

Occurrence of Southern Migrant Hawker *Aeshna affinis* at Ryall Pits in 2024.

Andy Warr



01. Sightings of Southern Migrant Hawker *Aeshna affinis* have increased considerably since the first breeding records from Essex and Kent in 2010, reaching Worcestershire in 2024. Ryall Pits 02.08.24. Andy Warr.

Once only recorded as a rare vagrant from mainland Europe into the UK, sightings of Southern Migrant Hawker *Aeshna affinis* (01) have increased considerably since the first breeding records from Essex and Kent in 2010. The species has slowly spread west over the last decade, with small populations now occurring in Oxfordshire and south of Gloucester in West Gloucestershire. The mature male, like its much commoner cousin Migrant Hawker *Aeshna mixta*, is a small hawk with a blue marked abdomen, with the top of the thorax being brown with short yellow antehumeral stripes in both species.

Differences from *A. mixta* include a much plainer side to the thorax with narrow black lines, the green colouration becoming more blue with age, so resembling a small Emperor *Anax imperator*. The lack of any yellow on the abdomen, apart from the sides to segment one, and the more extensive blue markings on the abdomen are good field characters. The eyes are also a much more striking vivid blue in Southern Migrant Hawker, which gives it the alternative name of Blue-eyed Hawker. The yellow triangular mark (golf tee shaped) on segment two on *A. mixta* is another good feature to separate the pair.



02. Male Southern Migrant Hawker (above) & male Migrant Hawker (below). Andy Warr.

On 2nd August 2024, whilst searching suitable habitat at Ryall Pits for Red-veined Darter *Sympetrum fonscolombii* (a sporadic visitor here, which had successfully bred in 2023), I decided to check one

of the old silt beds, which retained shallow water levels during the spring and early summer after winter flooding.



03. The old silt bed at Ryall on 2/8/24 & Pink Water Speedwell. Andy Warr.

I entered the pit from the south end, where high vegetation was reasonably sparse, but no standing water was visible. I continued to a small open area, fringed with Common Reed *Phragmites australis* at the north end, which did hold a tiny patch of water a few centimetres deep, predominantly surrounded by a sodden carpet of mosses, with abundant Pink Water Speedwell *Veronica catenata* and rushes *Juncus* spp.

Within seconds of my arrival, a flash of blue shot past and disappeared into the reedbed, my initial thought being that it was probably a male Emperor Dragonfly *Anax imperator*. Fortunately it reappeared a couple of minutes later and began patrolling back and forth over the bog, just a few metres from where I was standing. A brief hover to check me out, was long enough to reveal strikingly vivid blue eyes, and then came the realisation that I had just seen a male Southern Migrant Hawker (01 & 02), a new species for me, plus the first county record (see Mike Averill's Worcestershire Dragonfly Roundup 2024 in this edition).

Southern Migrant Hawker does not require permanent water all year round to breed and will often choose areas which dry out during the summer months. Males will avoid standing water when holding territory, seeking out low-lying wet areas where oviposition is carried out in tandem, often directly into damp ground which may eventually dry out completely, then flood again during the winter and spring. Eggs laid the previous year, hatch early in the spring and larvae develop rapidly to emerge later that year. The old silt beds at Ryall Pits certainly matched these habitat requirements, making them the perfect breeding location for this species.

Other local Odonata enthusiasts, including Mike Averill soon arrived, and a second male was confirmed and additional perched views of this stunning insect obtained. Both males were still present the next day and amazingly they were joined by a third, though close scrutiny of my photographs over the two days revealed all were present on the 2nd.

