

Dragonflies in Devon

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Devon is one of the most species-rich counties in the UK for damselflies and dragonflies (Odonata), resulting from its southerly position and wide range of wetland habitats. The maritime effect gives relatively mild winters that limit the amount of freezing in wetlands, although this also cools the springs and summers unless there is a warm airflow from south-east England or the Continent. Habitats range from relatively nutrient-rich lakes, ponds, slow-flowing rivers, canals and ditches of the lowlands to acidic blanket and valley moorland bogs, flushes, streams and fast-flowing rivers of Dartmoor and Exmoor. Most of the important dragonfly sites are at least in part artificial, many resulting from the historic mining of tin, ball clay and China clay. More natural sites include the heathland bogs and springline mires of the moors, the East Devon Pebblebed Heaths and the Blackdown Hills (at which Keeled Skimmer, shown above, is very characteristic). These sites of known importance to dragonflies are listed in the Appendix, with details of their location and the locally- and nationally-important species that they support (or may do). The rest of this document comprises a summary of dragonfly recording in the county followed by a detailed systematic list.

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History of dragonfly recording in Devon

Nineteenth century records of dragonflies and damselflies (Odonata) in Devon come from Parfitt (1879), who listed 22 species, although the records of three of these species have not been regarded as authentic in modern times. Since then, records have been collated by the Biological Records Centre's Odonata Recording Scheme (ORS, now the British Dragonfly Society's (BDS) Dragonfly Recording Scheme). For the Devonshire Association's Entomology Group, O. G. Watkins collated records in the DA Transactions from 1948 to 1981, but not all of these were considered acceptable for inclusion by the ORS. In particular, a Southern Darter *Sympetrum meridionale* from Dawlish in 1901 was subsequently re-identified by the Natural History Museum as a Common Darter *Sympetrum striolatum*. A "Black-legged Sympetrum (*Sympetrum nigrifemur*)" was recorded at Stover in 1978, but this (sub?)species occurs only in Macaronesia and it is safe to conclude that the record refers to a melanic form of Common Darter.

Common Darters account for seven of the 12 records in the ORS database prior to the First World War, but Red-veined Darter *Sympetrum fonscolombii*, a scarce migrant species, surprisingly featured in 1903 and 1911. The most unusual record for the beginning of the 20th century, however, comprised a Vagrant Emperor *Anax ephippiger* in Plymouth on 24 February 1903; a late winter timing has proved to be not unusual for this species, when small incursions, mainly on the south coast, have coincided with depositions of Saharan dust.

Perhaps the most outstanding of all of Devon's dragonfly records comprises three Orange-spotted Emeralds *Oxygastra curtisii* (two males) taken by the River Tamar near Gunnislake by O. G. Watkins in July 1946. This West European endemic was known elsewhere in Britain only from the Moors River, Hampshire, where it was last seen in 1963. There have been many searches along the lower Tamar Valley subsequently, but all have been in vain. There are still eminently suitable calm stretches of the river above a series of weirs, but perhaps the species suffered from toxins released from one of the many mines in the valley. There was also a report of Orange-spotted Emerald from the unlikely location of Braunton Burrows in about 1830, but this was never authenticated.

Bob Merritt, a co-founder of the BDS, lived in Devon for most of 1965-1982. The county survey he initiated in 1977 produced records over the next six years from nearly all of Devon's hectads (10 km × 10 km grid squares). Merritt (1983) included a brief summary of the county's important dragonfly habitats and 5-km square grid maps of the distribution of the 26 species known at the time to be breeding in the county (a substantial increase from the 19 creditable species documented by Parfitt). Merritt corresponded with Watkins, but was reluctant to accept the records of some species following extensive field surveys made during 1965-82.

In 1988, the ORS initiated a project to gather data for important ('key') dragonfly sites. This was pursued in Devon with a concerted 'Key Sites Survey' in 1995, resulting an Inventory of Key Sites for use by countryside agencies, local authorities and land owners and managers (Smallshire, 1996). Sites with recent records of the scarcer species were targeted for surveys, during which breeding evidence was obtained, numbers estimated and the habitat

described, generally during two or three visits per site annually. Site evaluation methods were established, which now form a national standard. Surveys of Key Sites were repeated in 2005/6, producing an increase in the number of sites of national importance (i.e. with healthy breeding populations of Red List species) from eight to 13 and an increase from six to nine confirmed sites of local importance. However, these figures likely represent an increase in recording effort and awareness as much as improvements in the fortunes of dragonflies. Further concerted recording effort around the county was made for a second national atlas in the years up to 2012, the results being published in Cham *et al.*, 2014.

Over half (28) of the first 46 records in the ORS database relate to the Bovey Basin and its important dragonfly wetland sites. While Downy Emerald *Cordulia aenea* still has a stronghold here, sadly the Small Red Damselfly *Ceragrion tenellum* was last seen in 1984, prior to the site's destruction by ball clay extraction. The Bovey Basin remains important for dragonflies today, but the outstanding national importance of Dartmoor and the East Devon Pebblebed Heaths (EDPH) is now more fully appreciated.

The first record of another West European endemic, Southern Damselfly *Coenagrion mercuriale*, came in 1956 from the EDPH, followed by reports from two sites in the Blackdown Hills: Southey Moor in 1959 and Hense Moor in 1962. This is the only species of dragonfly in Devon that has legal protection, initially under the Wildlife and Countryside Act and subsequently following the EU Habitat Regulations. Concerted searches on the northern fringes of Dartmoor during 1995-2005 resulted in the discovery of Southern Damselfly at three further sites, two of which were on the very edges of open moorland, the third being in enclosed pasture. One of the EDPH colonies of this species, at Venn Ottery Common, went extinct around 1990, but was successfully re-established from New Forest stock in 2009. A similar attempt was made at Hense Moor in 2015, but this appears to have failed. The numbers at a long-established colony at Colaton Raleigh Common have declined from 2010 to barely detectable numbers, for no clear reason. All of the extant sites have been well-monitored by Dave Boyce (for Dartmoor National Park Authority) and RSPB/Lesley Kerry (EDPH sites).

Ruddy Darter *Sympetrum sanguineum* remains strangely scarce in Devon, despite being common in the adjacent counties of Dorset and Somerset. Variable Damselfly *Coenagrion pulchellum* occurs in the grazing marsh ditches of the Somerset Levels but its presence in Devon has never been verified, despite records in the Transactions of the DA from 1879 and 1976-80; this species, especially females, can be easily confused with the widespread Azure Damselfly *C. puella*. The Brown Hawker *Aeshna grandis* is surprisingly rare in Devon, although strangely Parfitt (1879) reported it as "abundant ... in counties including Devonshire, according to Mr Stephens". There have been only eight validated records of Brown Hawker, all since 1999 (and five in 2018-22). This species occurs close to the county boundary in Somerset and could be on the verge of colonizing Devon.

Warmer conditions in recent decades have enable species to spread within Britain and to colonize from the Continent. Scarce Chaser *Libellula fulva* was first seen in Devon in 2003 and has since bred at several sites and wandered to many more, becoming especially widespread during hot conditions in 2022 and 2023. Small Red-eyed Damselfly *Erythromma*

viridulum first appeared in Britain in 1999 and in south-east Devon in 2005, subsequently spreading as far as Plymouth. Red-veined Darters have increased, mainly as migrants but breeding has been recorded at Dawlish Warren (1995), South Huish Marsh (2003 and 2005) and Lower Bruckland Ponds (2006-7), while egg-laying was recorded in 2019 at both Clennon Valley Lakes and Meeth DWT Reserve and at Soar in 2022; the species possibly bred at Blackhill Quarry (EDPH) in 2020. Lesser Emperor *Anax parthenope* has been recorded on at least 30 occasions since the first in 2003, with pairs egg-laying at Squabmoor Reservoir in 2006 and at Soar in 2022. Vagrant Emperor has appeared on over 40 occasions and also more frequently in recent years, in part reflecting better awareness of rare dragonflies, especially among birdwatchers; in autumn 2013 a pair were seen at Bovey Heathfield and egg-laying was seen, only the second instance of this in Britain, and further egg-laying was seen at Soar in spring 2023. In contrast to the significant northward range expansions that southern species have made within (and into) Britain in recent years, there is concern about the future of cold-adapted upland and boreal species like Common Hawker *Aeshna juncea* and Black Darter *Sympetrum danae*; such species may be lost from Devon as a result of climate change.

A Wandering Glider *Pantala flavescens* near Otterton in 2015, a Common Clubtail *Gomphus vulgatissimus* on the River Otter in 2017, a Norfolk Hawker *Aeshna isocetes* at Exminster Marshes in 2018 and a Southern Migrant Hawker in 2021 bring the total number of species recorded in the county to 39, of which 30, with the addition of Norfolk Hawker at Slapton Ley from 2022, are known to have bred since 2000 (three more than recorded by Merritt, 1983).

References

- Cham, S., Nelson, B., Prentice, S., Smallshire, D. & Taylor, P. (eds.). 2014. *Atlas of Dragonflies in Britain and Ireland*. British Dragonfly Society & CEH Wallingford.
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Species Accounts

The species accounts below aim to summarise records up to the end of 2023, focussing on the main areas of occurrence and sites holding less common breeding species. Numbers are given (where the records contain these details) to indicate the relative abundance of species, but it should be remembered that these generally do not reflect the numbers that emerge from breeding sites; where useful data on productivity exist, exuvia counts are given. The sequence and species names used are those adopted by the British Dragonfly Society; alternative vernacular names are given in brackets.

Emerald Damselfly *Lestes sponsa* (Common Spreadwing)

Fairly common and widespread at standing waters

Occurs at many sites with abundant rushes (*Juncus* species), including those at lower moorland elevations. National trends suggest that this is one of a small suite of species showing a decline over the 50 years from 1970; along with Common Hawker and Black Darter, Emerald Damselfly shows the greatest decline in site occupancy (a surrogate measure of population) in England, suggesting a common cause that is related to climate change. Counts exceeding 30 have come from Bovey Heathfield (50), Chudleigh Knighton Heath (40), Meeth Ball Clay Works (125), Petrockstowe Ball Clay Works (75), Smallhanger (100+), Stover CP (91) and Wixenford Quarry (Plymouth, 50), but none can match the estimated 800 at Coombeshead Rewilding in 2023. Adults emerge typically between early June and mid-August (earliest on 21 May 2015 at Aylesbeare) and persist into September (latest on 2 October 2019 at Leftlake Mires).

Banded Demoiselle *Calopteryx splendens*

Common and widespread at slow-flowing waters

Found along the Rivers Axe, Carey, Clyst, Creedy, Culm, Deer, Exe, Lyner, Mere, Mole, Okement, Otter, Sid, Tamar (whole length), Taw, Torridge, Waldon, Weaver and Yeo. These include the lower sections of large rivers and, where conditions of suitable, the upper reaches and tributaries. Small numbers also occur in the inflows to both the Higher and Lower Leys at Slapton, believed to be the only breeding site in South Devon between the Exe and the Tamar. Often wanders away from its breeding sites to standing water such as at Dawlish Warren (five records, only one of them a male), Exeter Canal, Grand Western Canal, Lower Bruckland Ponds and Powderham Park, where breeding is unlikely. Absent from the Bovey Basin, although a male passed through Ventiford Ponds on 29 August 2021. Counts have included totals of about 100 or more in the lower Axe, Clyst and Otter valleys and Alphin Brook (Exeter). Flies from May (earliest 3 May 2001 at Countess Wear) to September (latest 11 October 1984 at River Axe).

