

Cumbrian Dragonflies

a distribution atlas

David Clarke

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Cover picture: Migrant Hawker

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Introduction

This Atlas shows the distribution of the twenty-six species of Odonata (eight species of Damselfly and eighteen species of Dragonfly) currently recorded from Cumbria. Notes on identification and biology are also included. Flight periods quoted here are indicative only, and may extend (or contract) in response to prevailing weather conditions.

The maps show records at a level of 2 x 2 km tetrads of the National Grid; a dot is not necessarily an indication of breeding presence, but the extent of computerised data often gives further evidence. With one exception, the maps show records up to and including 2004. These will be updated in 2006.

The sources (held in the Tullie House Biological Records database) are some 6,000 records received from many local and visiting naturalists. These include data-sets accumulated by the national Biological Records Centre, and by the British Dragonfly Society's North of England DARTER database, which the writer has operated since 1998.

A changing fauna

Six species have been recorded as new to the county since the first Atlas (1994): the Emperor Dragonfly (1995), the Ruddy Darter (1997), the Migrant Hawker (c.1999), the Hairy Dragonfly (2003), the Scarlet Darter (2004), and Black-tailed Skimmer (2005). Of these, the first three now appear to have at least a local breeding presence and may be expected to spread further; the three others have been just single occurrences. Within established species, there have been no clear losses of range and some indications of local expansion. Amongst those in which the latter is most obvious are the Banded Demoiselle and the Southern Hawker.

These processes will doubtless continue, prompted at intervals by good summers, such as 1995 and 2003, and the more subtle effects of climatic warming. More records of the Broad-bodied Chaser might be expected, and other species may continue their northward spread to Cumbria: the most obvious being Black-tailed Skimmer (*Orthetrum cancellatum*) and Red-veined Darter (*Sympetrum fonscolombi*) - both of which have bred just to the south of the county. An added but unknown component is the potential for occasional accidental introductions through eggs/larvae carried on water-weeds sold for ponds or aquaria.

In view of these changes, and the importance of dragonflies as indicators of sites of conservation importance, the continued accumulation of records will be important. Selected guides to the identification and biology of dragonflies are listed at the back of this booklet.

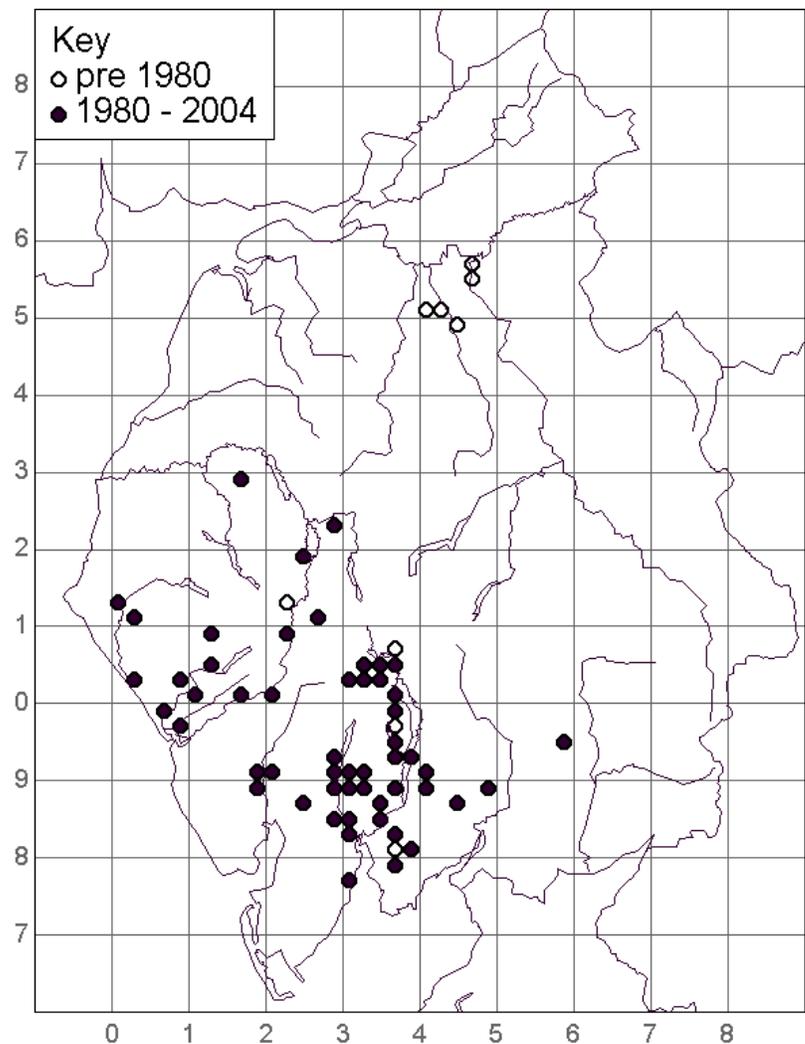
Beautiful Demoiselle

Calopteryx virgo

The large size, iridescent metallic green-blue body and rather butterfly-like flight of the Demoiselle damselflies makes them instantly recognisable. The wings of the male Beautiful Demoiselle have a violet-purple iridescence, and lack large clear areas. In females the wings are more transparent and are a pale brown shade, with a conspicuous white spot near the tip.

Normally prefers moderately fast unpolluted streams with gravelly beds. The presence of emergent/overhanging waterside vegetation is important for the territorial males, which perch on strategically placed stems to intercept females flying along the watercourse. Males have an elaborate courtship display flight, to attract females and direct them to suitable egg-laying sites. The species is tolerant of moderate shading by trees

Emerges in late May and the flight season in Cumbria may extend into September in good years. Colonies may be very localised, but large numbers may occur. Rather local in Cumbria on lowland streams in the central, southern and south-western Lake District. Formerly found on the rivers Petteril and Eden near Carlisle.



Banded Demoiselle

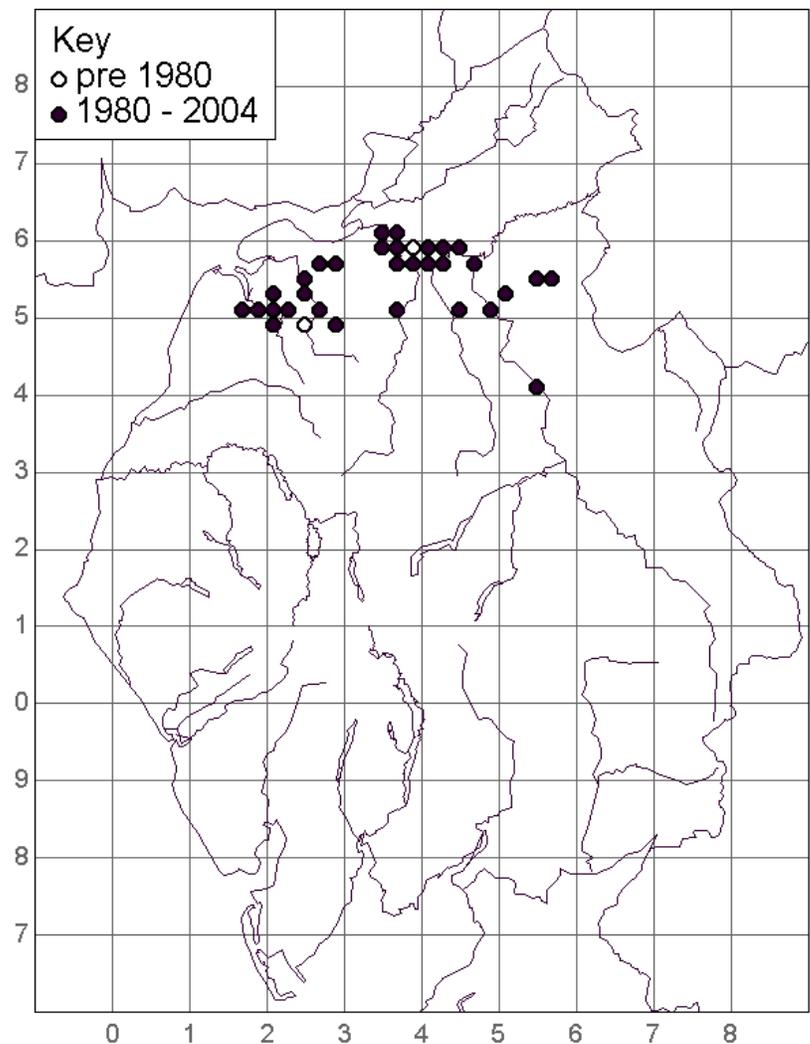
Calopteryx splendens

The large size, iridescent metallic green-blue body and rather butterfly-like flight of the Demoiselle damselflies makes them instantly recognisable. The Banded Demoiselle male has a conspicuous violet-blue colour patch in the outer half of each wing. The female lacks these patches and has transparent greenish wings, with a white spot near the tip.

Prefers rather slow-flowing unpolluted rivers and streams with silty beds. The presence of emergent/overhanging

waterside vegetation is important for the territorial males, which perch on strategically placed stems to intercept females flying along the watercourse. Reed Canary-grass (*Phalaris arundinacea*) is often a feature of suitable sites. Males have an elaborate courtship display flight, to attract females and direct them to suitable egg-laying sites. Shaded banks are avoided and sites are usually in meadowland; sites may extend to near the tidal limits of rivers.

Emerges in late May and the flight season in Cumbria is usually over by early August. In good years numbers very locally may be spectacular and such situations may prompt dispersals. Limited in Cumbria to the lowest reaches of a few rivers discharging into the Solway Firth. On the Eden it occurs in suitable stretches from the river mouth to about 30km upstream.



