prefers more eutrophic waters than the Azure Damselfly. It is also intriguing that Dumont provides evidence for the Variable Damselfly out competing the Azure Damselfly.

It will be interesting to see if future field observations at Broomfleet Washlands can shed any further light on the natural history of the Variable Damselfly in the presence of the Azure Damselfly. However this is not expected to be an easy task given the difficulties in distinguishing between adults, and especially larvae/exuviae, of the two species.

Some additional sources of information on the biology of the Variable Damselfly

Reproduction: Martens (1989) describes aggregations of tandems during oviposition.

Egg, larvae and exuviae : the egg and early larval stadia of the Variable Damselfly have been described by Balfour-Browne (1909). MacNeil (1950) apparently includes descriptions of the larvae of Variable and Azure Damselflies. Some features for distinguishing between the exuviae of the Variable and Azure Damselflies have been tentatively suggested by Seidenbusch (1996). Steve Cham (*pers comm*) notes that Seidenbusch makes a good stab at separating these two species but his identification features do not work for all populations.

Adult emergence: Based on a 4-day period of observation near Kolo in Poland, synchronised adult emergence of Variable Damselflies on the morning of May 22 1992 was observed (Tonczyk, 1993). The author considered that high air and water temperatures during the day and night were determining factors for the simultaneous emergence. From observations made over the whole summer it was concluded that there was only one generation per year. It is also reported that the number of emerging dragonflies (on average 34 specimens per square metre) was estimated to be just several percent of the number of eggs laid.

Parasites: Some 42% of adult Variable Damselflies caught near Barlinek in Poland in 1999 carried water mite larvae of the genus Arrenurus (Zawal 2004). The mite larvae were found mainly on the ventral thorax.

Acknowledgements

I wish to thank Tom Hubball, Paul Ashton and Steve Cham for reading a draft of this article and for making helpful suggestions. Thanks are also due to Paul Ashton for his composite photograph, and for advice on distinguishing adult male Variable Damselflies from adult male Azure Damselflies.

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Identification of male Variable and Azure Damselfly

Richard Shillaker

Composite photograph showing adult male Variable Damselfly (top) and adult male Azure Damselfly (bottom).

The following commentary is based on advice from Paul Ashton, who also provided the photograph. He notes that because of variation in appearance it is always best to use at least two features to confirm identity.

Antehumeral stripes: the photograph shows the antehumeral stripes to be broken (incomplete) in the Variable; complete in the Azure. However there can be variation in the Variable: antehumeral stripes usually broken, sometimes virtually absent, but also sometimes complete as in Azure.

U-shaped black marking on abdominal segment 2: the photograph shows the U joined to black ring below in the Variable; not joined to black ring below in Azure. However Azure can also show some variability, i.e. the U shape black marking can sometimes have a stalk.

Markings on abdominal segment 9: the photograph shows them to be a square three pointed crown in the Variable; a V shaped two pointed crown in the Azure.

Yorkshire Branch Website

Check out the website for the latest news, first sightings of the year, field trip diary, contact details, dragonfly locations to visit and how to submit your records.

Lost a previous issue of Skimmer! All issues available to download for you to print.

Address at the bottom of every page.

Species list for Yorkshire

Latin Name	Common Name	Status in Yorkshire
Calopteryx virgo	Beautiful Demoiselle	Scarce Resident Breeder
Calopteryx splendens	Banded Demoiselle	Common Resident Breeder
Lestes sponsa	Emerald Damselfly	Common Resident Breeder
Lestes dryas	Scarce Emerald Damselfly	Rare Vagrant
Pyrrhosoma nymphula	Large Red Damselfly	Abundant Resident Breeder
Erythromma najas	Red-eyed Damselfly	Scarce Resident Breeder
Erythromma viridulum	Small Red-eyed Damselfly	Scarce Resident Breeder
Coenagrion puella	Azure Damselfly	Abundant Resident Breeder
Enallagma cyathigerum	Common Blue Damselfly	Abundant Resident Breeder
Ischnura elegans	Blue-tailed Damselfly	Abundant Resident Breeder
Ceriagrion tenellum	Small Red Damselfly	Aberrant Vagrant
Coenagrion pulchellum	Variable Damselfly	Scarce Resident Breeder
Aeshna juncea	Common Hawker	Common Resident Breeder
Aeshna mixta	Migrant Hawker	Common Resident Breeder
Aeshna cyanea	Southern Hawker	Common Resident Breeder
Aeshna grandis	Brown Hawker	Abundant Resident Breeder
Aeshna isosceles	Norfolk Hawker	Aberrant Vagrant
Anax imperator	Emperor Dragonfly	Uncommon Resident Breeder
Anax parthenope	Lesser Emperor	Scarce Migrant
Hemianax ephippiger	Vagrant Emperor	Rare Migrant
Brachytron pratense	Hairy Dragonfly	Scarce Resident Breeder
Cordulegaster boltonii	Golden-ringed Dragonfly	Scarce Resident Breeder
Cordulia aenea	Downy Emerald	Rare Vagrant
Libellula quadrimaculata	Four-spotted Chaser	Abundant Resident Breeder
Libellula fulva	Scarce Chaser	Scarce Ex-Resident
Libellula depressa	Broad-bodied Chaser	Common Resident Breeder
Orthetrum cancellatum	Black-tailed Skimmer	Uncommon Resident Breeder
Orthetrum coerulescens	Keeled Skimmer	Scarce Resident Breeder
Sympetrum striolatum	Common Darter	Abundant Resident Breeder
Sympetrum fonscolombii	Red-veined Darter	Scarce Resident Breeder
Sympetrum flaveolum	Yellow-winged Darter	Scarce Migrant
Sympetrum sanguineum	Ruddy Darter	Common Resident Breeder
Sympetrum danae	Black Darter	Common Resident Breeder
Sympetrum vulgatum	Vagrant Darter	Rare Migrant
Leucorrhinia dubia	White-faced Darter	Scarce Ex-Resident