The occurrence of a fourth male on the 3rd, came to light a couple of weeks later, when Mike Fletcher sent me a series of photos to analyse. Each male patrolled an area approximately five by 10 metres, at varying heights between 10cm and 2m above ground level, for periods as short as a few minutes up to half an hour, before disappearing into the reedbed. A patrolling male would not tolerate a second incoming male, which would be swiftly chased away, though they would tolerate the occasional male Ruddy Darter *Sympetrum sanguineum* or Common Darter *Sympetrum striolatum* present. Only once this small area was vacated would a different male occupy the territory and this switching continued throughout the day, though sometimes males were absent from the patch for quite long periods. When at rest, males would perch on vertical plant stems such as Common Reed *Phragmites australis*, Great Reedmace *Typha latifolia* and willows *Salix* spp., often at the edge

of the territory and sometimes much deeper inside the reedbed. They also favoured a narrow, man-made path through the reeds to rest. No sightings of a female were confirmed, though a male pursued an unidentified female hawk into the territory on the 3rd, both briefly dropping to the ground, before continuing high over the reedbed still unattached.



04. Southern Migrant Hawker on Common Reed. Andy Warr.



05. Path through the reedbed used by Southern Migrant Hawkers as a resting site. Andy Warr.

By the 4th August, the once boggy area had dried out considerably, no males could be found here, nor about the surrounding area, with the predominantly cloudy skies, and a stronger breeze than previous days making conditions less favourable for dragonflies and the 5th also drew a blank. Then on the 6th, by which time the site was completely dry, two males reappeared, one being from the 3rd, plus yet another new individual and sightings continued up to 26th August, with additional observations at two other ponds in the Ryall Pits complex. Over this 25-day period, hundreds of good quality photographs were taken of perched individuals, plus a smaller selection of flight shots were obtained by myself, Mike Fletcher, Mike Averill and Des Jennings. These photographs proved essential

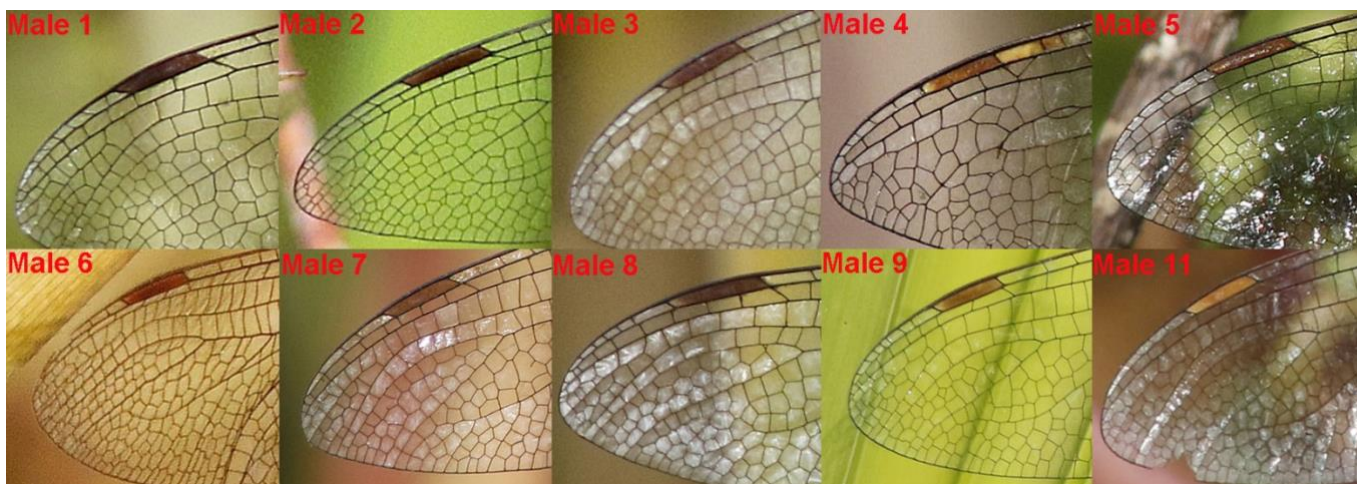
in determining the minimum number of males present, plus an individual's approximate duration spent onsite. Males in all the photographs were closely scrutinised, individuals identified, predominantly using the pattern and shape of blue markings on the abdomen and then assigned a number to indicate each confirmed male. 11 were proven using this process and a photo montage produced for each (06), depicting as many body positions as possible and the date each shot was taken. The most complete, left to right body positions were captured on seven males, the left side and back on two and just the left side on one, whilst the final individual was identified on flight views only.