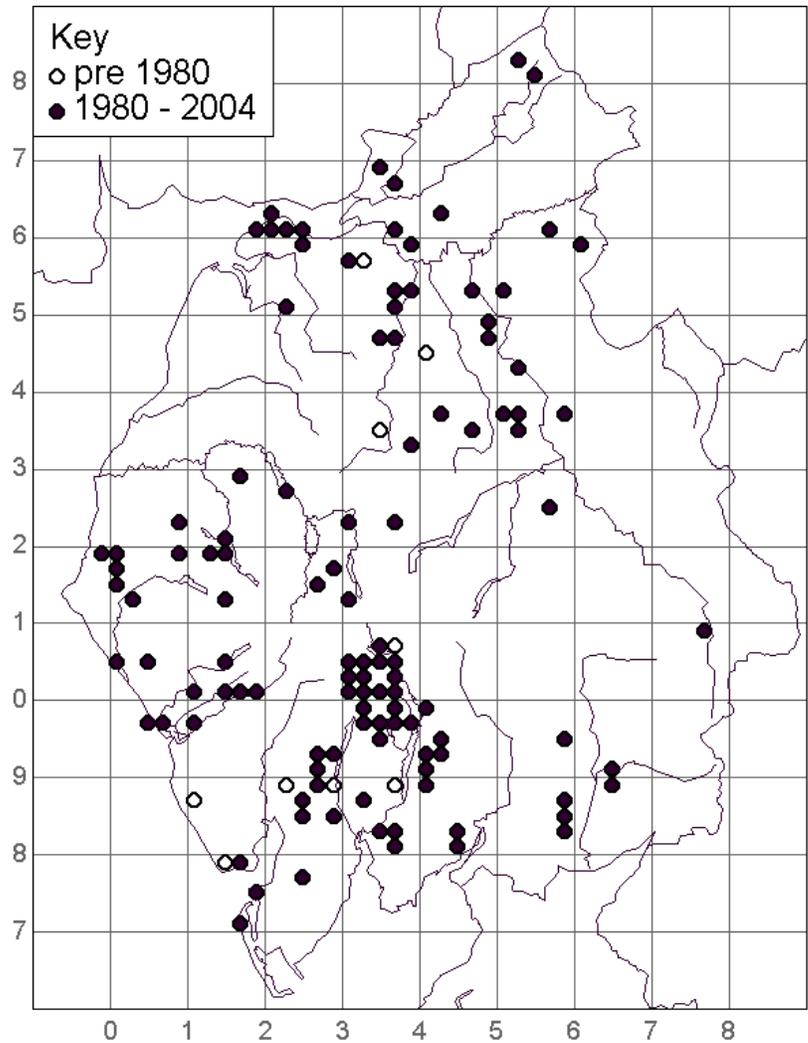
Emerald Damselfly

Lestes sponsa

The Emerald Damselfly has clear, net-veined wings and is the only small damselfly to have a green-metallic body colour. In contrast to most other damselflies, it often perches with the wings half-open (rather than folded over the body) when at rest. The mature males have a powder blue band at the base and tip of the abdomen, but females lack these.

This species prefers well-vegetated pools of wide-ranging size and type. Acid moorland pools with rushy (*Juncus*) margins are a typical habitat, and range from lowlands up to moderate altitudes. Mated pairs lay eggs ‘in tandem’ the female often submerging to insert eggs into plant stems. Unlike most other damselflies, the Emerald normally has a one-year life cycle, its relatively large larvae developing rapidly in one summer.

This is a ‘summer species’, emerging in July and then remaining on the wing until September or even October if weather permits. Widespread and often abundant throughout the county.



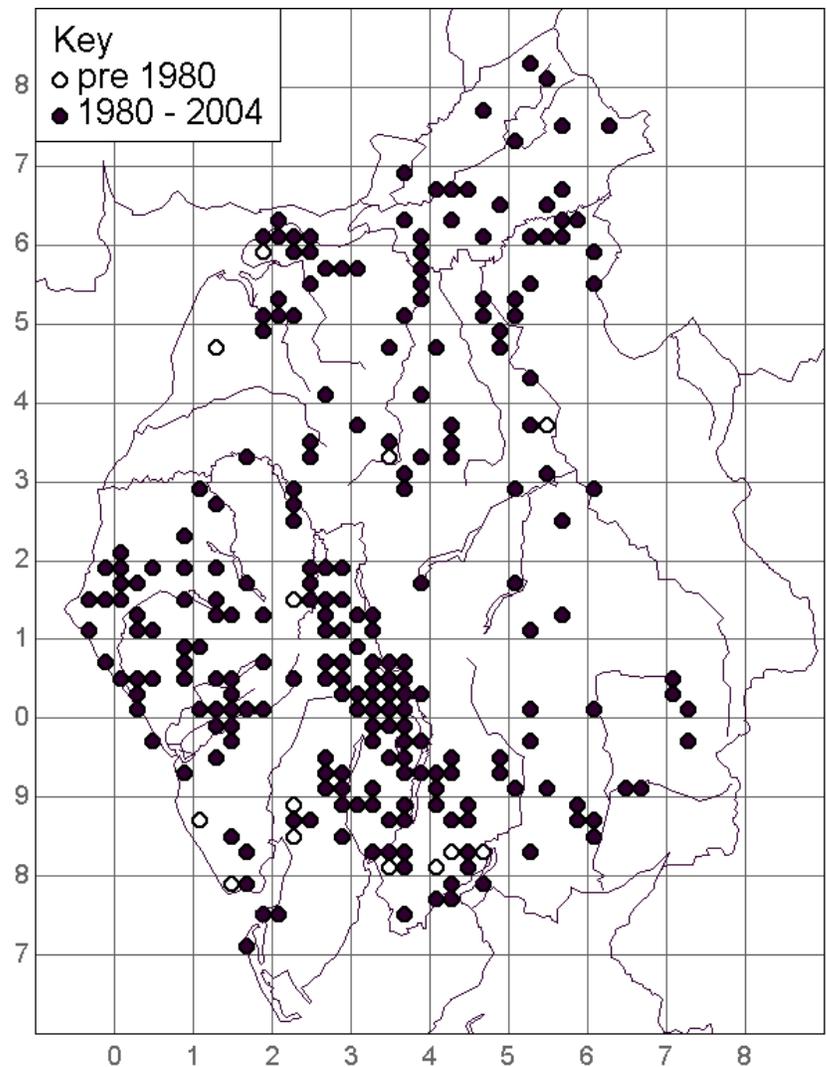
Large Red Damselfly

Pyrrhosoma nymphula

The only red-bodied damselfly occurring in Cumbria. Both sexes have red eyes, and black legs. Though still showing some red, the female has a predominantly black body.

A widespread and common species, often found far from water. The Large Red Damselfly is found in many habitats, from garden ponds and ditches, to lakes, tarns and acid moorland pools and flushes. The male and female remain 'in tandem' whilst the females descends just below the water surface to lay eggs into aquatic plants. The larval stage lasts two years.

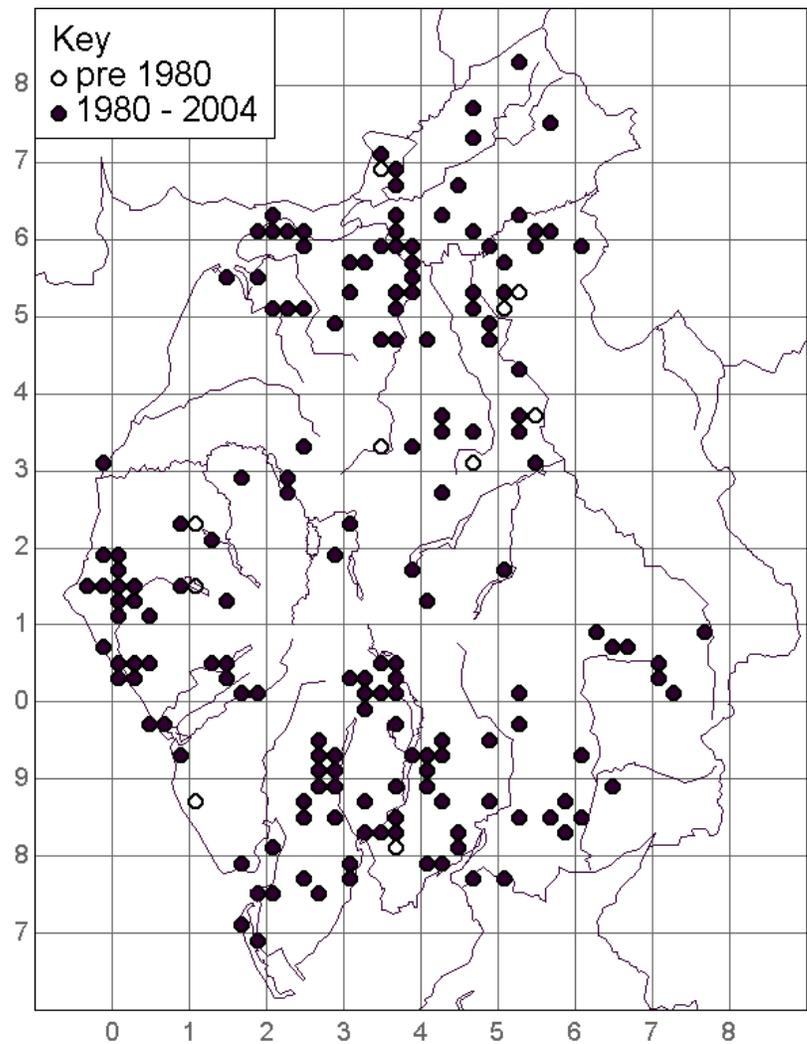
Emergence often begins in April in good seasons, and the flight period usually extends until August. One of the most widespread species of Odonata - found throughout the county.



Common Blue-tailed Damselfly

Ischnura elegans

A delicately built damselfly, the predominantly black body having a conspicuous blue segment just before the tip. (Note: black-bodied damselflies with some blue on each segment are likely to be females of other species). The female may be similar in colour to the male, except that the stripes and sides of the thorax may be violet or pinkish at first, maturing variously to a yellowish, brownish or blue colour. In some variants, the blue patch is replaced with brown. (The related Scarce Blue-tailed Damselfly (*I. pumilio*) has not been found in Cumbria and is associated with lime-rich flushes: it is smaller, with the blue 'spot' mainly on 9th, not the 8th, segment).



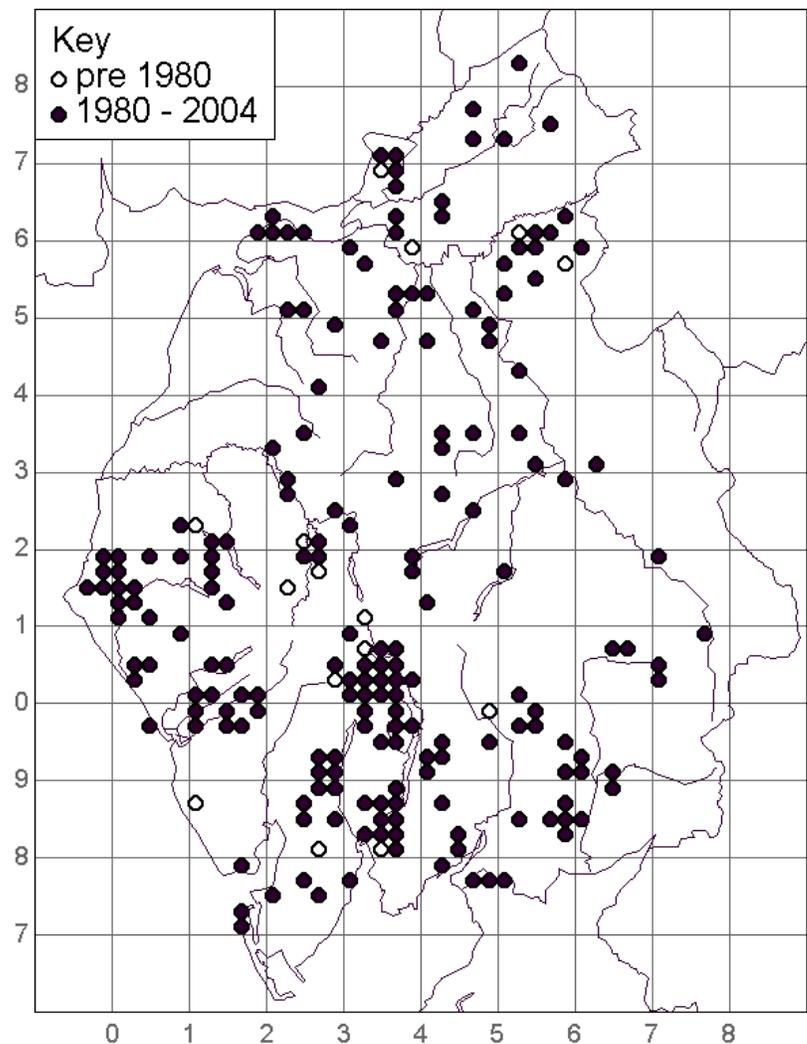
A very widespread and common species, and known to be more tolerant of moderate levels of pollution than most others. Found at all but very exposed sites, requiring the shelter of some marginal vegetation. The female lays eggs into submerged water plants, but does so alone, unlike most other damselfly species.