Beautiful Demoiselle *Calopteryx virgo*

Common and widespread, mainly at fast-flowing waters

The highest counts – of 100 or more – have come from the Rivers Tamar and Torridge at Vealand and Volehouse Moor Nature Reserves, respectively, and the fringes of Dartmoor

(e.g. River Plym at Cadover Bridge, Meldon Reservoir and the River Tavy). Like the previous species, individuals often wander away from breeding waters and are often seen flying over unsuitable standing waters; for example, there have been at least six records from Dawlish Warren and a single record from Lundy on 29 August 1985. Flies from May (earliest 20 April at Lower Grays, Clayhidon, in 2011) to September (latest 10 October 2007 at Applethorn Slade).

White-legged Damselfly *Platycnemis pennipes* (Blue Featherleg)

Scarce along lowland rivers

Typically found accompanying Banded Demoiselles, but more localised. Recorded from the catchments of the Rivers Axe, Carey, Clyst (including the leat at Clyst St Mary), Culm, Deer, Exe, Otter, Tamar, Taw, Torridge and Yeo. It occurs in slow-flowing sections with beds of emergent marginal plants and adults congregate in tall bankside herbage, such as nettlebeds. The highest counts have come from the lower Axe Valley, with 163 in 1995 and 255 (17 emerging) in 2007. Unusually, one has been seen emerging from the River Exe just below the tidal limit at Countess Wear. Like the demoiselles, this species may wander some distance from breeding sites, including to standing waters like Exeter Canal (where it is seen regularly and breeding is possible) and Lower Bruckland Ponds. Flies from late May (earliest 3 May 2001) to mid-August (latest 16 September 2007 at Cowley Bridge, River Exe).

Small Red Damselfly *Ceriagrion tenellum* (Small Red Damsel)

Scarce and local in acidic bog pools on moorland and heathland

Known principally from the moorland fringes of Dartmoor, at Doetor Common (Doetor Mire/River Lyd/Walla Brook; maximum 80 in 1998), Gidleigh Common (Moortown Bottom; also a female in 2019 and seven in 2021 near Wallabrook Bridge, Scorhill Down), Leftlake Clay Works (discovered in 2008, when six seen), near Piles Copse (discovered in 2011), Smallerhanger (near Cadover Bridge, discovered in 2018, when 25 seen), the former stronghold at Smallhanger (the little remaining habitat there will be lost to clay-working in the not-too-distant future), Wigford Down and Yellowmead (Willsworthy). A male at Emsworthy DWT in 2022 was well away from the nearest known site.

In East Devon, occurs at Bicton Common (maximum 34 in 2005, but only three in 2020) and nearby Blackhill Quarry, pools at Bystock Pools DWT Reserve (maxima 110 in 1994, 60 in 1995 and 36 in 2017) and Colaton Raleigh Common (has increased and spread in recent years, with maxima of 39 in 2020 and 35 in 2021). Up to four were reported at Aylesbeare Common in 2021-2, with breeding likely.

In North Devon, formerly known from Merton Moors (1978 and 1981); until recently, the only North Devon site was old settlement lagoons at Meeth DWT Reserve, where small numbers persist (14 in 2006, ten in 2008 and 25 in 2021), but two were seen at a new site in 2019 in at the DWT Beaver enclosure at Boldventure and in 2022 a large population was found nearby at Coombeshead Rewilding ponds, with at least 294 counted at six ponds; equally surprising was an estimated 580 at Coombeshead in 2023. Also surprising was the discovery of small numbers at Godborough, Bideford, in late July 2022 and further sightings

of singles in 2023 elsewhere in NW Devon near Brandis Corner (a garden pond!) and the Hartland peninsula at East Titchberry.

Apart from Coombeshead, the largest counts have come from Bystock Pools DWT Reserve (110 in 1994), Doetor Mire (80 in 1998); Moortown Bottom (200 in 1998 and 1999) and Smallhanger (170 in 1995 and 221 in 2005).

Occasional records from other Dartmoor sites have included: Burrator Arboretum (2002); Crownhill Down (2008, including a mating pair, but the site was subsequently lost to Hemerden Mine); Gutter Tor Mire (2002-3); Lee Moor (2005: two each at Big Pond and Whitehill Corner); Lydford Station (Railway Ponds – 20+ in 1993 and 1995, but no records since 2006; 70 were also found on the adjacent moor WSW of the old station in 1993); Narrator Brook (1997); Prewley Moor (small numbers in 2005-6, but not since); River Erme near Piles Copse (two in 2011); and Wigford Down (near Urgles: a few in 2006). In East Devon, there are isolated records from Aylesbeare Common (in 1956, on 28 June 1965 and four on 7 July 2007); Venn Ottery Common (1978); Woodbury Common (mating pair in 2009, probably from Colaton Raleigh Common) and near Squabmoor Reservoir (a few in 2018, probably from Bystock Pools DWT Reserve).

Old records come from the Bovey Basin at 'Bovey Tracey' (1921, 1925 and 1926); Stover (1950); Bovey Heathfield (1959); Chudleigh Knighton Heath (1965); Little Bradley Pond (1978-84, but boggy pond lost to natural succession); and a site 1.5km SSE of Chudleigh Knighton (1979 and 1981, but lost to Whitepit Quarry clay working in 1984).

Flies from June (earliest 7 June 2011 at Bystock) to early September (latest 1 October 1996 at Doetor).

Southern Damselfly *Coenagrion mercuriale* (Mercury Bluet)

Rare: present at 7 sites in Dartmoor and EDPH

In national and international terms, Southern Damselfly is the rarest dragonfly breeding in Devon. It and its habitats are protected by the Bonn Convention for the Conservation of Migratory Species of Wild Animals, the Berne Convention on the Conservation of European International Wildlife and Natural Habitats (1979), the EC Habitat and Species Directive (1992) and the Wildlife and Countryside Act (1981). It is also listed as Rare (Category 3) in the British Red Data Book and was a subject of the UK Biodiversity Action Plan (1994). The Habitat and Species Directive has resulted in it being one of the qualifications for inclusion in designated Special Areas of Conservation, and the UK BAP led to research that resulted in a better knowledge of the species and its requirements than any other damselfly!

In Devon, it occurs at spring- and seepage-fed heathland streams and valley mires in water that is less acidic than normal at these locations, as it picks up dissolved base rich materials, is relatively warm and flows all year. Such sites are rare in Britain and typically very limited in extent, making the species highly vulnerable to reductions in habitat condition and hence local extinctions. Generic threats include heathland loss and fragmentation, undergrazing and consequent scrub encroachment. One Dartmoor site (Tor View Moor) is on enclosed farmland, while the other Devon sites are all in open heathland commons.

There are three extant colonies of Southern Damselfly on the East Devon Pebblebed Heaths. After records at Aylesbeare Common in 1956 and 1965, up to five were reported from a Black Bog-rush mire (NVC M14 *Schoenus nigricans* – *Narthecium ossifragum* mire community) in the RSPB reserve in most years during 1977-1992, apart from 13 in 1986. Thereafter, following a controlled burn, brush-cutting of Purple Moor-grass tussocks and the introduction of fenced cattle grazing, suitable habitat increased and peak transect counts rose dramatically to reach 165 by 2001. Following expansion to a newly suitable runnel in 2007 (burnt by RSPB three years earlier), the peak count rose to 204 in 2008 (34 in the extension area); numbers have been between 53 and 198 since, apart from a low of 15 in 2014.

First recorded at Colaton Raleigh Common in 1963, with up to 56 there during 1977-1989. Annual counts were made from 1991 and a formal transect established. Numbers peaked at 133 in 2005, but faltered after 2010, reducing to single figures since 2016, with only a single male in 2020 and no more than two in 2021. This has been in spite of fenced cattle-gazing around the stream where the colony was originally focussed and the spring-fed flushes on the slope above where the damselflies spread to. There are concerns about the possible deterioration in micro-habitat quality on the slope in recent years, as well as concern over the reduction in stream flow following the repair of a leak in a pipe upstream that feeds water to Bicton Hall.



After records at Venn Ottery Common in 1979 and 1983, a colony there died out after the last was seen in 1990, apparently due to natural succession in the absence of grazing. Remedial management took place after the establishment of a DWT nature reserve, using techniques developed at Aylesbeare, and the UK's first licenced dragonfly re-establishment took place here in 2009 under the auspices of the Biodiversity Action Plan Steering Group and Liverpool University. This was originally planned for 2007, but due to a sudden reduction in water flow the release was aborted and 52 adults – 17 males and 35 females – brought from the Beaulieu area of the New Forest had to be released at Venn Ottery. Although the Aylesbeare Common colony lies just 2km to the south-west, natural re-colonisation from the increasing population there had not happened and studies elsewhere had shown that lifetime movement of mature adults was rarely over 500m. Studies had also shown that the genetic variability was weak in Devon, so it was decided to introduce more diversity from Hampshire, in the hope that the population might eventually mix with that at Aylesbeare. With better conditions in 2009, 500 adults were released in five batches, but it is notable that 23 adults also emerged from the 2007 release. Wisdom had it that the species matures in two years; indeed, none was seen in 2010 and the peak count in 2011 was 42, but two were seen in 2012, indicating that a few had matured in either one or three years. The species had clearly broken the biennial pattern, as transect counts during 2013-21 peaked at 98, 17, 98, 42, 62, 27, 39, 38 and 23.

Southern Damselfly also occurs at a few sites fringing Dartmoor, where it was discovered as recently as the 1990s following targeted searches funded by Dartmoor National Park

Authority. DNPA has also funded systematic adult and larval counts in most years, the results of which have fed back into habitat management where necessary.

The first Dartmoor site was found in part of an extensive Rhôs pasture system at Tor View Moor, near Whiddon Down, in 1995. Peak transect counts ranged from eight to 41 during 1995-2004, then increased following management work by DNPA to 239 in 2008 and 302 in 2015. Although requiring DNPA effort to maintain good habitat condition at this small site, the management has resulted in good damselfly numbers.

Four km to the south-west of Tor View Moor, a colony was found in 1998 on the edge of Gidleigh Common, at Moortown Bottom. The damselflies were along three small watercourses flowing across an area of Gorse and grass where livestock had traditionally been fed in winter. With changes in livestock pressure, this site has subsequently needed considerable human input to replace the grazing and trampling effects of cattle, ponies and sheep. Peak transect counts of over 100 were made in 14 years during 1998-2019, and over 200 in seven years, with an all-time high of 292 in 2008.

Further targeted survey led to the discovery of a colony over 11 km from Moortown Bottom, on the north-west fringe of Dartmoor at Prewley Moor. This easily accessible, sheep-grazed site has a series of small streams (NVC M29 runnels) flowing north-westwards from springs below a bracken-clad hillside. Uniquely for Devon, until recently this site also held small numbers of Scarce Blue-tailed and Small Red Damselflies. Peak transect counts have exceeded 100 each year (except for 44 in 2016), with an impressive high of 361 in the fine summer of 2006. Some dredging work was implemented in August 2016 to remove silt and vegetation and improve the conditions in a drain that intercepts most of the hill streams (unfortunately, this led to the loss of adjacent boggy areas that hosted the Scarce Blue-tailed and Small Red Damselflies).

A scrubby extension of Prewley Moor across the A386 road at Lower Prewley has held small numbers since 2008, with peak counts of 18 in 2011 and 36 in 2009. Presumably resulting from wandering individuals from the Prewley Moor colony some 500m away, it has benefitted from scrub management to maintain an open channel for the species, which is a critical element of the habitat condition.

In the Blackdown Hills, Southern Damselfly was recorded in springline mires at Southey Moor (Chuchstanton), just across the border into Somerset from Gotleigh Moor, on 14 July 1959 and at Hense Moor on 29 June 1965. However, subsequent searches failed to find the species, which was probably lost as a result of a lack of grazing and/or scrub encroachment of the boggy runnels (the fate of many springline mires in the Blackdowns). Following eight years of scrub control and grazing management under Higher Level Stewardship, Hense Moor was assessed early in 2015 as being suitable for Southern Damselfly re-establishment and under licence, 460 were transferred from the New Forest in June of that year. Unfortunately, this second translocation targeted under the UK Biodiversity Action Plan failed, presumably due to unsuitable or insufficient micro-habitat to support the species.