Key

Abundant - Occurs in all suitable habitats.
Common - Occurs in nearly all suitable habitats, with some areas sparsely used.
Uncommon - Occurs regularly, but uses little of the suitable habitat.
Scarce - Occurs regularly, but in very small numbers.
Rare - Beyond its normal geographic range, only recorded once or twice a decade.
Aberrant - Far from its normal range. Confirmed sighting but further observations unlikely.
Resident Breeder - Present throughout the year.
Migrant - Non-resident - typical migrant species (confirmed breeding may have been recorded).
Vagrant - Lone non-resident adult recorded
Ex-Resident - Historic resident/migrant not recorded for many years

The National Dragonfly Atlas - 2008 to 2013

Paul Ashton

The Dragonflies in Focus Project, including the National Dragonfly Atlas was launched with Chris Packham on 24th April 2008 at the Natural History Museum. The aim of this project is to update the known distribution of British dragonfly and damselfly species over the next 5 years, culminating in the publication of a new national atlas in 2013. More information on this project can be found on the National Atlas page of the British Dragonfly Society website.
http://www.dragonflysoc.org.uk/dragonfliesinfocus.html

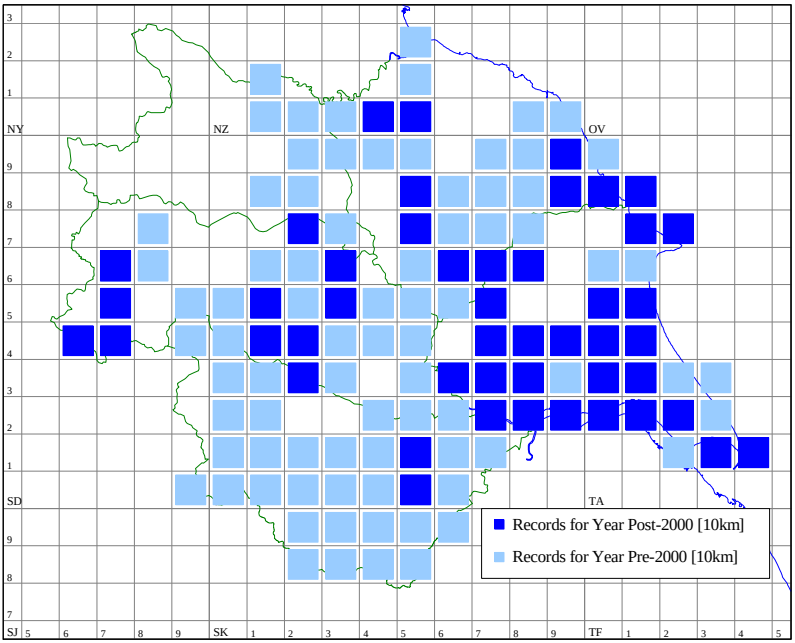
How can you help ?

There are three key tasks that need to be completed during the recording phase of the National Atlas.

Task one

The first is to re-confirm all 10km squares with historical records prior to the year 2000. Below is the current distribution map for Blue-tailed Damselfly in Yorkshire. The dark blue squares confirm that this species has been recorded since the year 2000. The light blue squares represent areas with historical records that need to be re-confirmed to update the Atlas. Squares with no records need to be visited to confirm the species presence or absence.