Normally emerges in June, with flight period continuing into September. Common and widespread in Cumbria.

Common Blue Damselfly

Enallagma cyathigerum

One of three damselfly species having males with a predominantly blue abdomen. The marking on the segment at the base of the abdomen is an important identification character and in this species normally takes the form of a black spot with a short 'stalk' – but this may vary and several specimens should be examined if possible. The stripes on top of the thorax are particularly broad. Females have much more black on the abdomen and are best identified by the males they are associated with. There is a projecting spine on the underside of the female's abdomen, somewhat before the tip.



Found on many kinds of static water bodies, including sites with minimal emergent vegetation. It is often the only damselfly species to be found at bare-margined sites; also found at exposed upland tarns and larger bog-pools where there is sufficient open water. The males often fly and perch together in 'swarms' – though this may just be because they are congregating in optimal conditions. The male and female remain 'in tandem' until the female begins to lay; the female inserts eggs into stems of water plants. The larvae develop over two years.

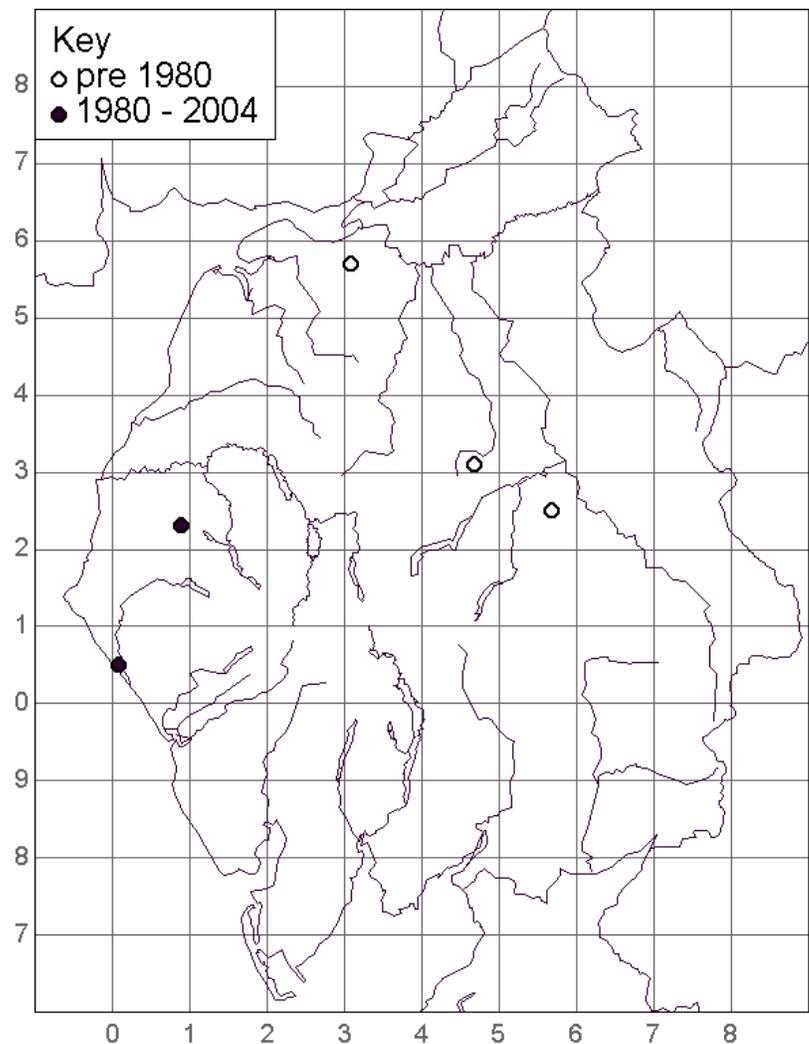
Emerges in June and is then on the wing until September/October. Found everywhere, and often very abundant.

Emerges in June and is then on the wing until September/October. Found everywhere, and often very abundant.

Variable Damselfly

Coenagrion pulchellum

One of three damselfly species having males with a predominantly blue abdomen. The marking on the segment at the base of the abdomen is an important identification character, and in this species normally takes the form of a black U with a short 'stalk' – but this may vary and several specimens should be examined if possible. The stripes on top of the thorax are typically broken (like an exclamation mark), but not always! Females have much more black on the abdomen and are best identified by the males they are associated with; the shape of the rear margin of the segment immediately behind the head may help to confirm their identity. It may be necessary to obtain a (single) voucher specimen to establish proof of identity at unrecorded sites.



Appears to prefer pools and tarns with a neutral fen type of vegetation. Flies amongst emergent vegetation and in bays and sheltered ditches, generally avoiding open water. Male remains 'in tandem' with female while she lays eggs into submerged plant stems.

The flight period is usually within the months of June to August. Rare in Cumbria and northern England, though with many sites in SW Scotland. Only two sites are known in Cumbria, both in the western coastal plain. At least two sites have been lost historically from the Eden valley. There is a Cumbria Local Biodiversity Action Plan for this vulnerable species.

Azure Damselfly

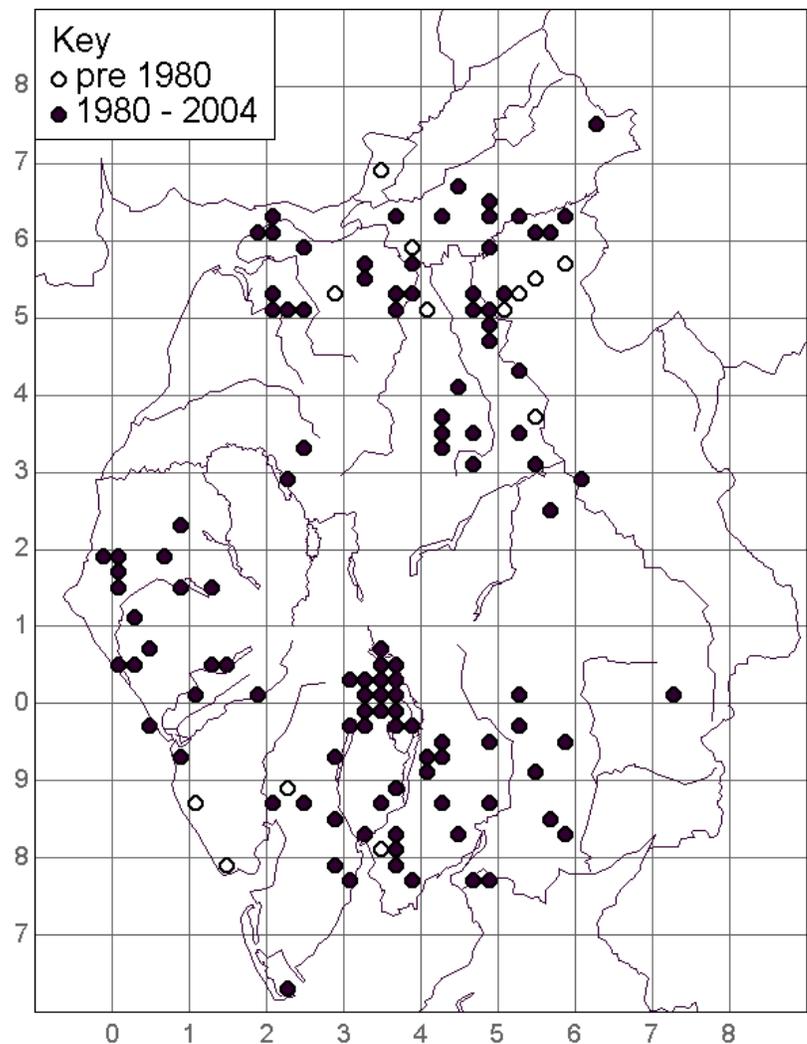
Coenagrion puella

One of three damselfly species having males with a predominantly blue abdomen. The marking on the segment at the base of the abdomen is an important identification character and in this species normally takes the form of a black U with a rather flattened base and no 'stalk' – but this may vary and several specimens should be examined if possible. The stripes on top of the thorax are normally unbroken (see *C. pulchellum*). Females have much more black on the abdomen and are best

identified by the males they are associated with; the hind margin of the segment behind the head is much less indented than in the Variable Damselfly female.

The most frequent 'blue' species of small weedy pools, garden ponds and lowland ditches, and often very numerous. Prefers fairly sheltered conditions with abundant marginal/emergent vegetation. Male remains 'in tandem' with female while she lays eggs into submerged plant stems.

Widespread in lowland Cumbria, where it is on the wing during June, July and August.



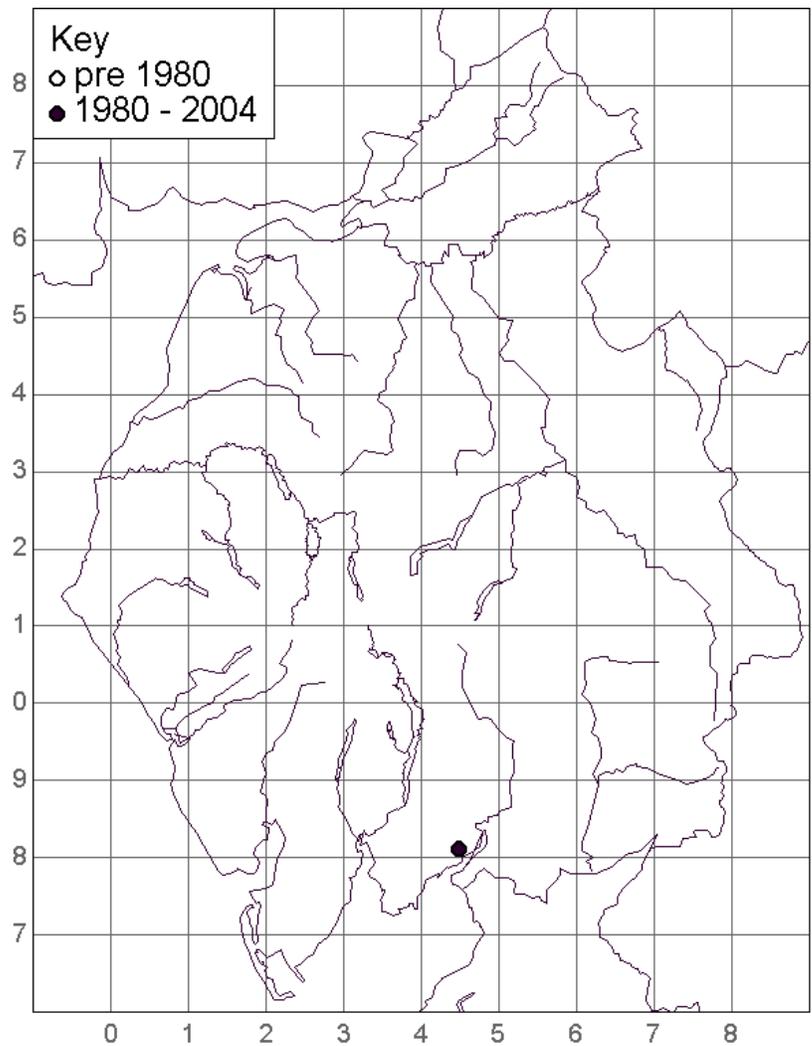
Hairy Dragonfly

Brachytron pratense

A largish dragonfly with paired spots on the body – blue in males, and yellowish in females. The name refers to the dense whitish hairs on the thorax and abdomen. The species looks rather similar to other blue-spotted dragonflies – but its spots differ in being pear-shaped (rather than transverse/circular). Its very early flight-period can be a useful indicator of its identity.