Flies from late May (earliest 25 May 2010 at Colaton Raleigh Common) to mid-August (latest 3 September 1998 at Moortown Bottom).

Azure Damselfly *Coenagrion puella* (Azure Bluet)

Very common and widespread

Most abundant in well-vegetated ditches, ponds and the edges of lakes, where egg-laying tandem pairs can be seen in large numbers. Counts at Stover CP have exceeded 1000 on occasions, with over 1000 estimated on 2 June 2020 (about 800 of these were attracted to the luxuriant growth of pondweed in the lake) and 2180 in 2023. About 1000 were estimated to be at Exminster Marshes on 7 July 2019. Flies from late April (earliest 5 April 2016 at Prawle) to August (latest 19 September 2015 at Ash).

Common Blue Damselfly *Enallagma cyathigerum* (Common Bluet)

Very common and widespread

Most abundant at large ponds, lakes, reservoirs and canals, but sometimes on slow-flowing waters. The species disperses widely, though, and may turn up anywhere. Males of this species are the most likely blue damselflies to be seen well out over water, perched on surface vegetation or patrolling close to the surface. Peak numbers are typically later in the summer than Azure Damselfly, with transect counts totalling 400+ in 2010 at Stover CP and 785 estimated there on 12 August 2020. Up to 200 have been recorded on Lundy, where the species has bred. Flies from May (earliest 20 April 2015 at Lower Bruckland Ponds) to September (latest 11 October 1978 near Sparkwell).

Red-eyed Damselfly *Erythromma najas* (Large Redeye)

Fairly common but very localised at standing waters with floating vegetation

Known mainly from the Bovey Basin, the lower Exe Valley and Grand Western Canal, especially where there are water-lilies, on which the males sit in strategic positions.

In the Bovey Basin, large numbers have been counted at fishing ponds at Rackerhayes, Kingsteignton, since 1978, with 'hundreds' in 1989, 220+ in 1995, 173 in 2005 and 500+ in 2021. The main site with public access is Stover CP, where over 100 (1995 and 2006) were noted on the lake until the loss of water-lilies around 2009; no more than six were seen during 2011-17, when it was mainly restricted to a small area of non-native water-lily at the edge of the lake and in surrounding ponds; perhaps resulting from an improvement in water quality, there was a rapid growth of pondweed in the lake after 2018, resulting in counts of 119 in 2020 and 436 on 14 June 2021. In addition, small numbers breed at Abbrook Pond (21+ in 1992), in Decoy CP at Decoy Lake (100+ in 1992, since when a maximum of 37 in 2023) and Magazine Pond (20 in 1992 and 2023), Eddison Pond (20+ in 1992, but no more than five since), Gallows Cross SUDS ponds, Kingsteignton (20 in 2020, 12 in 2021, but none since 2022), Little Bradley Ponds (1978, up to five 1992-2021, with egg-laying in 2018, rising to 22 in 2022 and 43, with six pairs egg-laying, in 2023), Netherexe Pond (at least 30 in 1995 and 2006; also present at the former pond at this site, known as Key Transport, in 1978 and 1986), Rackerhayes (220 on 27/5/91, 100-500 in 2005-06, 516 on 13 June 2021) and Ventiford Ponds (private ponds close to Stover created at a site previously known as Alder Park, where 20 were recorded in 1995; noted at the new ponds from 2013, with maxima of 49 in 2020, 93 in 2021 and 125 on 27 May 2022). Occasional records have come from Bovey

Heath (2009, 2022), Bradley Pond (1987), East Golds (Kingsteignton, 2005 and 2021), Sawmills Pond (1990-2005) and West Golds (1992). It was formerly present (1982) at the Centrax Pool, Newton Abbot, until the site was lost to development.

In the lower Exe Valley, Red-eyed Damselfly is found along the whole length of Exeter Canal, with 100+ near Countess Wear Sewage Works alone in 2009 and 320 in 2023; its presence has continued despite attempts to control Fringed Water-lily and regular pondweed cutting to maintain a boat channel. Small numbers, no doubt originating from the canal, have been found on the wider ditches of Exminster Marshes in recent years, and 16 were found on the lagoon there in 2006. Small numbers have also been seen on the River Exe, Harpers Fishing Ponds (Double Locks), Matford RSPB pools (2005), Dawlish Warren (2013 and 2023), Hazelwood Holiday Park (2023), Topsham (2017) and Dart's Farm (since 2022).

It was first recorded along the Grand Western Canal in 2004 (20), with transect counts along the whole length totalling 118 in 2006, 502 in 2010 and 215 in just two sections in 2018. There are isolated breeding colonies in East Devon at Squabmoor Reservoir (up to 20 since 2005) and Lower Bruckland Ponds (maximum 33 in 2008), while a single male was at Blackhill Quarry in 2020 and two were at Bystock in 2023. In North Devon, a small breeding population was reported near Beaford in 2008 and at least six were at Lake, near Shebbear, in 2022; both sites are some 50km W or NW of the nearest known sites.

Flies from May (earliest 3 May 2001 at Exeter Canal) to August (latest 18 September 1982 at Rackerhayes).

Small Red-eyed Damselfly *Erythromma viridulum* (Small Redeye)

Recent colonist, breeding at standing waters across southern Devon

This species has shown a dramatic expansion in range in Britain since it was first recorded in Essex in 1999. It soon reached south-west England, with the first in Devon in 2006 (maximum 54) at Lower Bruckland Ponds, where there were 105 in 2008 and at least 310 on 20 July 2018. Next it appeared at Exeter Canal in 2009 (15, with 25 in 2014, 35 in the section by Countess Wear Sewage Works in 2019, and over 600 on 17 July 2022), Dawlish Warren in 2010 (maximum of 20 in 2014), Seaton Wetlands in 2013 (now in several locations), Harpers Lakes (Double Locks) in 2015, a pond in Sidbury in 2016 and the main drain at Exminster Marshes in 2018 (15).

The first records west of Exeter Canal came in 2017, with records from three Bovey Basin sites, including 42 at Little Bradley Ponds (with 50+ there in 2018, 61 in 2020) and eight at Ventiford Ponds (with 27 there in 2018 and 71 in 2022). Noted in 2018 at four other Bovey Basin sites, including the first records for Stover CP (seven in August 2018, rising rapidly to 100 in 2019 and 577 in 2022). Surveys at Rackerhayes found 311 on 24 August 2021.

In East Devon, 100+ appeared at Squabmoor Reservoir on 22 July 2018, but only ten were present three days later, suggesting that most had moved on quickly. Well outside the established range, it was first found in 2018 at Shobrooke Park fishing lakes (30+) and Clennon Valley Lakes (40+) and in 2019 at Drakes Reservoir, central Plymouth (several). In 2020, three were on the coast at Starehole Ponds, Soar, from 11 August to 1 September; in

2021 small numbers were noted at new sites at Bishopsteignton and Bolberry; and in 2022 there were 30+ at Gammaton Reservoirs, Bideford, 19 at Southdown Valley, Soar, and singles at Aylesbeare Common, Langtree and Slapton Ley.

Flies from late June (earliest 22 June 2023 at Ventiford Ponds) to early September (latest 16 September 2007 at Lower Bruckland Ponds).

It is very likely that other breeding sites exist across the county, given the frequent occurrence of suitable ponds with floating pondweed or algae, and further spread seems inevitable. However, the species is easily overlooked and the use of binoculars is almost essential to detect and identify this and the preceding species when they are out over the water.

Blue-tailed Damselfly *Ischnura elegans* (Common Bluetail)

Common and widespread in standing and slow-flowing waters

This, one of the most widely recorded damselflies in Britain, has a low habitat tolerance threshold and hence tends to be commonest at wetlands with relatively poor water quality. It is generally scarcer at the higher quality sites, so it is perhaps no coincidence that the maximum recorded at Stover CP – 100 in 2005 – coincided with a period of concern over water quality. Up to 20 adults have been seen on Lundy, where the species has bred. Flies from late April (earliest 20 April 2011 at Slapton Ley) to early September (latest 11 October 1978 near Sparkwell).

There may be link between a significant decline in site occupancy in England and the recent widespread use in arable crops of neonicotinoids, which have been shown experimentally to reduce the productivity of this species.

Scarce Blue-tailed Damselfly *Ischnura pumilio* (Small Bluetail)

Scarce and local

This Red Listed specialist of early successional stages has nationally important populations in Devon. Its often ephemeral occurrences and a need for sparse vegetation cover make its long-term conservation rather difficult. Historically, it was known principally from both working and former clay pits in the Bovey Basin, Lee Moor and Meeth-Petrockstowe areas, where its current status is uncertain but certainly less favourable than previously. Scarce Blue-tailed Damselfly was discovered during the 1990s at a number of muddy streams and ponds in Dartmoor moorland, especially where livestock trampled ('poached') bankside vegetation at crossing points; with reductions in stocking densities, especially in winter, such sites may now be less suitable and some have likely lost the species.

Dartmoor breeding sites include the following:

Cadover Bridge-Blackaton Cross area: the old Brisworthy clay settlement lagoon at Cadover Bridge (first recorded in 1978; maxima 45 in 1993, 77 in 2005, 51 marked in 2006, 25 in 2010 and 2018) and Blacka Brook (maximum 16 in 2005) up to Blackaton Cross (35+ in 2018); presumed wanderers (four) from Cadover were found nearby at Shaugh Moor 2019.

Corndonford Bog: up to five during 1995-2006.

Doetor Common: small numbers during 1995-98.

Gutter Tor Mire-Sheepstor: discovered in 1995, maximum 40 in 1999, but not recorded since.

Lee Moor claypits complex: Cholwich Town Waste, Quick Settling Ponds and Tory Brook in 1996-7, Whitehill Corner in 1996 and 2005, Portworthy and Refinery Settling Pond in 2005, with over 100 at the latter; these records pre-date the cessation of mining and pumping and the species may no longer occur here, although it persists in the contiguous Cadover Bridge-Blackaton Cross area.

Legis Mire: small numbers in 1995, 1998 and 2005.

Lud Brook Head, Ugborough Beacon: recorded in 1995, 1998 and 2005.

Lydford Station old railway ponds: 'very good numbers' recorded in the late 1970's-early 1980's, 30 in 1988-89, only six by 1993, when the favoured area had become overgrown, and only four in 1995; seven caught and marked in 2006 is the only subsequent record.

Prewley Moor: small numbers during 2005-15, with at least six in 2009 and four males marked in 2006.

Simon's Lake, Sherberton Common: small numbers in 1995 and 1997.

Small Brook, near Avon Dam: up to three in 1995 and 2005.

Smallhanger Waste: the first records at this former stronghold were during 1978-80; counts include 54 in 1995; 20 in 2001; a maximum of only seven during 2002-5; 30 in 2006, including 29 marked in a study; 20 in 2010; and no more than ten subsequently as the reworked area has expanded.

Walla Brook, Riddon Ridge: recorded during 1995-2006, with 95 in 1999.

Whitchurch Down: small numbers during 1986-98.

Wigford Down (streams on NW fringes): recorded occasionally since 1995, with a maximum of 10 in 1998 and 2018.

Vixen Tor Mire: small numbers in 1995 and 1998.

Isolated Dartmoor records have come from Burrator Arboretum (2004), Challacombe Farm (2006), Cornwood (just off the moor, 1978), Mary Tavy Reservoir (just off the moor, 1978) and Meldon Aplite Quarry (2018-9, egg-laying seen in 2019).