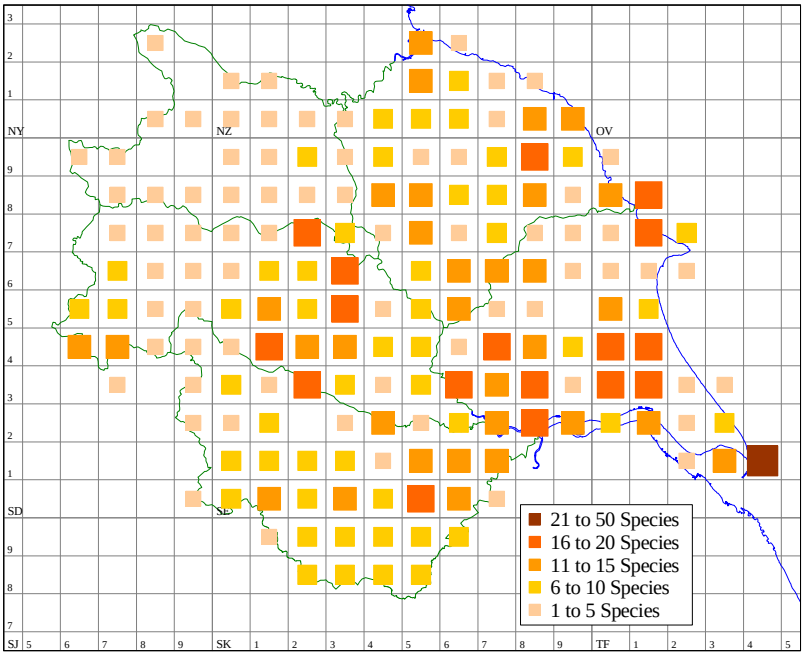
Maps for all other species can be found on the Yorkshire Branch Website.



Task two

Under recorded areas also need to be visited. The species density map below shows the number of species recorded within each 10km square. Effort should be made to record species in the areas with the least or no records.

VC61 to 65 Species Density



Task three

Whilst recording the presence of species it is also important to make note of any breeding activity. Currently less than 10% of records submitted detail any breeding activity. Confirmation of breeding is a valuable tool when it comes to conserving specific sties of importance.

What to do now ?

Submit your records to the relevant Vice-county recorder as detailed below:-

VICE COUNTY RECORDERS		
VC61 - Paul Ashton	vc61@erdragonflies.co.uk	01430 803005
VC62 - Keith Gittens	vc62@brilliantemerald.wanadoo.co.uk	01347 824480
VC63 - Tom Hubball	vc63dragonfly@blueyonder.co.uk	01535 678334
VC64 - Helen Dinsdale	bds64recorder@blueyonder.co.uk	01535 653041
VC65 - Tom Hubball	vc63dragonfly@blueyonder.co.uk	01535 678334

The Birth of a Dragonfly - Observations of Southern Hawker Emergence from a Garden Pond

Anne Riley

It all started with a pair of wings floating in the pond – no head, no abdomen, just a thorax with wings and legs attached. The wings were perfect – new and shiny and had obviously belonged to a big dragonfly. I knew that a Southern Hawker had laid her eggs in the moss around the pond two years ago, and now the nymphs which had lived as fierce predators in the pond would be ready for the miraculous transformation into the adult dragonflies. What disaster could have befallen my newborn dragonfly? Had it been taken by a bird, or a frog perhaps before it had had a chance to fly? This was June 22nd, 2007 and over the next six weeks or so, the story unfolded….

The 25th June was a dreadful day with pouring rain and howling winds. Looking out of the kitchen window early that morning I could see two dragonflies, wings still closed together but otherwise fully emerged. One was clinging to a cane in the pond (put there for the use of dragonflies!) and the other on stripy-leaved grass (*Phalaris arundinacea*, Gardner's garters). They both clung on for dear life throughout the day. They were both still there at 8pm, but at next check-in time of 8-30pm, disaster! There was no dragonfly on the cane. I rushed to the pond and my worst fears were confirmed – a dragonfly squirming in the water, trying to climb onto a waterlily leaf. I fished her out, but her abdomen had become twisted over and she had a bash in her left eye. She clung to my finger as I gently unfolded her abdomen, and her instinct was to climb upwards. It was far too windy to risk finding her a perch outside, so I decided to give her a stick to cling to inside a large box so I could bring her inside. Her wings were sodden and matted together, so I carefully blotted them with a tissue. I covered the box and left her quiet in the conservatory.