The Hairy Hawker is a dragonfly of lowland water-bodies that are not too acidic. It is found especially in fenland habitats and most of its English sites are in the southern half of the country. It has a few sites in southern and western Scotland, but is largely absent from northern England. It likes to lay eggs into floating debris of water plants such as Bulrush and Common Reed.

The flight period is very early, from mid May, and often finishing by early July. Until 2003 there were no Cumbria records. A single male was seen in early June of that year at Meathop Moss (where there is no suitable breeding habitat). No obvious local breeding habitat is known, and it is possible this may have just been a wandering individual, perhaps from Ireland.



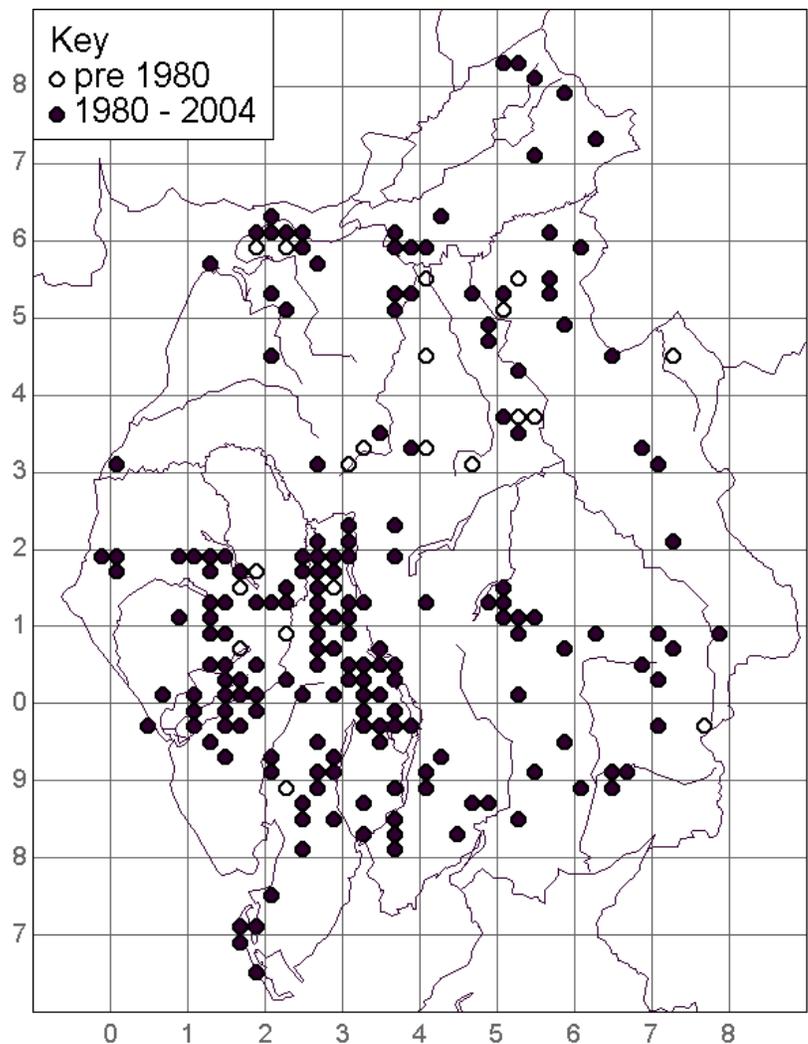
Common Hawker

Aeshna juncea

A large dragonfly with a blue- or yellow-spotted body. The spots near the end of the body do not merge to form bands (see Southern Hawker). Blue-spotted individuals are normally male; females are most frequently yellow-spotted, but their spots can be greenish, or sometimes even blue! Its single most distinctive feature is the golden-yellow vein at the leading edge of the wings – though this can rarely be seen in flight.

Common Hawkers are dragonflies of moorland and upland habitats, often breeding in quite acid waters. They are very hardy and will use bog-pools and small tarns and even slow runnels at sites up to 600 metres above sea level. The eggs are laid by the unaccompanied female into moss or water plants just below the surface of the water. Larval development may take two years, or more in exposed habitats.

The flight period normally begins in late June and can continue until early autumn. The species occurs throughout Cumbria and is the most widespread large dragonfly, often seen hawking in woods and lanes far from water. It seems less inclined to breed in small garden ponds than the Southern Hawker.



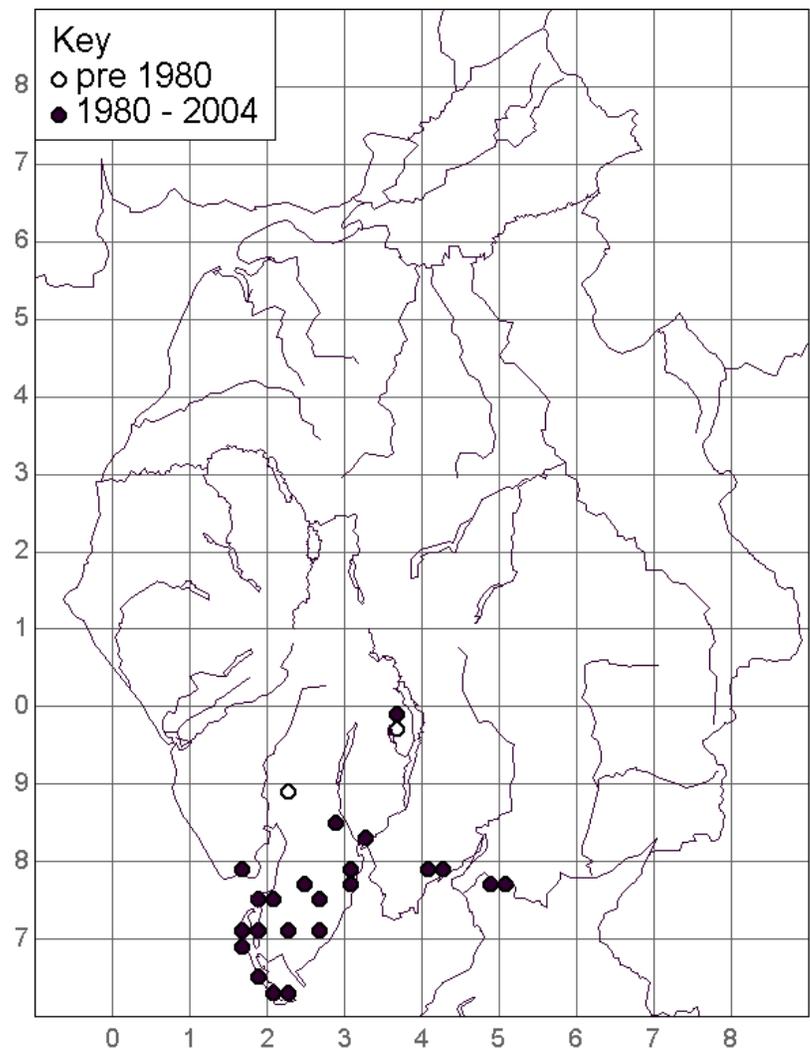
Brown Hawker

Aeshna grandis

A large and distinctive dragonfly with a predominantly brown body. The male has a pair of blue spots on the base of the abdomen, and blue spots along the edges of most segments; the female lacks the basal spots and the lateral spots are yellow. The sides of the thorax are yellow-banded and the wings have a noticeably amber tint.

The Brown Hawker is one of the most abundant large dragonflies throughout much of southern and midland England. It is more tolerant of semi-polluted habitats than most species and will breed in working canals, and pools on industrial sites as well as in large pools and lakes. The female usually lays eggs into floating timber or vegetation close to the waters edge.

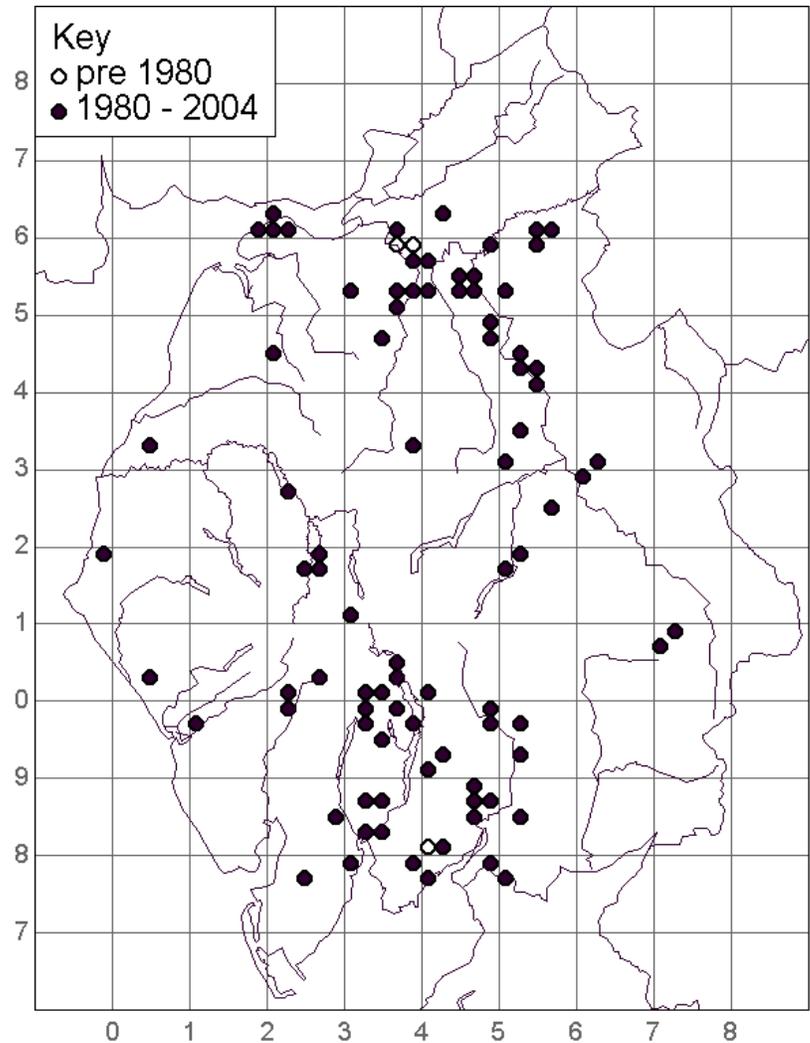
The flight season is high summer, with emergence beginning in July. The species has long been known from the extreme south of Cumbria – from the Morecambe Bay coast round to Walney Island. Egg-laying has rarely been observed. Unlike some other ‘southern’ species, the Brown Hawker has shown little sign of extending its range northwards in recent years.