In the Bovey Basin, permitted surveys have resulted in the discovery of two colonies in working ball clay pits. At Chudleigh Knighton Clay Pit, 80 were seen in 1994 and 31 in 1996, when reworking destroyed the breeding area; 16 (11 males) were translocated to Little Bradley Ponds on 6-7 July 1996, but none was seen subsequently (although there were records there in 1999). At East Golds, up to six were seen in 1995-6 and two males in 2021. There have also been a few records of small numbers from the fringes of other clay pits, including Whitepit Quarry (three in 2006), as well as at nearby ponds at Chudleigh Knighton Heath (two immature males in 2006), Finlake (two immature males in 2009), Bovey Heathfield (one or two at temporary puddles in 2005-6) and Little Bradley Ponds (in 1980, 1982 and two males on 21 August and a female on 28 August 1999). An old record from Stover in 1970 indicates the early presence of this species in the Bovey Basin.

Following a record from Orchard Meadows, Saltram, Plymouth in 1996, there were records during 2001-7 from a colony almost at sea level nearby at Wixenford Quarry. There were 18 on 30 July 2007, including several fresh, immature specimens and two exuviae, suggesting a second generation.

In North Devon, it has been recorded from old ball clay workings at Meeth Quarry (68 in 2006 and 23 in 2008 in systematic surveys, and last seen in 2016; now flooded and a DWT Reserve) and nearby at Petrockstowe Ball Clay Works, where nine were seen in 2005, but it is doubtful if the species persists at either site. Isolated records have come from Bridgerule Mill in 1990 and 1992 and ponds at Welcome (up to seven in 1992 and 1998, with breeding proven) and Heddon Valley, Exmoor, during 2009-11, nearly 40 km NE of the nearest known site.

Flies from June (earliest 19 May 2011 at Heddon Valley) to August. The latest records have both been on 31 August and are suggestive of a second generation: a well-documented female in 2011 at Tor Woods, Salcombe (perhaps of Continental origin and coinciding with records on the Norfolk coast around the same time), and in 1996 at Saltram (near to which a possible second generation was recorded at Wixenford).

Large Red Damselfly *Pyrrhosoma nymphula* (Large Red Damsel)

Common and widespread in standing and slow-flowing waters

Typically the first species to emerge in lowland areas in spring, this species also breeds commonly in ponds and both blanket and valley bogs in moorland, where the flight season is delayed. Maximum counts at Stover CP of 200+ in 2000, 100+ in 2018 and 106 in 2020. Flies from April (earliest 4 April at Stover, although anecdotal evidence of late March at Little Bradley Ponds) to early September (latest 23 September 1978 at Bystock).

Southern Migrant Hawker *Aeshna affinis* (Blue-eyed Hawker)

Vagrant: one record

A photograph taken of a very blue hawker at East Soar on 6 September 2018 wasn't quite good enough to enable this species to be added to the Devon list, but the same cannot be said of a male photographed at Beer Head on 2 August 2021 (image: Steve Waite).



Southern Hawker *Aeshna cyanea* (Blue Hawker)

Common at lowland standing waters, including garden and woodland ponds

Southern Hawkers are widely distributed across Devon, including the moorland fringes. This large, brightly-coloured dragonfly often attracts attention when a territorial male 'challenges' a human intruder, hovering close by. Females may be watched at close quarters egg-laying at the edges of ponds. Although most adults are seen at breeding sites from July until October or November, they emerge during late May-July and move to woodland to feed and mature and are often seen hawking in woodland rides and glades. Emerges from June (earliest on 23 May 2009 at Stover), flying at territories mainly from July to October, with some into November (latest 12 December 2006 at Ernesettle). On Lundy, one was seen on 30 August 1999 and two during 12 August-26 September.

Brown Hawker *Aeshna grandis*

Rare visitor: eight records

Although Brown Hawker is quite common just over the border in Somerset and Dorset, its rarity in Devon (and Cornwall) is an enigma. Singles were at Little Bradley Ponds on 26-28 August 1999; the Grand Western Canal on 6 July 2018 and 3 September 2021 (the canal is a good route for colonisation from known sites a few kilometres over the border near Taunton, Somerset); in a garden at Manaton in 2019 (probably in August); at Roborough (near Torrington) on 11 July 2020; in a garden at West Hill on 1 August 2021; and at Godborough, Bideford, on 5 July and over Badgworthy Water above Malmsmead on 11 July 2022.

Common Hawker *Aeshna juncea* (Moorland Hawker)

Fairly common on moorland, scarce in lowland heathland

Records of this species are marred by confusion with the very similar and much more widespread Migrant Hawker, although this is a large and powerful species and clearly does wander widely, especially across its preferred moorland habitat. Most of the confirmed Common Hawker records come from the uplands of Dartmoor and, to a lesser extent, Exmoor, where the species inhabits acidic ponds and open water in valley mire and blanket bog. It is also known from ponds and boggy areas remaining from old clay and tin workings around Dartmoor. National trends suggest that this is one of a small suite of species showing a decline over the last 50 years; along with Emerald Damselfly and Black Darter, Common Hawker has declined in site occupancy (a surrogate for population) in Britain, implying a cause related to climate change.

Dartmoor blanket bog sites include: Cowsic Head (1978); Cramber Pool (2010); Plym Head (1984); Quickbeam Hill (Petre's Pit, 1986 and 2020); Skir Hill (1986); and Taw Marsh (1978 and 1996). Records from these remote, high altitude areas are sparse, due to access difficulties. There are more sightings from the more accessible lower mires and pools, mainly around the moorland fringe, including those associated with old clay works and tin streaming. The main sites include: Blackabrook-Blackaton Cross-Lee Moor area (maximum 16+ in 2005, breeding in 2010, still three in 2018); Blackaton Brook (Raybarrow Pool-Shilley

Pool-Kennon Hill, 1977, 1986, 2011); Burrator Arboretum (1977, 1987, 2002, 2005); Cadover Bridge area (1978-2001, breeding in 1995); Gidleigh Common (Moortown Bottom and Walla Brook, 1996-2005); Haytor Quarry (1978-2004, but none reported since); Leftlake Mires (up to six in 1985 and 2008-19); Lydford Railway Ponds (1978-2001, with egg-laying in the last year); Raybarrow Pool-Kennon Hill (1977, 1986); Red Lake China Clay Works (1977-2018); Small Brook (near Avon Dam, 1995-2016, with egg-laying in 1995); Smallhanger (1978-2012, with up to 40 recorded and breeding evidence in eight years, but the site has been largely lost to reworking since); and Statt's Bridge (1996, 2012-7, mating in 2016).

Less frequently recorded Dartmoor sites include: Bellever (1983), Blackslade Mire (2016), Boldventure (near Chagford Common, 2003), Chagford (1950), Coombe Down (1978 and 2017), Cramber Pool (2019), Crownhill Down (breeding in 2008, site destroyed by Hemerdon Mine), Cordonford (2002), Dart Valley (Hannaford Manor, 1982), Emsworthy DWT Reserve (2016-17, egg-laying in 2021-22), Fernworthy area (1950, 1981, 1983), Foggintor Quarry (1982), Hanger Down (1978), Harford (Tor Rocks Quarry, 1981 and 1988), Headon Down (2011), Holming Beam (2019), Houndtor (Hedge Barton, 1978), Huntingdon Warren (1979), Lee Moor (1989), Lud Brook Head (2005), Meldon Reservoir (Vellake Corner, 2003), Merrivale Quarry (1982), Newbridge Marsh (2002), New Waste (1988), Nun's Cross (2016), O Brook (2015), Pixie's Garden Common (Ramsley, 2005), near Postbridge (2012), Prewley Moor (2005, 2012), Quick Settling Ponds (Lee Moor, 1997), Rattle Brook Peatworks (2019), River Lyd (High Down, 1995), Swincombe Valley (1978), Upper Erne Valley (2009, 2011), Thornworthy (1981), Vogwell (2012), the Walkham Valley (Bedford Bridge 1983, Grenofen 1978 and Heckwood Quarry 1980-1), West Blackdown (1981, 1990 and 1995) and West Glaze Brook (2016). Perhaps a wanderer from Dartmoor, a male was photographed in 2012 at Grenoven Wood in the lower Tamar Valley.

There are many fewer records from Exmoor than from Dartmoor, probably due to the poorer condition of the blanket bog – although there have been efforts to restore bogs on both moors in recent years, no doubt to the benefit of this species and Black Darter. Exmoor reports come from Bray Reservoir (1992), Challacombe Common (1999), Farley Hill and Farley Water (1982), Heddon Valley (2009) and Litton Water (1968), while the species occurs just over the Somerset border in the Pinkery Pond and Squallacombe areas.

Other records from North Devon have come from Braunton Burrows (1979), Brendan and Vealand Fen (an emergent in 2009); Bude Aqueduct (1995), Coombe Mill Pond (2007), Meeth Quarry (2010-11), Petrockstowe Ball Clay Works (Courtmoor Quarry lagoons, 2005), Sterridge Valley (2009), Witheridge Moor (2006-23) and Winkleigh (Wheatland Farm, 2009). There is an isolated record from the Grand Western Canal (2005).

Ponds in the Bovey Basin heaths are generally not acidic, due to the neutralising effect of the underlying ball clay deposits, but nevertheless Common Hawker seems to have a tenuous foothold here. There are breeding records from Bovey Heathfield (2009-10, with others seen in 1988 and 2008-20), Chudleigh Knighton Heath (1993-2012, but not since) and at Stover CP (records in 1978, 1982, 1985, 2002, 2007, a territorial male in 2009 and a mating pair in 2010). Nearby, isolated reports from Bradley Manor (Newton Abbot, 1985),

the old Key Transport Pond (now Netherexe Pond, 1978), Little Bradley Ponds (1978, 1992 and 2012) and Rackerhayes (1975 and 1985). There were records from Haldon Forest during 1979-95, with evidence of breeding at two different sites in 1989 and 1995, but no records since then. Surprisingly, there are no breeding records from heathland ponds in the EDPH, although there are reports from Aylesbeare Common (in 1977, 1994, 1996, 2010, 2011, 2013-4 and 2016), Bicton Common (1977, 1981 and 2019), Venn Ottery Common (1979, 1983 and 1987) and Woodbury Common (2010).

Reports from the south Devon coastal fringe, at Seaton Marshes, Slapton Ley, Wembury and between Exeter and Dawlish Warren, must carry elements of doubt, due to the abundance of Migrant Hawkers in these areas, although one was confirmed at Dawlish Warren in 1994. The same might apply to records of three singles on Lundy in September-October 2002-8.

Emerges from late June (earliest 6 June 2011 at Witheridge Moor), flying until September (latest 11 October 1978 at Smallhanger).

Migrant Hawker *Aeshna mixta*

Fairly common lowland breeder and migrant

Prior to 1990, Migrant Hawkers were largely restricted to sites within 15 km of the south coast. Since then records have come from most parts of the county, although only from the lowest fringes of Dartmoor (e.g. Smallhanger). Tolerating waters with elevated conductivity and salinity levels, the species can be abundant amongst emergent vegetation around ponds, lakes and canals, and in reedy ditch systems in coastal marshes. Counts of over 20 have come from Goosemoor, Otter Marshes, Slapton Ley, South Huish Marsh and Stover CP, with maxima of 55 at Grand Western Canal (2005), 60 at Exminster Marshes (2005) and 73 at Seaton Wetlands (2001). Presumably still also occurring as a migrant, numbers can often be seen at coastal locations away from water, sometimes flying over the sea. Up to three have been seen on Lundy. Flies from late July (earliest 11 July at Dawlish Warren in 2020) to early November (latest 18 November at Broadsands in 2005 and Dawlish Warren in 2006).