Next morning I woke at first light and rushed to the kitchen window to see if Mrs. Stripy-leaf was still clinging on – she was! I waited until a more respectable hour to check the box, and when I finally opened it, I expected to find a dead dragonfly – but no! She was alive and her wings were open! Apart from the bashed eye and the kink in her abdomen, she looked OK. It was no longer raining, so I put her on a nice tall clump of hemp agrimony by the pond and crossed my fingers. She disappeared mid-afternoon and I can only hope she flew. I saw Mrs. Stripy-leaf make her maiden flight at lunchtime. The maiden flight is often quite short, and she only flew a few yards into a berberis where she stayed for the next two whole days, perhaps because of the continuing cold weather.

It had now become part of my early morning routine to inspect the pond for exuviae (empty cases) or emerging dragonflies that might need rescuing, but it wasn't until July 10th that I witnessed (and photographed!) a complete emergence. According to the books, Southern Hawkers usually emerge during the hours of darkness and fly as soon as it is light to have a better chance of escaping predators and I never thought I'd be lucky enough to see the whole sequence.

The larva had already climbed onto a suitable support (the stripy-leaved grass again) and was motionless. At first I thought it was just another empty case, but then it twitched. Hanging on firmly, it threw its abdomen backwards several times in quick succession. The larva does this to check that it has a secure grip, because once it is out of its case, it will hang on to it for support to complete its emergence. If the case is not secure, the dragonfly is doomed.

Eventually it was satisfied and remained still. I watched it

intently, camera at the ready. After nearly half an hour, a small split appeared in the skin behind the eyes, and the new dragonfly's head began to emerge. The split widened and the thorax appeared with the larval breathing tubes still attached. Next, the dragonfly pulled its legs free and arched backward so that its head hung down. The breathing tubes snapped – the adult breathes through spiracles in the skin connected to a new network of tubes and air sacs. This stage had taken less than five minutes. A half-hour pause now whilst the legs hardened and gathered sufficient strength for the next stage. He, (the very obvious secondary genitalia confirmed this) waved his legs around from time to time, almost like drying nail varnish!

During this time I was crouched uncomfortably, but I aren't move for fear of missing anything. Then, with no warning, he sat up, grabbed his case, paused for only a second and pulled his abdomen out, letting it hang down. Now I too could stretch for a minute.

Next, he pumped fluid into the tiny wing buds which began to expand rapidly over the next ten minutes. At this stage, they were milky white in colour with the veins clearly etched making a very pleasing

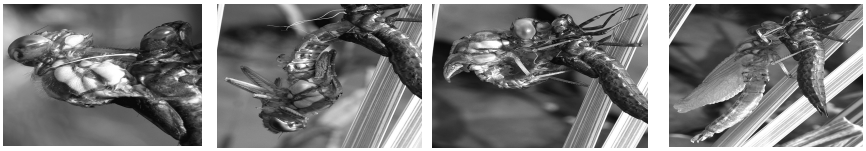


image. When the wings were fully expanded, they began to turn glassy as fluid was withdrawn now to be pumped into the abdomen to expand it in its turn. The pale colour at this stage is a mere hint of the brilliance of a mature adult – this teneral stage lasts a couple of weeks.

Three and a half hours after the first split appeared, the wings snapped open ready for flight. Another five minutes and the whirring began – this is necessary to warm up the muscles – and then we had lift-off! He flew safely up and away across the road, no doubt to the shelter of thick vegetation where he would stay until his body was sufficiently hard to set off chasing his insect prey.

I was exhausted – what a wonderful thing to watch, particularly when you realise that dragonflies have been doing this for nearly 300 million years.

The following days saw a succession of further emergences, some successful, some disastrous with the insect losing its grip and falling. Although I tried to rescue a couple of these, the soft bodies are so easily damaged and tell-tale green fluid leaking out suggested they wouldn't make it. On one of these occasions, the injured insect was attacked by wasps and I later found it eaten. It was then I started to wonder about the headless tailless wings. Then I found more remains – a dragonfly in the water, wasps eating the head and a newt taking the tail. Soon there was nothing left but the wings and thorax – was this the answer to my question? Certainly, there always seemed to be wasps patrolling the pond perhaps on the lookout for emerging dragonflies. Then I spotted another dragonfly on a waterlily, wings still closed. A wasp briefly landed on it, perhaps trying to sting, and the dragonfly twitched it off. I picked up a garden cane and fended off further attempts by the wasp – it wasn't easy trying to hit the wasp and not the dragonfly! Then the dragonfly's wings snapped open, but the wasp landed again and this time was very difficult to dislodge. Would the dragonfly be able to escape in time? I could no longer stand the suspense, and determined not to let this dragonfly suffer the same fate as the last one, I managed to reach over to his lily leaf and plucked it, dragonfly and all. I stood in the middle of the lawn holding it high until my dragonfly took off and soared away over the roof. Now perhaps I should not have interfered, but there is something

about the beauty of a dragonfly that I can't resist, and to let two years development go to waste seemed such a shame – I'd be no good as a wildlife cameraman!