Southern Hawker

Aeshna cyanea

A large hawk, with colourful markings. The body has paired spots, which are blue in the male and usually yellow or green in females. The spots at the tip of the body are merged to form bands – which is a useful diagnostic feature. There are two spots on the top of the thorax are larger than in other hawkers and more rounded in shape. The species is unusual in its inquisitive nature – males especially will approach observers (harmlessly!) at close quarters.



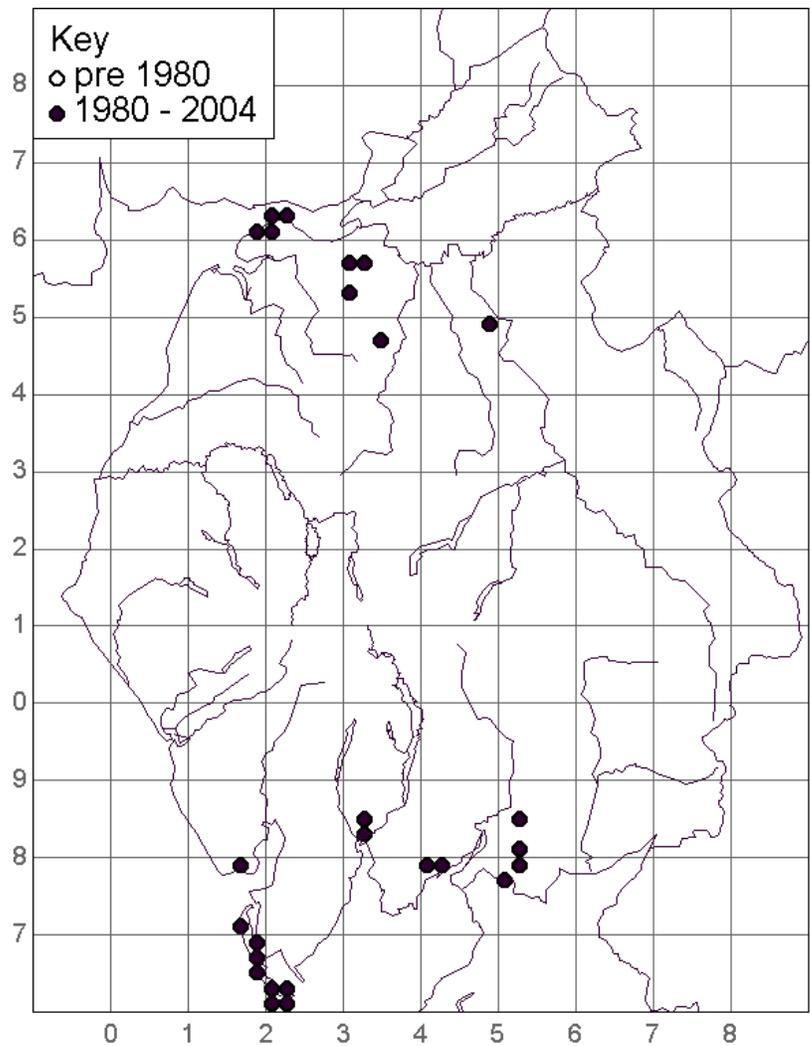
Breeding occurs at a wide range of lowland waters, though tending to avoid the more acid sites. It is by far the most frequent large dragonfly of garden ponds, and even quite small ponds may be visited by egg-laying females. Eggs are laid just above water level into moss, logs or other bank materials. The eggs hatch the following spring and development usually takes two years.

Emergence usually begins in late June and the flight season lasts well into autumn. The species seems to have increased in the county over the past 20 years or so and is now fairly widespread in Cumbria, except in the uplands.

Migrant Hawker

Aeshna mixta

A medium-sized hawk dragonfly, so-called because of its tendency to population movements in good weather. The male resembles other blue-spotted species, and is most readily recognised by a yellow 'golf-tee' mark just behind the base of the wings, and the reduced stripes on the top of its mid brown thorax. Females and immatures are a dull grey-brown on the abdomen. More sociable and non-aggressive than other hawkers, the Migrant may occur in some abundance at any one site; it tends to perch more often than its larger relatives, hanging vertically on vegetation.



Migrant Hawkets breed in a variety of lowland waters, including water-filled ditches, especially when these have thick marginal and emergent vegetation. Sheltered, warm sites are required for the fast (one-year) larval development. Adults are often seen well away from water, along hedges and forest rides. The British range has extended markedly over the past 50 years or so and the species is now seen throughout most of England and Wales.

The Migrant Hawker is a late summer species, not usually emerging before late July. It may be on the wing until October or even November in mild autumns. There are no Cumbria records before c.1999. Since then it has been regularly seen in the extreme south, and usually not far from the coast. The good summer of 2003 resulted in many sightings near the Solway Firth, and the highest annual numbers to date. It is not yet proved to breed in the county, though pairing has been noted.

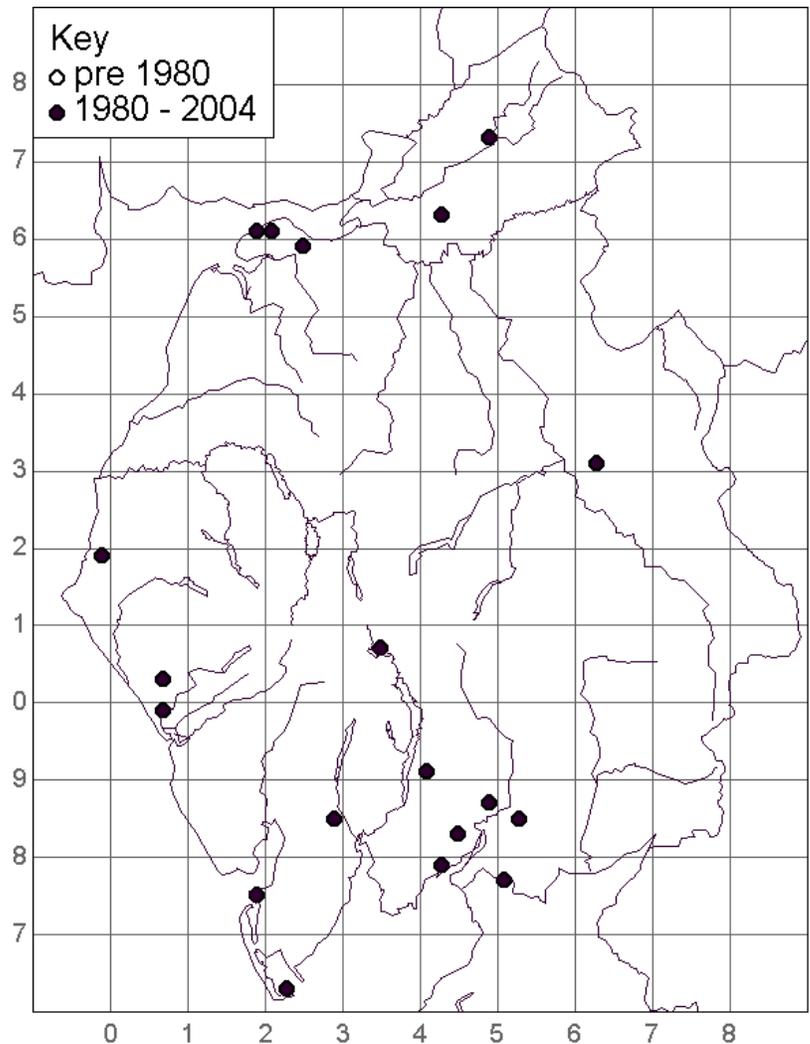
Emperor Dragonfly

Anax imperator

A large species and a powerful flyer, often showing aggression to other dragonflies. The mature male is very distinctive, with unspotted turquoise-blue body, marked mid-dorsally with a dark line. The female is similarly patterned and usually shows a greenish body colour, but may become bluer in hot weather.

Emperors will breed in a wide variety of large ponds, lakes and canals, where there is at least some floating vegetation into which to lay their eggs. Development usually takes two years. The species is widespread in Britain south of a line from the Humber to the Mersey. In good summers adults may wander well beyond their usual range and may then found temporary colonies that may persist for a few years and then disappear.

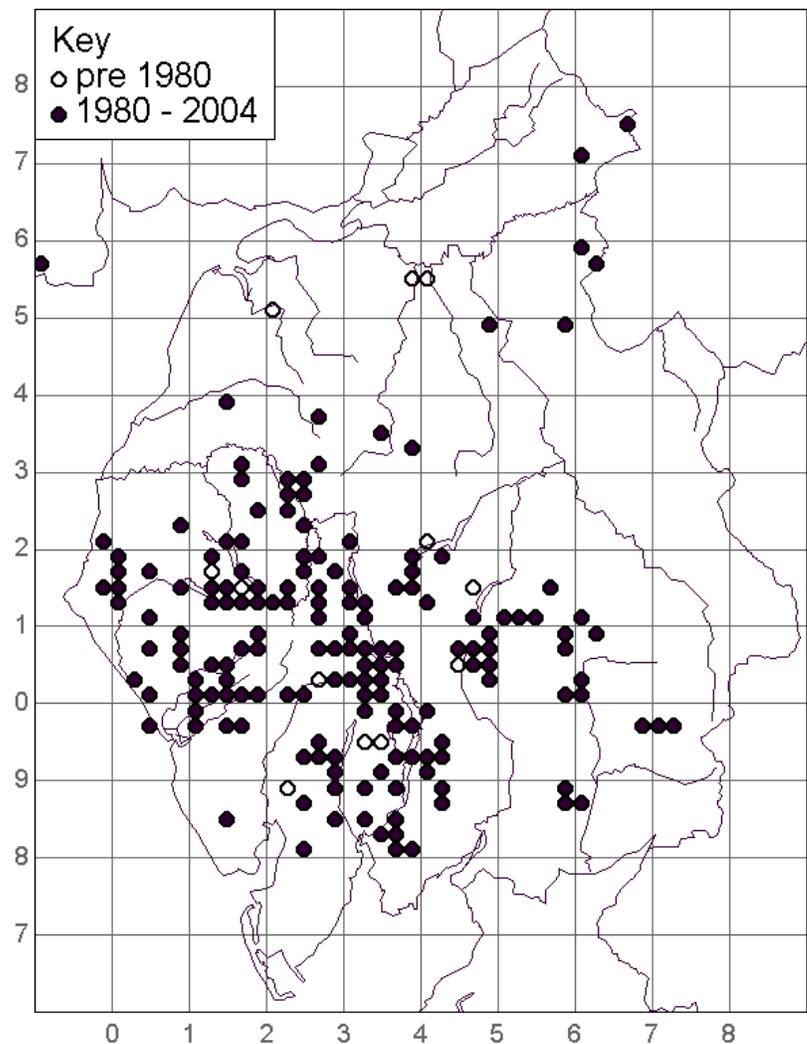
The Emperor is a 'spring species': adults emerging from late May onwards. The flight season can last into September in very good seasons. Emperors were first recorded in Cumbria in 1995 and are now seen with increasing regularity, though breeding has only once been confirmed. 2003 proved an unusually productive year for sightings in the north of the county.