Norfolk Hawker *Aeshna isoceles* (Green-eyed Hawker)

Rare visitor and breeder(?)

One frequented reedy drainage ditches at Exminster Marshes on 12-13 July 2018 (pictured). This species has expanded from its traditional East Anglian haunts in the last decade or so to North Kent, the East Midlands and RSPB Radipole Lake, Dorset. Sightings came from the Avalon Marshes, Somerset, and coincidentally in south Devon from Slapton Ley in 2022.

Up to nine were seen between 17 June and 29 July 2022, including mating pairs and egg-laying females on at least three occasions, with sightings concentrated in the area around Slapton Bridge, mostly around the dipping platform; up to nine were seen on 27 June. Given the multiple occurrences, it is possible that the species may have arrived and bred two years



earlier. In 2023, singles were seen near Slapton Bridge on 28 May and at the southern end of the Lower Ley in a garden at Torcross on the 30th, followed by five near the Slapton Bridge on 2 June and about 12 in the same area on 13 June. On 17 June, one was found in east Devon at Lower Bruckland Ponds.

Vagrant Emperor *Anax ephippiger*

Rare vagrant; has attempted to breed

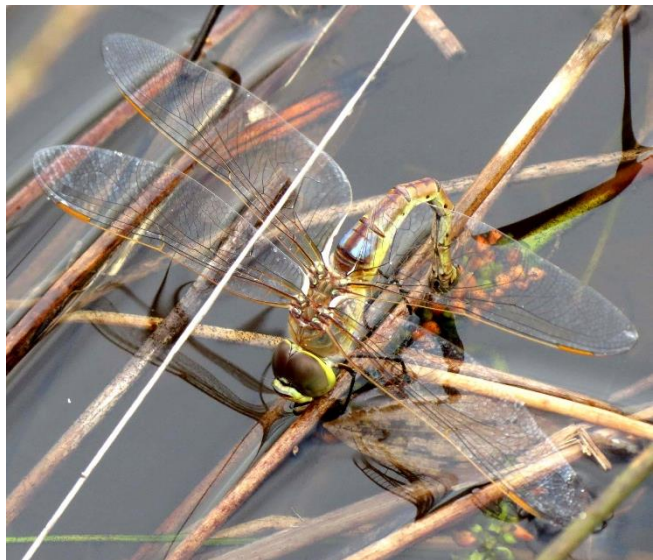
In keeping with most UK records, this wanderer from southern Europe or (more likely) North Africa has appeared on some 40 occasions, mostly in February-March and September-November, all but two in the last decade. Reports often coincide with warm, southerly airflows and sometimes 'Saharan' dust. Records (singles unless stated otherwise), in chronological sequence, are as follows:

1903: Devonport on 24 February, the first documented record.

1988: photographed in a garden at East Prawle on 8 November.

2011: found hanging on washing in a garden in Oreston, Plymouth, on 15 April, heralding an unprecedented spring influx in southern Britain; a male Lesser or Vagrant Emperor was over Exeter Canal by Exminster Marshes on 2 October.

2013: at and around a pond at Bovey Heath, two were first seen on 8 October, at least one of which was a male; a male remained to 2 November; a female was seen egg-laying on 18 and 26 October (image: Pauline Smale), the first such record in Britain since one in 2011 in Cornwall; and a female last seen on 12 November. Despite checks the following year, only Emperor Dragonflies were found to emerge.



2015: a male on Lundy on 13 October and a female found in an airing cupboard at Roborough, near Torrington, also on 13 October, presumably having been brought in with washing the previous day; one at Coypool, Plymouth, on 5 November.

2017: a female or immature (presumed to be of this species) was at Mansands Beach on 8 April and singles at Dawlish Warren on 13 May and 8 October.

2018: one at Dawlish Warren on 18 October.

2019: singles at Cornwood (presumed to be this species) on 21 February; Plymouth and Lundy on 25 February; between Stoke Point and Mothecombe Beach on 26 February; Soar Mill Cove on 27 February; Budleigh Salterton (presumed) on 11 March; Mutley Plain (presumed) on 18 March; in a garden at Cockington, Torquay, (presumed) on 25 March; Oreston on 26 March; and a female at Dawlish Warren on 16 October.

2020: a male was found on Lundy on 11 October and a moribund individual was found on the edge of Bideford on 5 November.

2021: singles at Prawle Point (caught in a moth trap) on the night of 9-10 September, Berry Head on 11 September and 30 October, Exminster Marshes on 8 October, Dawlish Warren on 3 November, Stoke Point on 7 November and Lipson, Plymouth, on 13 November.

2022: one at Preston Park on 10 September and a female at Bovey Heath on 17 September.

2023: a female or immature (possibly 2?) at Dawlish Warren on 10 April, a male in the dunes there on 13 April, a probable female on 10 May, a male and female on 11th, two males on the 13th and one male on the 20th; a female or immature at Slapton Ley on 24-25 April; single males were seen at Wembury on 12 April and 12 May, near Otterton on 20 May and at Mansands on 21 May; an exceptional five were at Southdown Valley Lagoons, Soar, on 24 May, comprising three males and a tandem pair ovipositing, with one male remaining on the 25th and 4 June; coincidentally, at least four were on Lundy on 24 May with at least two males remaining on the 25-26th. Later in the year, singles were at University of Plymouth on 12 October, Sticklepath, Barnstaple, on 17 October (dead) and at Sidmouth Croquet Club on 19 November.

In addition, there have been occasional reports of dragonflies likely to have been this species, especially those 'out of season'. Individuals were seen in the dunes at Dawlish Warren on 28 April and 16 May 2011, Paignton on 12 November 2013, Exeter on 7 April 2017, Dawlish Warren on 3 November 2019 and The Barbican, Plymouth, on 11 January 2023.

Emperor Dragonfly *Anax imperator* (Blue Emperor)

Common resident; breeds widely in standing waters

Widespread across the county, there have been range extensions to some upland Dartmoor and Exmoor sites in recent decades, in line with very significant increases in Britain over the last 50 years. Although this species is highly territorial at breeding sites, transects and other systematic counts at sites with series of ponds or ditch systems have produced totals of up to 25 at Exminster Marshes (2006), 21 (2010) along the Grand Western Canal, 30 at Lower Bruckland Ponds (2006), 17 at Rackerhayes (2005), 20 (1998, 2000 and 2009) at Smallhanger and 19 (in 2020) at Stover CP. Seen occasionally on Lundy in July-September.

Flies from mid-May (earliest 3 May 2001 at Exeter Canal) to September (latest 28 October 2019 at Harleston). There has been an increase in late-season records in recent years, with all of the 14 October records since 1993.

Lesser Emperor *Anax parthenope*

Rare migrant; has attempted to breed

There have been over 40 records in Devon of this recent British colonist in 12 years since the first in 2003, with breeding attempted in 2005 and most records in the hot summers of 2006, 2019 and 2023. Records have been between mid-June and late August, so a male

Lesser or Vagrant Emperor over Exeter Canal by Exminster Marshes on 2 October 2011 is more likely on timing to have been the latter. Unless specified otherwise, all have been single males, which are typically driven away from potential territories by male Emperor Dragonflies:

2003: two at Smallhanger on 10 August.

2005: Exeter Canal at Countess Wear on 22-23 June; a pair egg-laying (the male was taken by a Moorhen and fed to a chick!) at Squabmoor Reservoir on 17 July.

2006: Exminster Marshes on 16 June; Little Bradley Ponds on 17 June; Squabmoor Reservoir during 24-30 June; Lower Bruckland Ponds during 16-21 July; and Okenbury, near Kingston, on 9 August.

2010: Aylesbeare Common on 8 August and Smallhanger on 30 August (two male, one female).

2012: Lower Bruckland Ponds on 10 August.

2014: Bowling Green Marsh on 1 July.

2017: Mill Street, Ottery St Mary on 18 July.

2018: Netherexe Pond on 22 July.

2019: Lower Bruckland Ponds on 28 June and 2 July; Stover CP on 6 July, 15 July and 2 August; Slapton Ley and Squabmoor Reservoir (or possibly Vagrant Emperor) on 10 July; and Meeth DWT Reserve on 14 July.

2020: Dawlish Warren on 3 August 2020 (female); Stover CP on 11-12 August (two separate males, one pictured); and Venford Reservoir (Dartmoor) on 12-13 August.

2021: Lower Bruckland Ponds on 21-22 July, Slapton Ley on 2 August and Meeth on 4 August.



2022: Grand Western Canal on 11 June and Rewilding Roborough Fields on 12 July, while at Southdown Valley, Soar, a male on 29 July and 27 August and an ovipositing pair in tandem on 8 August.

2023: a good series at Southdown Valley, Soar, with one on 14 June followed by six, including a tandem pair (the second year in a row with evidence of breeding here), on 23 August and two on 1 September; singles at Exeter Canal on 13 June, Stover during 25 June-19 July and Dawlish Warren on 6 September; two males at Clennon Lakes on 8-9 September and at Home Farm, Fremington, on 12 September; and finally one at East Prawle on 18 September.

Hairy Dragonfly *Brachytron pratense* (Hairy Hawker)

Scarce and local at ditches, ponds and lakes

Devon holds the most south-westerly outposts of this nationally-increasing species, with strong populations around the Exe marshes, Bovey Basin and the Slapton area. Hairy Dragonfly sometimes wanders away from breeding sites and, in line with the national

picture, has colonised new sites in recent years, with the Grand Western Canal and Braunton Burrows being extreme examples.

Around the Exe Estuary, the strongest population extends over the whole of Exminster Marshes, where 60 were counted in 2007 during a systematic survey of the ditches. Other sites include Bowling Green Marsh-Goosemoor (up to four, 1992-2023), Dart's Farm/Lower Clyst Valley (up to 13 since 2005, exuvia at Dart's Farm in 2022), Dawlish Warren (up to three since 1987, with egg-laying in 2006 and 2008), Exeter Canal (including the abutting Alphin Brook, Harpers fishing ponds and Old Sludge Beds DWT Reserve; regular, with occasional breeding evidence and a count of 11 in 2001), Matford Business Park (2003), Matford Marshes (2004) and Matford RSPB (breeding recorded in 2005 and 2009). Rather surprisingly, an egg-laying female was seen at a pond outside the Met Office building in Exeter in 2013.

In the Bovey Basin, where the earliest record comes from 1924, recorded from Decoy CP (up to three since 1993, and at Magazine Pond in 2006), Little Bradley Ponds (small numbers since 1992, with egg-laying in 1994 and 2022) and Stover CP (the main site, with records since 1982 and regular breeding evidence: daily maximum of 12 exuviae in 2006 and peaks of 10 adults in 2003, 13 in 2012 and 12 in 2018). One or two at Abbrook Pond (1982), Bovey Heath (2014), Chudleigh Knighton Heath (1995, 1996 and 2009), East Golds (2021), Gallows Cross SUDS ponds (Kingsteignton, 2021-2), Netherexe (and former Key Transport) Pond (1978-96, with egg-laying in 1995), New Bridge settling ponds (2012), the former New Cross Pond (egg-laying in 1992), Rackerhayes (1943-2021, with mating in 1991, larvae in three ponds in 2006 and an exuvia in 2021), West Golds (1992, 1994 and 2005) and Ventiford Ponds (1991, 2014, 2021 and 2022, with six males on 25 May 2020 and egg-laying in 2022 and 2023).

In the EDPH, recorded from Aylesbeare Common (small numbers 2001-7 and 2022, including mating in 2001), Bystock Pools (small numbers and breeding evidence regular) and Squabmoor Reservoir (up to three, 2005-19). Elsewhere in east Devon, known in recent years from the Grand Western Canal (since 2003, with up to eight seen and breeding evidence from 2012) and the Otter Marshes (seven north of White Bridge in 2006, five south of White Bridge in 2007), while a territorial male wandered to a West Hill garden pond on 29 May 2009.