On August 5th I recorded my final emergence bringing the known total to 39. Below is a brief analysis:

Outcome	number	%
Seen to fly	14	36
Seen wings expanded; presumed to have flown	4	10
Empty case; presumed to have flown	11	28
Definitely didn't make it	7	18
Probably didn't make it	2	5
Possibly survived (the one that fell off the cane on June 25)	1	3

Wasps were probably at least partly responsible for four or five of the dragonflies known to have perished.

Of all the habitats you can create in your garden for wildlife, a pond and its surrounding vegetation is surely the richest. For me, being able to observe dragonflies emerging transformed a miserable July into a memorable summer.

Dragonfly Fauna of the Arboretum at Castle Howard

Keith Gittens

The arboretum at Castle Howard is managed by the Arboretum Trust, which involves Kew Gardens and the Castle Howard estate. In 2008 I surveyed the four water bodies within the arboretum, which are different in size, depth and flora and therefore have variations in the dragonfly fauna they hold. In total 15 species were recorded including Broad-bodied Chaser *(Libellula depressa)*, Emperor Dragonfly *(Anax imperator)*, Ruddy Darter *(Sympetrum sanguineum)* and Migrant Hawker *(Aeshna mixta)*, not bad for the north of England!

Hannah Gooch with the Dragonflies board set up at the Arboretum.

Arboretum Lake

In mid to late spring this lake produced masses of emerging damselflies amongst the stems of Bogbean *(Menyanthes trifoliate)*, which is the predominant marginal flora. Taking their maiden flight many of the immature damselflies moved in to the warm sheltered areas of Japanese Acers on the north side of the lake to feed and mature. A walk amongst these small trees would produce Large Red *(Pyrrhosoma nymphula)*, Common Blue *Enallagma cyathigerum)*, Azure *(Coenagrion puella)* and Blue-tailed Damselflies *(Ischnura elegans)*.

The wind tends to funnel down the lake so in terms of larger dragonflies in a year like 2008 the numbers recorded were probably not as good as they should be, however Four-spot Chaser *(Libellula quadrimaculata)* was reasonably common in June and of the hawker dragonflies Brown Hawker *(Aeshna*

grandis) was the most notable. In to late summer the area of Acers once again held good numbers of insects although this time it was a profusion of Common Darters *(Sympetrum striolatum)*.

Atkinson's Bog

Somewhat more sheltered than the arboretum lake and with a different flora this site was well worth watching, the protection from the wind making it easier to see hawker dragonflies including Emperor *(Anax imperator)* in early summer, followed by Brown Hawker *(Aeshna grandis)*, Southern Hawker *(Aeshna cyanea)* and in late summer Migrant Hawker *(Aeshna mixta)*. The latter species in particular being attracted by the more fen like habitat of stands of *Phragmites*. The closeness of this lake to the Arboretum Lake means there will be some movement of insects between the two.

Dew Pond

This is an excellent site. The shallow pond is sheltered and sunny and hence the number of species recorded here is the greatest at 14. The flora here consists mainly of rushes including *Juncus* and *Eleocharis*. Some of the species recorded appear absent at the other sites within the arboretum and these include Broad-bodied Chaser *(Libellula depressa)* and Black Darter *(Sympetrum danae)*.

On one visit numerous freshly emerged specimens of Ruddy Darter *(Sympetrum sanguineum)* were to be found, their wings not yet fully expanded and the exuvia still clinging to the same rush stem.

Numerous species were seen egg laying here including Emperor *(Anax imperator)*, Common Hawker *(Aeshna juncea)*, Broad-bodied Chaser *(Libellula depressa)* and Black Darter *(Sympetrum danae)*. The prominent damselflies here were Large Red *(Pyrrhosoma nymphula)* and Emerald *(Lestes sponsa)*.

Ruddy Darter, pre-flight emergent. Keith Gittens.

Sata Pond

This site up to now has not achieved the expectation, which is reflected in the slightly lower number of species recorded, it was usually the last pond to be visited and a little more open to the inclement weather. The area of open water is relatively small but Ruddy Darter *(S. sanguineum)* is common here loving the little damp marshy valley behind in to which to egg lay.

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