Golden-ringed Dragonfly

Cordulegaster boltonii

One of the largest British dragonflies, uniquely with a black body conspicuously marked with almost complete yellow bands (i.e. not spots). When mature, its eyes are a bottle green colour. Both sexes are similarly marked, the female having hind wings rounded (rather than angled) at their bases. The female has the slightly longer body, by virtue of a short terminal ovipositor (egg-laying tube).



Golden-ringed Dragonflies lay eggs in slow-flowing gravelly streams and runnels where their larvae take at least two seasons to develop. They are not normally found on large rivers. The species is especially characteristic of moorland habitats. Adults may spend time well away from water, hawking for insect prey. (They not infrequently catch and eat bumblebees!) They are strong fliers and can turn up almost anywhere. The species occurs through the Britain, though not in Ireland.

Adults are found from May through to late autumn. In Cumbria, the Golden-ringed Dragonfly is most frequent in the Lake District, and may be found at quite high altitudes. It is less frequent in cultivated lowland areas, where there may be fewer suitable breeding habitats.

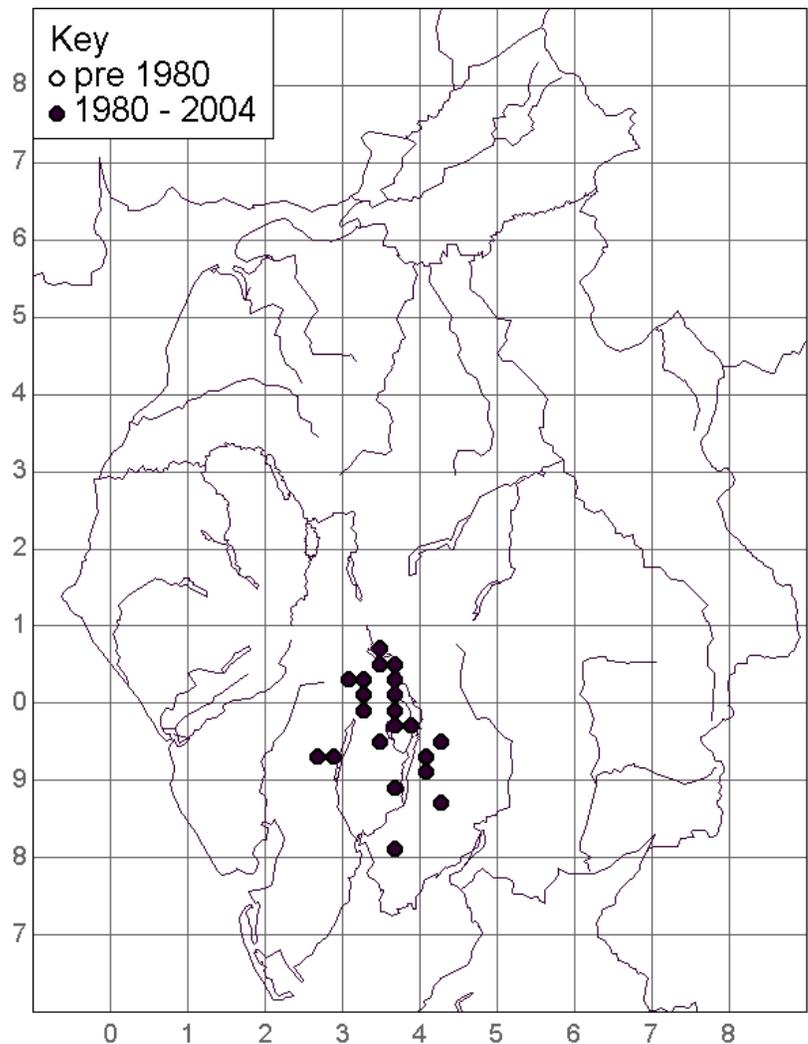
Downy Emerald

Cordulia aenea

A medium-sized hawker dragonfly with a dark metallic bronze-green body, and emerald green eyes (brown when immature). The sexes are similar in appearance. A tireless flyer – males patrol breeding lakes and tarns at speed, just offshore. Their slightly head-down-tail-up pose in flight is noticeable. The hairiness of the thorax in particular gives the name ‘Downy’.

The Downy Emerald has a rather discontinuous British distribution, with scattered populations from southern England to the Scottish Highlands. It seems particularly associated with areas of ancient woodland. The species breeds in a variety of lakes and tarns in the vicinity of woodland, though avoiding really small pools. The rather long-legged spider-like larvae are weed-dwellers.

This dragonfly is a ‘Spring species’, emerging in May and often completing its flight season by early July. It has strong populations in Cumbria, where it is however limited mainly to lowland tarns in the south-central Lake District.



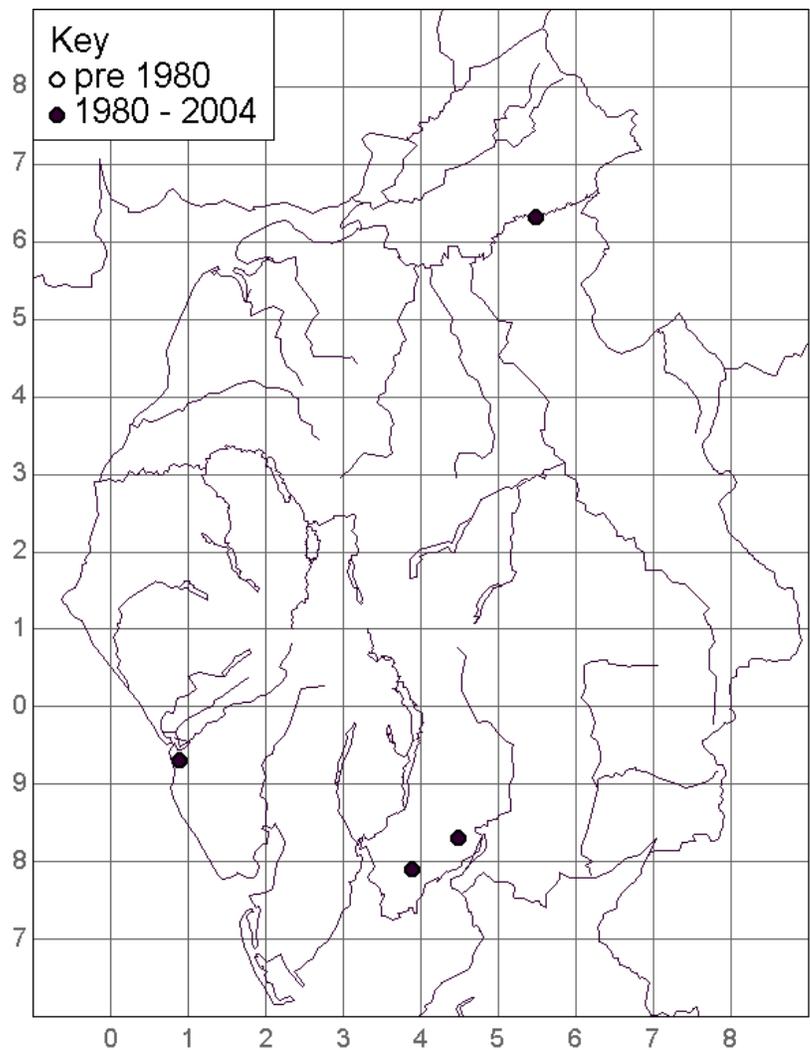
Broad-bodied Chaser

Libellula depressa

A distinctively-shaped dragonfly, having an especially broad cigar-shaped body. The mature males have a yellow-edged blue body without any dark markings. Females and immatures are tawny coloured, the mature females showing conspicuous yellow 'side-flashes' to their bodies. Both sexes have dark markings at the wing bases.

This is a common dragonfly through much of southern Britain, favouring lowland ponds, pools and gravel pits with bare margins. Eggs are dropped direct into water as the female dips her body to the surface in flight. The rather stout-bodied larvae live in the debris at the bottom of pools.

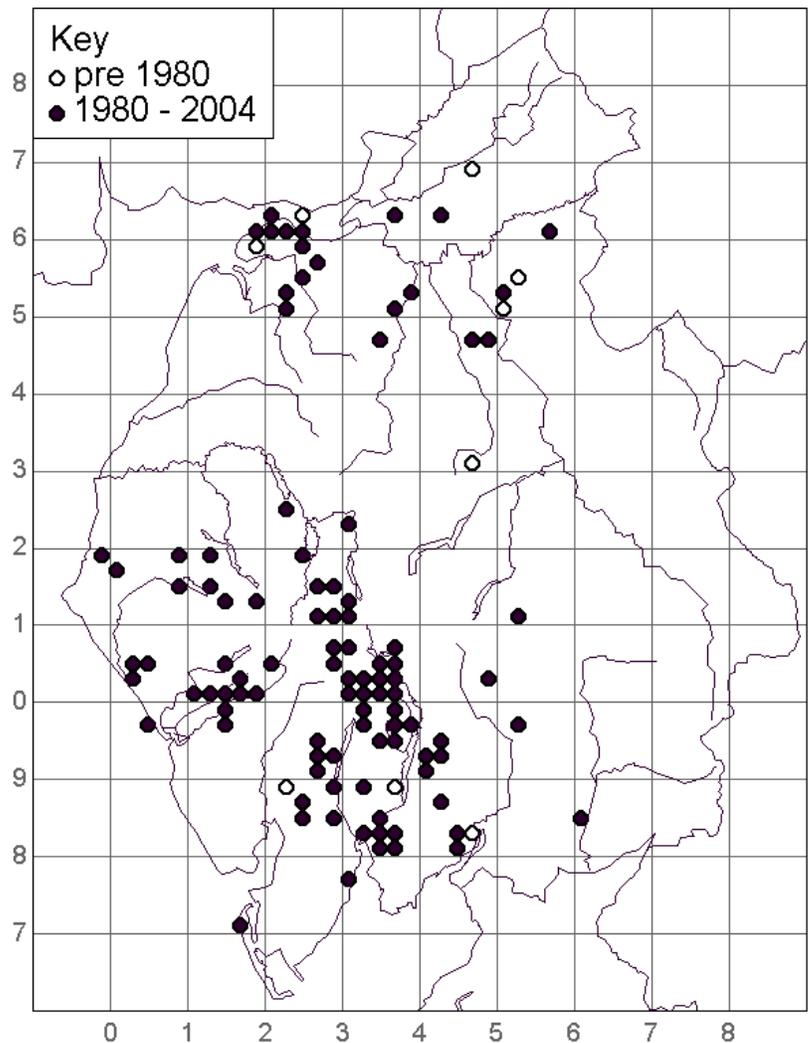
The species emerges from late May and is on the wing until August. It has been spreading northwards in the UK for the past half-century or more. Records from Cumbria are still very few, but have included the south, the west and north of the county.