In the South Hams, there are outposts at Slapton Ley (up to six since 1978, with breeding evidence in 2005, 2006 and 2010) and Beesands Ley (including egg-laying at an adjacent pond in 2008), and probably at Hallsands.

Following a record from Braunton Burrows on 6 May 2014, a female was seen egg-laying there at SS44843563 on 18 May 2019, the first records for North Devon. There were further sightings there in spring 2022, including a male on 17 May, and 2023.

Flies from late April (earliest 23 April 2009 at Exminster Marshes) to mid-July (latest 5 August 1981, also at Exminster Marshes).

Common Clubtail *Gomphus vulgatissimus*

Vagrant: one record from the River Otter

One was seen along the River Otter near Tipton St John on 18 July 2017 by a visiting Polish entomologist familiar with this species. Further searches were unsuccessful, although this is an elusive species, after emergence often seen away from water. The species has otherwise not been recorded closer than Gloucestershire, so the origin of this individual is uncertain.

Golden-ringed Dragonfly *Cordulegaster boltonii* (Common Goldenring)

Fairly common and widespread at or near running water

Found widely all across the county, from coastal flushes to high moorland streams, and wandering freely away from watercourses. One was on Lundy on 9 September 2009.

An exuvia was found virtually at sea level in Alphin Brook, Countess Wear, in 2009. At Dawlish Warren, also at sea level, in the absence of suitable breeding habitat, there were three records prior to the mid-1990s, but it has since been recorded annually in small numbers.

Flies from late May (earliest 4 May 2007 at Stover) to September/October (latest 18 November at Blanchdown Wood).

Orange-spotted Emerald *Oxygastra curtisii*

Extinct: only record from River Tamar in 1946

Three specimens (two male) were taken at the River Tamar near Gunnislake by O. G. Watkins in July 1946. There have been no further records here, despite searches, although there is an unconfirmed record of one photographed in the 1960s. The river here, not far above its tidal limit, has calm sections and wooded margins such as those favoured by this species in France, but it is possible that the water quality has been affected by contamination from the old copper mines in the area.

Downy Emerald *Cordulia aenea*

Scarce and very local at wooded ponds and lakes

Typically only very small numbers are seen at Devon sites, usually territorial males, and egg-laying is observed only rarely. Adults spend much time away from water, around woodland, so seeing them at their breeding sites always makes for a special day. Evidence of breeding comes most often from finding exuviae near the water's edge. Although often in clumps of rushes or Greater Tussock Sedge, emergence can be on trees, even at distance of up to 2m from water and 2m up tree trunks. At Bystock Pools DWT Reserve, exuviae have been found with relative ease on the woodwork of a walkway around the reservoir fringe. After a concerted emergence around mid-May (earliest 4 May 2014), territorial males are seen mainly in late May and June, with smaller numbers into July (latest at Bystock Pools DWT Reserve on 31 July 2012).

In the Bovey Basin, which is the main area occupied in Devon, Downy Emerald has been known since a record from 'Bovey Tracey' in 1922. The principle breeding sites have been

the former New Cross Pond (until filled in around 1999; maximum of 11 territorial males in 1992), Little Bradley Ponds (originally the older, eastern pond, but also the 'new' pond created in 1992) and Rackerhayes (known from 1978, with up to five territorial males up to 2006). At Little Bradley Ponds, 53 exuviae were found by intensive searching by up to four observers during 12-14 May 2006, giving some idea of the site's productivity (although typically only up to six territorial males patrol the margins). Smaller numbers also breed at Stover CP (presumably in the Lake, although most evidence has come from up to six exuviae in a day found around the adjacent 'Sue's Pond'; daily maximum no more than three adults) and at Decoy Lake (where records are rather erratic and shoreline access is very limited, though four, including a mating pair were seen in 2010).

Elsewhere in the Bovey Basin, recorded from the former Key Transport Pond (now Netherexe) in 1978, and in 1992 there were three territorial males at Abbrook Pond (first here in 1982), singles at Bradley, Eddison and Rub-a-dub Ponds and two at Magazine Pond (Decoy CP), plus one 7km south of the last site at Hazelwood Pond, Marldon, which is well outside the Bovey Basin. Access restrictions at the angling ponds at Abbrook, Eddison, Netherexe and Rackerhayes have hindered surveys in recent years. A male was seen at Ventiford Ponds in 2018 and up to three in 2020-23 (including a female in 2021) and a male was at Bovey Heath on 4 June 2021; these could be wanderers from nearby Stover.

In the EDPH, the species breeds at Bystock Pools DWT Reserve (up to at least six males at the reservoir since 1978; exuviae and egg-laying seen regularly, with at least a dozen exuviae on 21-22 May 2010) and Squabmoor Reservoir (first noted here in 1978; an exuvia found in 2006 and seen egg-laying in 2010; maximum of at least six in 2007 and 2010).

Scarlet Darter *Crocothemis erythraea* (Broad Scarlet)

Vagrant: one record

A male at Smallhanger on 16 July 2000 was the fourth record for Britain.

Broad-bodied Chaser *Libellula depressa*

Common and widespread at lowland standing waters

Territorial males are liable to appear at any new or recently-restored pond and even rainwater puddles with bare ground and little vegetation. Often disperses well away from water, where with females and immatures may be found in woodland rides, glades and scrubby areas. Concerted counts at Stover CP have peaked at over 20, mostly territorial males. There are several other records of 20 or more elsewhere, with a maximum of 30 at Chudleigh Knighton Heath in 2006. Flies from mid-April (earliest 11 April 2014 at Westward Ho!) to mid-September (latest 28 October 2018 at Harlestone).

Scarce Chaser *Libellula fulva* (Blue Chaser)

Recent colonist to South Devon rivers, drains and pools; may wander

The full extent of breeding in Devon is not fully known, but likely to be more extensive than at well-known sites in the lower valleys of the Exe, Clyst and Axe and the Grand Western Canal. Systematic surveys and careful checks of rivers, streams, ditch systems pools with

lush emergent vegetation at the margins are likely to reveal additional breeding sites, including some of the sites mentioned below.

Emergence is typically in the second half of May, often resulting in teneral appearing away from the breeding sites. Adults appear on territory in June and smaller numbers remain until mid-July. The earliest emergence is 8 May 2020 at Exeter (near St Leonards) and the latest record on 24 July 2008 at the Grand Western Canal, apart from an exceptional record of an immature male at Lower Bruckland Ponds on 1 September 2015.

The first record in Devon was a male by Alphin Brook at Countess Wear, found during a BDS Devon Group meeting on 21 June 2003. However, the first signs of colonisation came in 2005, when 12 were seen along the Grand Western Canal in July, with egg-laying noted there on the 14th. Up to 26 were counted and mating was observed in 2006; in 2007, at least 147 emerged there during 18 May (pictured)-1 June, mainly in the 300m east of Westcott Bridge, with up to 12 seen subsequently; in 2008, at least 53 emerged during 20-30 May, with a subsequent peak of 28 (four egg-laying) on 10 June; 47 were counted on 2 June 2009 and 85 in systematic counts during 31 May-21 June 2010, by which year territories extended along most of the canal, although most were in the central section between Halberton and Ebear. In 2018, 39 were counted in five sections of the canal and 40 in 2021.



In 2007, Scarce Chasers were found along the River Axe around Colyford Bridge (six, including one teneral) and at Whitford, and at Lower Bruckland Ponds (presumably from the nearby River Axe; up to three or four, including a mating pair). In 2008, five were seen at Lower Bruckland and at least six emerged along the River Axe, while at Lower Bruckland numbers had risen to 16 in 2019. Downriver, a male was seen at a Seaton Marshes drain on 3 June 2011 and a teneral, presumably from the Axe Valley (at least 3km away) was at Trinity Hill LNR, near Axminster, on 24 June 2016.

The first suggestion of breeding around the head of the Exe Estuary came in 2007 from Exminster Marshes, where the eradication of the invasive alien Floating Pennywort *Hydrocotyle ranunculoides* by the Environment Agency is likely to have produced suitably open ditches: a teneral was found near the M5 on 29 May and six territorial males were along the main drain on 10 June. In 2010, an exuvia was found, egg-laying was observed and 18 (17 territorial males) were present on 22-23 June. The peak count had risen to 46 (43 males) by 2018, 66 (58 males) by 2020, and 92 (88 males) in 2023, mostly still along the main drain (although the extent to which breeding occurs in the ditches across the marshes has not yet been determined). Just 2km to the east, one was found at Dart's Farm fishing ponds, Topsham, on 27 June 2010, mating was seen there in 2016, mating and exuviae in 2017, up to eight males in 2018, mating in 2019 and an exuvia in 2022. In 2018, four

territorial males were found close to Exeter Canal at Harpers Fishing Pools (with individuals there and nearby at Salmon Pool in 2019) and two males in the lower Clyst Valley north of the A376, where there were eight males in 2020; further down the Clyst, an immature male was at Bowling Green Marsh on 30 May 2023. Wandering females were seen at Dawlish Warren on 19 July 2008 and Alphin Brook on 17 June 2012; singles were seen at Powderham Marsh in 2014 and 2022, with six in 2023; the Old Sludge Beds DWT Reserve in 2014, 2017 and 2019 (up to seven), with up to four along Exeter Canal in the same area; however, these last totals were eclipsed by a minimum of 52 (50 males) between Topsham Ferry and Countess Wear in 2023. In 2019, a teneral wandered into Exminster in May and at least two were seen at Matford Pools in July. Several have wandered into the suburbs of Exeter in recent years.

Other singles have been found away from known breeding sites as follows: along the River Culm near Rewe in 2007 (male), West Charleton Marsh, Kingsbridge, on the late date of 23 July 2010; a fresh-looking female at Buckfastleigh on 23 June 2017; the lower Otter Valley on 30 June 2018; at Clennon Valley Pools on 25 June 2018, 5-8 July 2019 (male), 3 & 22 June 2020 (male), 22 July 2021 (male), 14 June 2022 (male and female) and up to three in 2023 – the species is presumably breeding here; at Westerland Valley Country Park, Torbay, on 5 June 2019; and at Stover CP (female) on 5 July 2019. At least two were reported at Little Bradley Ponds on 24 June 2020. In 2021, there were records in North Devon from near Winkleigh (15 June), Meeth Quarry DWT Reserve (two males on 26 June and an overmature female on 20 July) and an old female at Lower Tamar Lake on 24 July, and in South Devon from near Woodbury (15 June), the Otter-Tale Valleys at Taleford (5 June), Otterton (16 June), near Cotley (26 June) and at South Efford Marsh (24 July).

Further signs of range expansion came in 2022, most notably the discovery of 20, including mating pairs, at Braunton Marsh in the spring. Also in 2022, single territorial males were at Little Bradley Ponds and Stover Lake on 2 June, with three males at the latter on 6 June, two males at Squabmoor Reservoir on 3 July and single males at Slapton Ley in 2022 and 2023. At Stover, up to seven males were seen in June 2023, with a female egg-laying on 23 June.

In 2023, two immatures were seen at Meeth Quarry DWT on 29 May and dispersing individuals were seen in early June in East Devon at Bystock, River Tale at Escot Park and at Stoneyford, with males at Decoy Lake (3), Little Bradley Ponds and Slapton Ley. Records also came from Braunton Marsh again and a male was at Canworthy Water, near the Cornwall border, on 22 June.