06. Montage of number nine male Southern Migrant Hawker at Ryall Pits. Andy Warr.

Once all the photo montages were complete, a much closer examination of the wing cell structure revealed uniquely shaped and positioned cross-veins on each individual, backing up nicely the initial criteria used to separate the males earlier. Photos of the left

hindwing were selected from the ten perched males and a segment from around the pterostigma (wing spot) to the wing tip, cropped and compared (07).



07. Wing tips of ten male Southern Migrant Hawker at Ryall Pits. Andy Warr & Mike Fletcher.

For the majority of males, the average duration of stay was two to three days, though the original individuals may have been present for a while or fresh individuals arrived on the 2nd. Three were single day observations, whilst male number five was recorded on three occasions over an 11-day period and was probably one of the two individuals reported on 11th August (Table 1). Site visits on August 4th, 9th, 19th, 25th and 30th produced no sightings, though cooler and windier conditions may have been a factor on some dates, with fewer dragonflies on the wing, though a thorough search of the area was made on the 30th in good weather. Just four other species of

Odonata were recorded at the old silt bed whilst the Southern Migrant Hawkers held territory: Blue-tailed Damselfly *Ischnura elegans*, Scarce Blue-tailed Damselfly *Ischnura pumilio*, Common Darter and Ruddy Darter. A visit to the still dried out silt bed on 6th September found a male Migrant Hawker patrolling the exact same five by ten metre patch that the Southern Migrants had frequented.

The final question must be, from where had these individuals originated? After days of a hot southerly airflow, it was initially thought migrants from Continental Europe the most likely answer, or

dispersal from colonies elsewhere in the UK. Over the first few days, this seemed a plausible explanation, but as sightings continued, with older males being replaced by new arrivals, at the exact same locality and no other reports from Worcestershire or north Gloucestershire, a second option seemed more likely; they bred here last summer. After adult emergence, they depart into areas of dry scrub and woodland until sexually mature, sometimes many miles from water, then return weeks later to breed. This behaviour could certainly explain this series of occurrences at Ryall, with adults emerging here during July, then returning once mature to find a female and breed. Some time was spent searching for their exuviae,

but it was probably a little late in the season and none were found. I had seen four or five Migrant Hawker exuviae at Ryall on 28th July, but understandably didn't consider the possibility they might be Southern Migrants, which look almost identical.

We can only speculate on their true origin, but hopefully a few females frequented Ryall undetected this year and breeding occurred. Something exciting to keep me occupied next summer no doubt, the confirmation of breeding Southern Migrant Hawker at Ryall Pits would be nice.

Male 1	Male 2	Male 3	Male 4	Male 5	Male 6	Male 7	Male 8	Male 9	Male 10	Male 11	Male unknown
2-8-24	2-8-24	2-8-25									
3-8-24	3-8-24	3-8-24	3-8-24		3-8-24						
			6-8-24	6-8-24							
											Two on 11-8-24
				12-8-24							2nd male 12-8-24
				16-8-24		16-8-24	16-8-24				
						17-8-24	17-8-24		17-8-24		
						18-8-24		18-8-24			
										24-8-24	
										26-8-24	

Table 1. Dates when numbered males and unknown males were recorded.

References

Chelmick, D. 2020. Some observations on the life history & behaviour of *Aeshna affinis*. *Journal of the British Dragonfly Society*, Volume 36, No.1: 22-36.

Smallshire, D. Swash, A. 2014. *British Dragonflies. A field guide to the damselflies and dragonflies of Britain and Ireland*. Third Edition. Wild Guides Ltd.

Images

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