Four-spotted Chaser

Libellula quadrimaculata

A broad-bodied tawny-coloured dragonfly of moorland and acidic habitats. The name refers to the small patch of dark colour at the mid front edge of each wing. The body is a brownish colour, darker towards the tip. Both sexes are similarly coloured. The thorax is quite hairy. As with other 'Chasers', the males tend to perch regularly at favourite positions overlooking the waters edge, from where they make frequent flights seeking females.



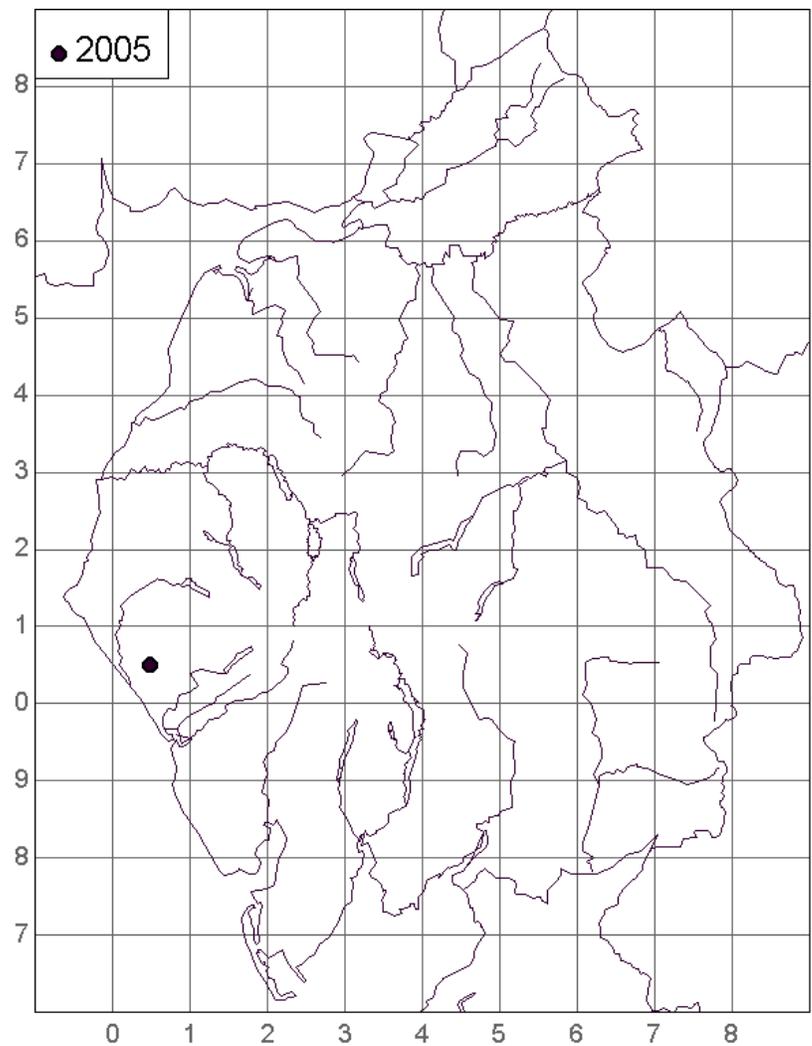
The Four-spotted Chaser is widespread on marshy tarns, pools and *Sphagnum* bogs throughout most of Britain. It can often be abundant, and is very tolerant of poor weather and low daytime temperatures. Eggs are laid by dropping them directly into water as the female dips her body. The larvae are rather hairy and live in debris at the bottoms of pools.

The Four-spotted Chaser emerges in mid May and is on the wing until well into August. It has a wide occurrence in Cumbria and often is most abundant at shallow well-vegetated sites.

Black-tailed skimmer

Orthetrum cancellatum

A medium-sized dragonfly, the mature males of which have a plain powder blue body with blackish terminal segments. The thorax is also dark, and unmarked on top. Females and immature males are a yellowish colour with a well-marked pair of thick, rather 'scalloped' black stripes on the upper side. The male progressively loses these as it attains the blue colour of maturity. Older females become a dull beige-brown colour.



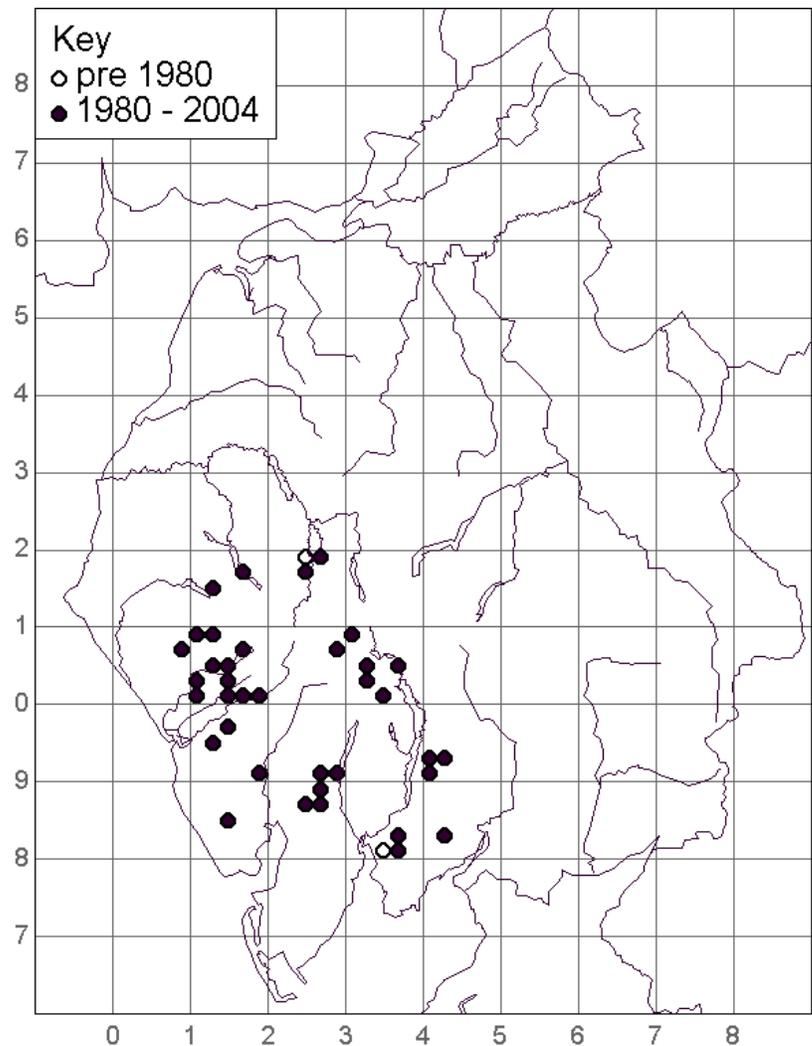
A widespread dragonfly of lakes, ponds and gravel-pits throughout much of Britain south of Cumbria and Northumberland. It is a 'pioneer' species, readily adapting to new and rather sparsely vegetated sites. Males like to bask on bare or stony places close to water. It can often be abundant where it occurs. Eggs are laid by dropping them directly into water as the female dips her body. The larvae are rather hairy and live in debris at the bottoms of pools. The species has spread northwards considerably over the past decades and appears still to be advancing.

The first known occurrence in Cumbria was in early July 2005, when a few individuals were present for about a week during hot weather at a relatively new pool near Gosforth, near the south west coast. This may have been a 'fair-weather' movement from further south; breeding was not observed. The species is established in nearby north Lancashire and so might well re-appear in future years.

Keeled Skimmer

Orthetrum coerulescens

A medium-sized dragonfly, the mature males of which have a distinctive, slender, powder blue body without any black markings. Both sexes have a pair of pale lines on the top of the thorax, and the wings are clear (though sometimes slightly yellow-tinted), without dark basal markings. Immatures and females are a tawny yellow colour and then the thorax markings are a useful indication of identity.



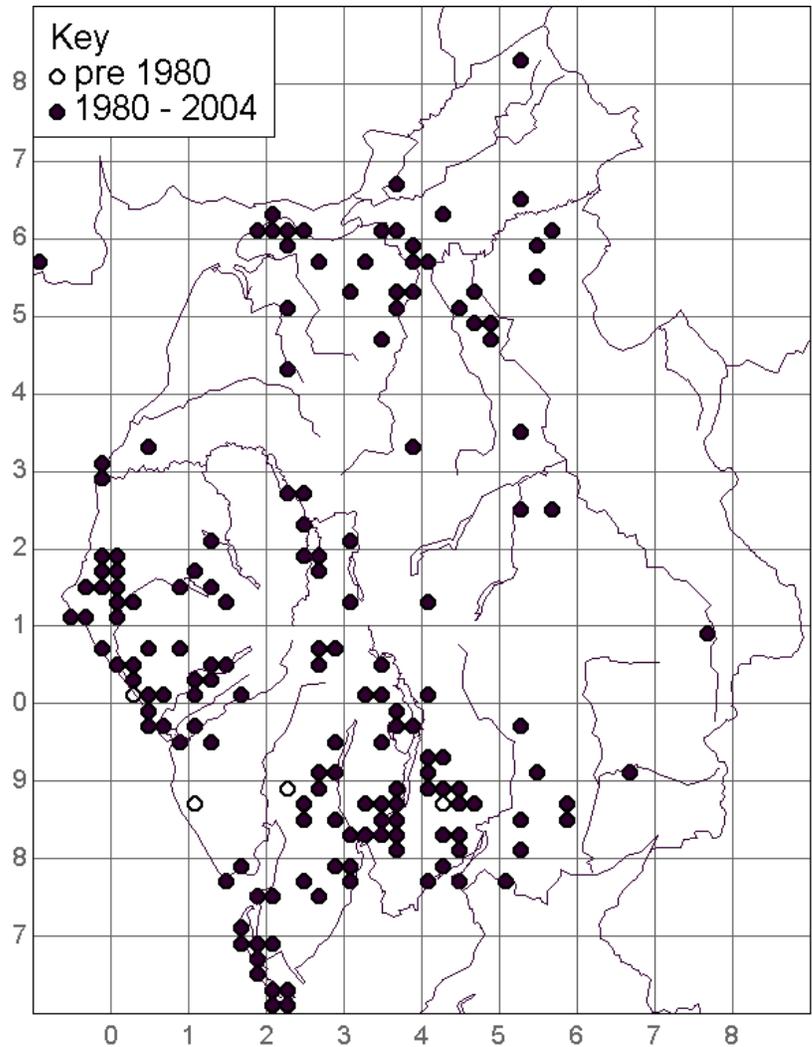
In Cumbria, the species is virtually confined to slow-flowing acid runnels and seepages, which often have adjacent *Sphagnum* 'lawns'. Adult males actively patrol the seepages, and interact aggressively with one another. Females lay eggs unattached to males, though may be 'guarded' by their mate during this process. The rather bumble bee-shaped larvae live in the peaty detritus of the runnels.