Four-spotted Chaser *Libellula quadrimaculata*

Common and widespread at standing waters

Widespread, although counts are usually in single figures at most sites. Small numbers are reported from moorland ponds. The highest counts have come from the Bovey Basin, at Little Bradley Ponds (52 on 17 June 2006) and Stover CP (64 on 25 May 2007 and 59 on 4 June 2023). However, 'thousands' occurred in the first four days of June 1963 on Lundy, where many adults emerged from Pondsburry on 15 May 1964; surprisingly, there were no further records from Lundy until 25 May 2023.

At Dawlish Warren, became a regular breeding species after pond excavation in the 1980s but was lost some time in the 1990s, since when there have been one in 2008 and two in 2009, but none since.

Flies from May (earliest emergence 9 April 2011 at Bystock) to August (latest 29 September 2002, also at Bystock).

Black-tailed Skimmer *Orthetrum cancellatum*

Common and fairly widespread at lowland standing waters

This species can be abundant at waters with unvegetated margins and similar basking areas, including around claypits and paths alongside canals.

Maximum counts: 50 at South Huish Marsh on 9 July 2005, Slapton Ley on 11 June 2008 and Stover CP on 22 June 2010 (where also 46 on 24 June 2020); 65 along the Grand Western Canal on 18 June 2010; and over 100 at Lower Bruckland Ponds on 8 July 2006.

Flies from mid-May (earliest 30 April 1995 at Dawlish Warren) to August (latest 17 October 2003 nears Beesands).

Keeled Skimmer *Orthetrum coerulescens*

Fairly common in wet lowland heath and lower upland bogs and mires

Keeled Skimmer breeds in boggy mires and seepages and the edges of runnels, streams and ponds in lowland heathland and the lower parts of moorland. It occurs at altitudes of up to 400m on Dartmoor and Exmoor, although is much scarcer at the latter; a record from Cramber Pool (430m) is probably the highest. Sites typically have abundant bog-mosses *Sphagnum* species.

Devon has many excellent sites for Keeled Skimmer, especially valley mires in Dartmoor, Exmoor and the East Devon Pebblebed Heaths, with sparser records from springline mires in the Blackdown Hills. Heathier Culm grassland sites often hold this species. Between late June and early August, counts of over 100 have come from Aylesbeare Common (1995 and 2005), Bicton Common (1995), Doetor Mire (2005), Blackabrook, Lee Moor (2005), Wigford Down (2010) and Vixen Tor Mire (2005), with maxima of 200 at Walla Brook (Riddon Ridge) on 11 July 1999, 200+ at Colaton Raleigh Common in July 2006 and 250 at Smallhanger on 6 August 2006.

Small numbers occur in the Bovey Basin, especially at seepages and drains in clay pits. Water in the ponds here is typically neutral, but the species probably breeds successfully where sufficient *Sphagnum* can establish; it has bred at Chudleigh Knighton Heath (colonised ponds dug in 1990, following the introduction of *Sphagnum*, with a maximum of ten in 1995, but fewer since), Little Bradley Ponds (maximum of 11 in 1995, but none since 2001) and Stover (maximum of five in 2020), and possibly at Ventiford Ponds (maximum of seven males in 2019). There was formerly a good population at Meeth Ball Clay Works, until extraction and pumping ceased and the pits flooded.

Immatures are prone to wandering and adults occasionally appear well away from typical habitat, including coastal sites. Recorded at Saltram, Plymouth, in 2010 and 2011, Ford Park Cemetery, Plymouth, in 2023, while at Dawlish Warren in 1982 and 1983 a male was in the dunes on 24 August 2004 and a worn female was in the same place on 16 August 2010. Up to three (including a female) were found in an acidic runnel on the cliff slope at West Soar in 2017-20, with up to 22 in 2021.

Flies from late May (earliest 6 May 2007 at Aylesbeare) to mid-September (latest 15 October 2011 at Vennmills, North Devon).

Wandering Glider *Pantala flavescens*

Vagrant: one record

One was seen in flight near Otterton on 13 May 2015 by two observers with experience of the species. There have been only three previous British records.

Black Darter *Sympetrum danae*

Fairly common at upland bogs and pools; mainly scarce wanderer in lowlands

Black Darter is known mainly from acidic pools and mires across Dartmoor and less extensively on Exmoor. Unlike lowland heathland sites in Dorset, Hampshire and Surrey, it breeds rarely and seemingly not very successfully at similar sites in the Bovey Basin and the EDPH. National trends suggest that this is one of a small suite of 'northern' species showing a decline over the last 50 years. Along with Emerald Damselfly and Common Hawker, Black Darter has declined in site occupancy (a surrogate for population) in Britain (and on the Continent), which suggests that the decline is related to climate change. However, work to restore Dartmoor and Exmoor mires, including the blocking of drains, has improved the breeding conditions for this species. Most of the many records from unsuitable breeding sites away from moorland are assumed to have been dispersing from Dartmoor or Exmoor, rather than Continental immigrants.

On Dartmoor, Black Darter occurs widely in blanket and valley mires at 235m ASL or higher, with counts of over 20 in the Burrator catchment and at Gidleigh Common, Gutter Tor Mire (Sheepstor), Quickbeam Hill, Statt's Bridge and Yellowmead (Willsworthy). Around the fringes of the moor, the species was also known formerly from the Lee Moor clay pits (100-150m, but not since 1999 and not necessarily breeding there) and especially Smallhanger (<200m), where a maximum of more than 100 was counted on 6 August 2006, until the recent extensive loss of habitat due to clay working.

Exmoor records have come from Brendon Common (1980-81), Challacombe Common (1999), Furzehill Common (1941) and close to the Somerset border at Badgworthy (2012) and Squallacombe (2011); it also breeds just over the border near Pinkworthy Pond.

In the lowlands, noted in East Devon from the EDPH at Bystock Pools DWT Reserve in 1977, Bicton Common in 1977, on 2 August 1981 and 2 August 2019, Squabmoor Reservoir on 3 September 1978 and at Aylesbeare and Harpford Commons on 8 September 1999 and 19 July 2010. Further east, recorded at Offwell Woods on 4 August 1993.

In the Bovey Basin, most records have come from at Stover, with two on 10 October 1992, one egg-laying on 21 August 1995, a teneral that flew up from beside a *Sphagnum* area of the 'Puddle Pond' during filming for the BBC's 'One Show' on 29 July 2008, and one on 26 August 2017. Also recorded at Decoy CP in 1989; singles at Bovey Heathfield on 5 October 2005 and 3 October 2017; single males at Chudleigh Knighton Heath on 29 August 2008 and Little Bradley Ponds on 13 September 2020 (the first there since a record in 1978); Netherexe on 12 September 1978 and Rackerhayes on 1 July 1979. At nearby Haldon Forest, noted at Kiddens Pond on 7 August 1981.

Coastal or near-coastal records have come from Braunton Burrows (1979), Dawlish Warren (a male on 14 and 23 September 2004), Kenwith Valley NR, Bideford (1 September 1991), Lundy on 29 September 1998 and 21 October 2012 and Torquay (1 September 1930).

Flies from July (earliest 18 June 1995 at Lydford) to early October (latest 12 October 1986 at Holming Beam, Dartmoor).

Yellow-winged Darter *Sympetrum flaveolum*

Vagrant: 12 records

This erratic migrant to Britain was first recorded in Devon at Woodbury Common in 1928, while five followed in 1955 at Bovey Heathfield and in hectads SX73 (contains Bolt Head and Prawle Point), SX83 (contains Start Point), SX84 (contains Slapton Ley) and SY09 (contains Aylesbeare Common and the upper Otter valley). During an unprecedented national influx in 1995, singles were at Colaton Raleigh Common on 8 August, Budleigh Salterton on 19 August, a mating pair were seen at Croyde, and at Berry Head there were five (four males, one female) on 12 August, with two (one male) next day; there were also undated records from Teignmouth and Dawlish Warren (two).

Red-veined Darter *Sympetrum fonscolombii*

Very scarce migrant; has bred

This erratic Continental immigrant has become increasingly frequent in Britain in recent years, with scattered breeding records as the species colonises. Red-veined Darter usually has two generations each year and our climate may not be warm enough to allow this currently, although the tendency is for bimodal patterns of occurrence, with influxes in June sometimes resulting in breeding and with later emergence in September-October. There have been sporadic breeding records in Devon from five sites (four of them coastal or near-coastal) in at least six years since 1995. These have tended to coincide with national influxes during exceptionally hot weather.

A male that was judged to have emerged from one of the ponds at Dawlish Warren on 21 October 1995 comprised the first evidence of breeding in Devon. Breeding activity was next recorded at South Huish Marsh, with at least six adults and egg-laying seen on 3 August 2003 and a teneral on 9 July 2005, but the only subsequent record was two males on 22 July 2009. Breeding also occurred at Lower Bruckland Ponds in 2006-7: in 2006 egg-laying was observed on several dates between late June and mid-July and up to seven adults, mostly males, were seen; in 2007, a recently-emerged adult and up to six mature adults (one egg-

laying) were seen in early June, followed by a male on 24 July and later an exuvia was found on 16 September, an adult on 1 October and a fresh female on 6 October. In 2014, a pair was seen egg-laying at Meeth DWT Reserve on 12 June and single males were seen there in June 2015. In 2019, up to ten were seen in July at both Clennon Valley Lakes and Meeth DWT Reserve, with egg-laying recorded at both sites; both sites had further records up to 2023.

Possibly bred in 2020 at Blackhill Quarry (EDPH), where up to 10 immatures were present in a dry area in June, with 3-4 mature males on territory at a nearby shallow pond on 25 June; however, no exuviae were found then or on 14 September, when a second generation might have been expected. In 2022, present at Southdown Valley, Soar, during 17 June-27 August, with a tandem pair ovipositing on 21 June and 11, including three tandem pairs, on 10 July; four males seen later on 22 September might indicate successful breeding; another good series of sightings in 2023, with evidence of breeding: five males on 24-25 May (clashing with Vagrant Emperors!), two males on 14 and 21 June, eight, including two pairs egg-laying, on 24 June, and one or two males between 7 July and 1 September, with another pair egg-laying on 23 August.

At Smallhanger, small numbers, most or all males, were recorded in seven years between 1998 and 2009, with a maximum of nine on 11 August 2003, but without any evidence of breeding. However, the species bred around this time some 25 km to the west at fishing lakes near Trerulefoot, Cornwall, and it is not inconceivable that at least some of the Smallhanger individuals had dispersed from here.

Other records, generally assumed to be immigrants, are as follows:

1883: recorded at Exmouth (undated).

1903: recorded at Woodbury Common (undated).

1911: collected at Strete on 20 July.

1928: recorded at Grand Western Canal (undated).

1941: collected at Furzehill Pond, Lynton, on 21 and 26 June and 7 July.

1942: recorded at Fernworthy Reservoir on 19 July.

1984: at least six at Beesands and one at Slapton Ley on 17-18 August, one at Dawlish Warren on 22 August and one at Rackerhayes on 27 August.

1992: a male at New Cross Pond 24 May.

1998: one at Dawlish Warren on 12 October.

2000: three at Berry Head on 27 and 30 July.

2001: one at Seaton Marshes on 15 August.

2002: singles at East Prawle on 14 and 19 June, Aylesbeare on 24 June and Start Point on 1 October.

2003: two at Prawle Point on 16 October.

2005: one at Beesands on 16 July and two at Exminster Marshes on 3 and 8 August.

2006: a male at Stover Lake on 10 June; at least six at Mansands on 17-18 June; one at Squabmoor Reservoir on 18 June; a male at Whitepit Quarry (Bovey Basin) on 15

- July; three males by the sea at Beesands on 22 July; and single males at Dawlish Warren on 13 August and Otter Marshes on 21 August.
- 2008: an immature male at Lower Bruckland Ponds on 7 June and a female or immature male on 15 June; a few were seen at South Huish Marsh.
- 2009: four males at Lower Bruckland Ponds on 7 June and one on 21 June; up to four at South Huish Marsh; also two at Berry Head on 4 June, two males at Dawlish Warren on 7 June and one in Plymouth 13 June; a female later at Northam Burrows on 21 September 2009.
- 2011: a late male at West Soar on 15 November.
- 2014: a pair egg-laying at Meeth DWT Reserve on 12 June; a male was at Double Locks fishing pools on 15 June.
- 2015: a mature male was on Lundy Island (first record there) on 6 June; males were at Soar on 8 and 15 June; single males were seen at Meeth DWT Reserve on 14 and 29 June; a female at East Soar on 19 June; a male at Dawlish Warren on 21 June; a female at Andrew's Wood on 30 June; and a female was unusually high up (330m) on Dartmoor at Buckland Common on 25 September.
- 2017: probably at least five different individuals were recorded during 25 May-2 July in the Soar area, plus a male at Dawlish Warren on 1 and 24 June and one at Bovey Heathfield on 5 July.
- 2018: one at Prawle Point on 13 October.
- 2019: recorded in early July at Berry Head (three), Bystock Pools DWT Reserve, Clennon Valley (at least five), Dawlish Warren, Stover, Squabmoor and Warren Point, Thurlestone; at least 10, including two pairs egg-laying, at Meeth DWT Reserve on 14 July; at least five on the seaward side of Beesands Ley on 27 July, with possibly more over the Ley; later, a female was at Aylesbeare Common on 18 September.
- 2020: up to ten immatures away from water at Blackhill Quarry 8-21 June, with three or four territorial males (one pictured) at a nearby shallow pool on 25 June; an immature male at Bovey Heathfield on 6-18 September.
- 2021: up to three males at Soar between 28 June and 8 July.
- 2022: one flew in off the sea at Dawlish Warren on 27 May and males were on the coastal path east of Budleigh Salterton on 6 July and at Soar on 22 September.
- 2023: males at Exminster Marshes on 16 May and Meeth on 25 May; up to three at Clennon Lakes on 14-15 June, and singles at Dawlish Warren on 29 July and Big Pond, Blackaton Cross on 14 September.



Ruddy Darter *Sympetrum sanguineum*

Very scarce migrant; has bred

It is an enigma that this species (and also Brown Hawker) occurs just over the borders of Dorset and Somerset in reasonable quantity (it is very common in the Somerset Levels, for example), but has always been very scarce in Devon.

Larvae were reported from Exminster Marshes on 22 May 1996 (see also under 2002 below) and Sir Arthurs Pill, Branton Marsh, on 12 September 1996 and Branton Swanpool on 25 September 1996, respectively. (However, it should be noted that the larvae of this species are very difficult to separate from those of Common Darter.)

Ruddy Darter formerly bred at what appears to have been the main (perhaps only) breeding site in the Bovey Basin: a damp hollow between Rackerhayes pools and Gallows Cross, Kingsteignton, where 24 adults were present on 3 August 1991, but only two on 17 July 1992; the site was lost when quarried for clay soon after; earlier records from Rackerhayes in 1979 and 1985-6 may refer to this site. At Offwell, East Devon, 'good numbers' were reported before the ponds were virtually cleared of emergent vegetation in the early 1990s: there were at least 20 territorial males in 1994, but only five, including a recently-emerged teneral and one egg-laying, were seen on 14 August 1995, one in 2005, two males in 2008 and a pair egg-laying in 2009; there have been no reports since. An overgrown ditch near the sewage treatment plant at Seaton Marshes held Ruddy Darters until it was dredged in 2013: the records span 1995-2009, with a maximum of 12, including a pair mating and egg-laying, on 22 July 2006.

Seen egg-laying in the Dune Pond at Dawlish Warren in 1994 and four reported there in 1995, but no evidence of breeding since Moorhens took up residence.

On 17-18 July 2006, a total of 44 found at five ponds at Branton Burrows, with 29 at D Lane Pond (17 males, three teneral, plus four mating pairs), three at I Lane Pond (one male plus a pair mating and egg-laying), six at Snipe Pond (four males plus a pair mating and egg-laying), five males at Venners Pond and a female at Sheep 1 Pond. However, a male on 11 August 2010 is the only subsequent record.

Other records are as follows:

1907: recorded at Dawlish.

1924: recorded in hectad SX87 (Newton Abbot area).

1949: recorded in hectad SX98.

1961: recorded in hectad SX87 (Newton Abbot area).

1978: recorded at the old Key Transport Pond on 12 and 18 September and Little Bradley Ponds on 9 July, 5 August and 18 September.

1979: recorded at the old Key Transport Pond on 11 July and from Branton Burrows and New Cross Pond (both undated).

1981-2: recorded at Bradley Pond and Little Bradley Pond (undated).

1982: recorded at Dawlish Warren.

1988: reported from Stover (undated).

1989: reported from West Golds, Newton Abbot (undated).
 1989 and 1993: singles at the Clyst Marshes (undated).
 1994: one at Exminster Marshes on 15 September.
 2000: reported from Aylesbeare Common on 19 August.
 2002: seen at Exminster Marshes from 22 July to 4 October, with a maximum of seven on 29 July – this suggests that Ruddy Darter may breed (or at least may have bred) here – and one or two were at Stover CP during 29 July-28 September.
 2003: reported from Aylesbeare Common on 3 August and a male at Slapton Ley on 25 August.
 2004: reported at Chudleigh Knighton Heath on 5 July.
 2005: different males at Little Bradley Ponds on 18 and 19 July; one at Stover CP on 3 August; three at Riddiford House (near Winkleigh) on 8 August; at least two at Bovey Heathfield and one near Otterton in August; and one at Dawlish Warren 17-23 October.
 2006: a male(s) at Chudleigh Knighton Heath on 18 July, 4 August and 10 September, with two reported on 20 July; one at Sterridge Valley (near Berrynarbor) on 21 July; one at Bystock Pools DWT Reserve on 23 and 25 July; one at Lower Bruckland Ponds on 25 July; one at Dawlish Warren during 26 July-13 August; and one at a farm pond at Deptford Farm, Meddon, on 26 July.
 2007: one or two at Beer Quarry, Exminster Marshes, Lower Bruckland Ponds and Seaton Marshes.
 2008: an early migrant(?) was at Dawlish Warren in June, a few were seen at several sites in North Devon (including one or two near Beaford) between late July and early September and one was reported in a garden in East Budleigh on 1 September.
 2009: one at Smallhanger on 2 August.
 2011: reported at Mount Edgcumbe and Slapton Ley on 4 October.
 2012: reported at Slapton Ley on 26 August, with two on 18 September (a record of six on 30 October would be exceptionally late for this species).
 2013: single males on the coast at Middle Soar on 12 August, Dawlish Warren on 5 October and at Exminster Marshes on the very late date of 23 October.
 2014: the first for Lundy Island was on 21 September, clearly a migrant.
 2018: one at Lower Bruckland Ponds on 28 July.
 2019: singles at Powderham Castle on 10 July and Clennon Valley on 25 July and several, including mating pairs, at Meeth DWT Reserve 16 July and 26 August.
 2020: seen at Meeth on 7 August.
 2022: a presumed migrant male at Soar on 15 September.
 2023: a presumed migrant male at Southdown Valley, Soar, on 14 September.

Common Darter *Sympetrum striolatum*

Very common and widespread, except in high moorland

This is one of the commonest and most widespread dragonfly species, both in Devon and in Britain, breeding in a wide variety of mainly standing waters. Adults wander widely and are sometimes seen in numbers at coastal locations, even pairs flying in tandem, suggesting

immigration. There are at least six records from Lundy Island. At the other extreme, there are records from Dartmoor at 350m (Haytor and Headland Warren), 380m (Shapley Tor) and almost 400m (Devonport Leat at Nun's Cross), while larvae have been seen at Venford Reservoir (about 285m), emergence at Yellowmead, Willsworthy (about 300m) and egg-laying at Doetor Mire (about 250m). There is therefore some overlap and potential for competition with Black Darter; climate warming may allow Common Darter to 'invade' upland waters to the possible detriment of Black Darter.

Common Darter has the longest flight season of any species, especially in Devon, emerging from late May, the earliest being three that emerged from the Dune Pond at Dawlish Warren on 16 May 1998. They appear on territories from July and some linger into November or even December, with the latest one on 26 December, also at Dawlish Warren. The latter was the latest ever dragonfly record for Britain (excepting winter Vagrant Emperor records), but only for a day, as one was seen in Nottinghamshire the following day!

Counts of 100 or more have come from Bystock Pools DWT Reserve on 22 October 2016; Dart's Farm on 21 August 2005; Little Bradley Ponds on 4 September 1993 and 14 August 1996; Smallhanger in August 2001, 2003 and 2005; Stover CP on 12 November 2003 (late for such a large total), 9 September 2009 and 10 September 2023; the largest count to date is 200 at Seaton Marshes on 15 August 2001. Up to 50 are reported most years on Lundy, where the species has bred.

Vagrant Darter *Sympetrum vulgatum* (Moustached Darter)

Vagrant: two records

A female was filmed at the Dune Pond at Dawlish Warren on 6 September 2007, the first in Devon since one was recorded at Torquay on 15 August 1899.

APPENDIX Devon sites for important dragonfly species		Nationally Important Species				Locally Important Species				
Site	Grid Ref.	Southern Damselfly	Scarce Blue-tailed Damselfly	Small Red Damselfly	Scarce Chaser	White-legged Damselfly	Red-eyed Damselfly	Hairy Dragonfly	Downy Emerald	Ruddy Darter
Aylesbeare Common RSPB	SY053906	X		?				X		
Blackaton Cross, Dartmoor	SX573632		X							
Braunton Burrows ponds	SS43							X		X
Braunton Marsh	SS43				X			X		?
Bystock DWT Reserve	SY033843			X			?	X	X	
Cadover Bridge area	SX555648		X	X						
Clennon Valley ponds	SX885591				X					
Colaton Raleigh Common	SY050868	X		X						
Corndonford, Dartmoor	SX693749		?							
Dart's Farm, Topsham	SX973885				X		X	X		
Decoy Country Park	SX865702				?		X	X	X	
Doetor Common, Dartmoor	SX535844		?	X						
Exeter Canal	SX9291-9686				X	X	X	X		
Exminster Marshes	SX9587/8				X	X	X	X		?
Gallows Cross SUDS Ponds	SX861735						X	?		
Gidleigh Common: Moortown Bottom	SX660890	X		X						
Grand Western Canal	ST0113-0718				X		X	X		
Gutter Tor Mire, Dartmoor	SX581669		X	?						
Little Bradley Ponds	SX829778				?		X	X	X	
Lower Bruckland Ponds	SY270930				X		X			
Meeth DWT Reserve	SS5308		?	X	?					?
Prewley Moor, Sourton	SX542909	X	?	?						
River Axe, Colyford Bridge	SY259926				X	X				
River Clyst and leat, Clyst St Mary	SX970913				X	X				
River Otter and marshes	SY07834				?	X		X		
Seaton Wetlands	SY250908									?
Slapton Ley NNR*	SX825440				?			X		
Small Brook, Avon Dam	SX683646		?							
Squabmoor Reservoir	SY039841				?		X	?	X	
Stover Country Park	SX834751				?		X	X	X	
Venn Ottery Common DWT	SY063921	X								
Ventiford Ponds, Teigngrace (private)	SX842749						X	X	?	
Walla Book, Riddon Ridge	SX671771		X							
Wigford Down, Dartmoor	SX537649		X	X						

X – confirmed breeding. ? – recorded, but no evidence of breeding. * Norfolk Hawker also at Slapton Ley