The flight period typically extends from early June until well into August. The Cumbria sites are all at under 250 metres a.s.l., and are mainly found in and around the central, southern and western Lake District. There is a very recent (2005) record for the n-e edge of the Lake District.

Common Darter

Sympetrum striolatum

The most widespread darter dragonfly in Cumbria, and one of the commonest species nation-wide. The straight-sided orange-red body of the mature male is immediately eye-catching, and the species' habit of repeatedly perching on the same low vegetation or light-coloured surface is also noticeable. Immature examples are frequently to be found feeding up in sheltered areas some distance from water. The legs of both sexes and all ages are black with a pale longitudinal line on the femur. 'Red darters' as a group require care in diagnosis as there are several closely-related species (including rare migrants).



The species will use a very wide range of water-bodies, including garden ponds and even bare-margined lakes and reservoirs. It habitually lays eggs with the male and female joined 'in tandem'. The rather spider-like larvae normally develop in one year, and may be hugely abundant. The Common Darter is a known migrant and in favourable years local populations may be swollen by immigrants, especially in coastal areas.

This is predominantly a lowland species. The adults are on the wing from early July until late in the year – and are usually the last dragonfly species to be seen on the wing: records extend well into November.

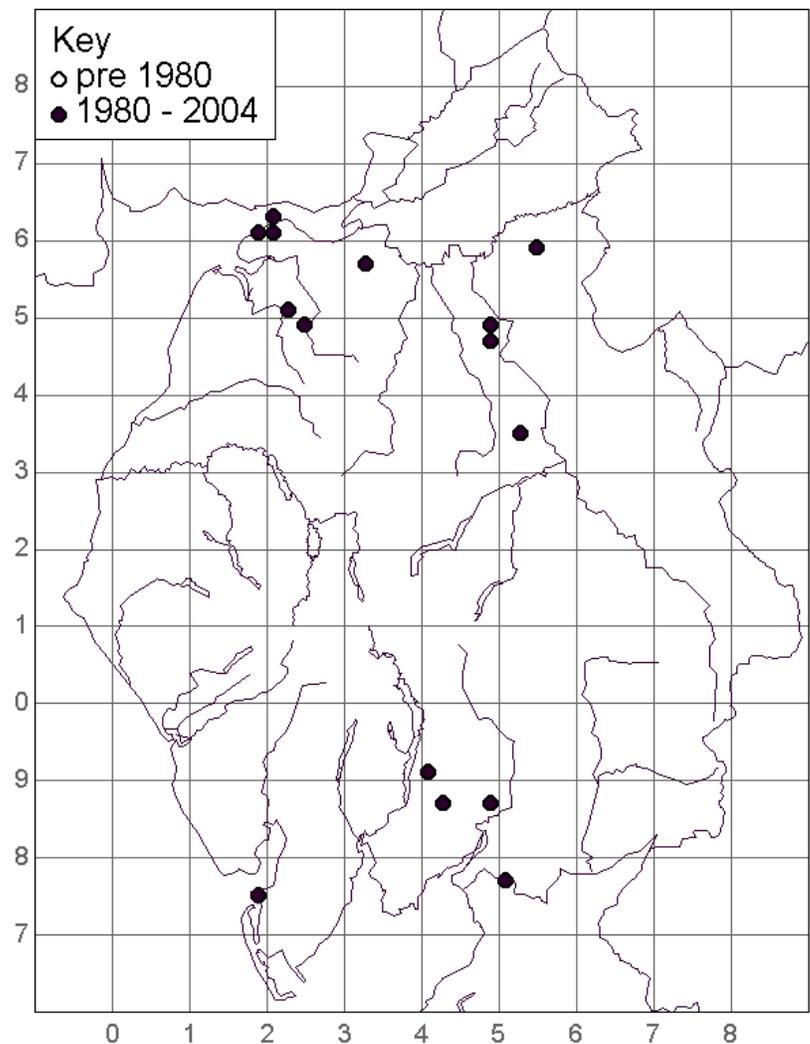
Ruddy Darter

Sympetrum sanguineum

A fairly distinctive and very red-bodied dragonfly, slightly smaller than the Common Darter, with which it often occurs. The blood-red colouration of the mature male, with abdomen of slightly 'waisted' shape and legs of solid black (without any yellow) help to distinguish it from the Common Darter. The yellowish-brown females are not so-shaped, though still have all-black legs.

Like other *Sympetrum* species, the Ruddy regular perches on chosen spots, though often a little distance back from the water's edge. Males chase females over waterside vegetation, but rarely hover over open water in the manner of the Common Darter. Eggs are scattered over waterside vegetation that may only be flooded during winter. Like the Common, it usually oviposits 'in tandem', 'dipping' at regular intervals.

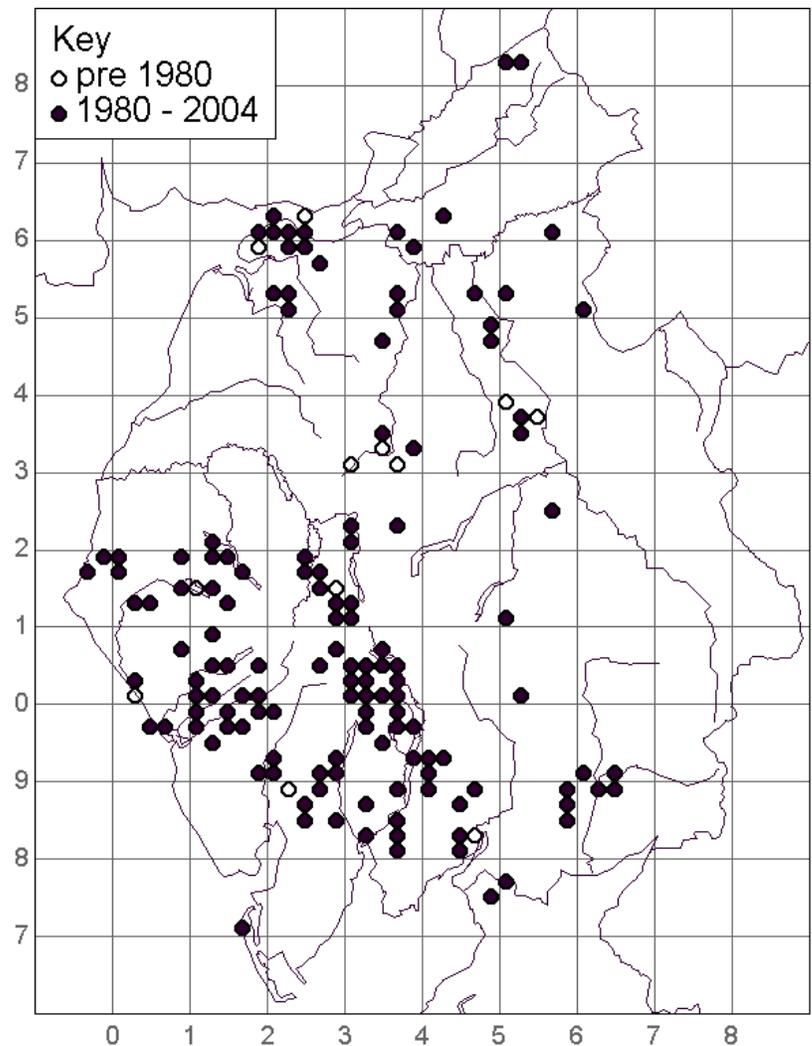
The Ruddy Darter seems to prefer lowland sites with shallow well-vegetated margins. It has spread north in Britain over the past half-century and was first noticed in Cumbria in 1997, and has since been found at scattered sites in both the north and south of the county. It is normally on the wing from early July until about the end of September.



Black Darter

Sympetrum danae

The commonest darter species of acid/moorland habitats. The mature male is distinctively almost wholly black, except for some yellow on the sides of the thorax and near the base and tip of the abdomen. Immatures and females are predominantly a golden yellow with black on the sides. A dark triangle on top of the thorax is a useful diagnostic feature for the species. The males darken as they mature, concealing most of these markings. The legs are solid black, as in the Ruddy Darter, and the males have a 'waisted' abdomen.



The species may occur in considerable abundance at favoured sites, which often have *Juncus*-margined pools. Like other darters, it frequently perches. Pairs usually remain 'in tandem' to lay eggs over shallow water.

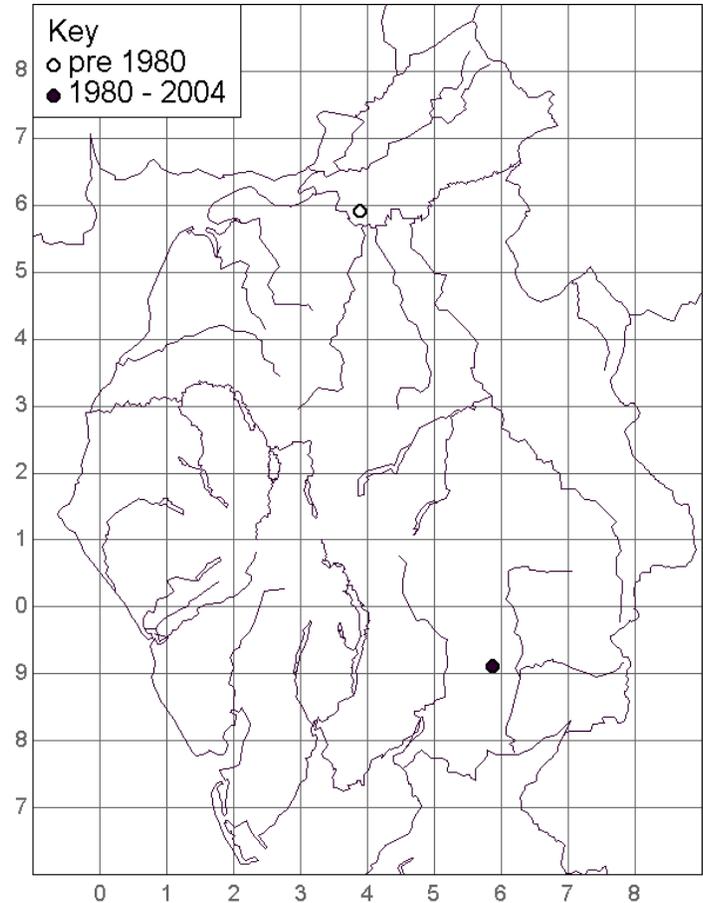
This is a summer species, usually emerging from mid July onwards and remaining on the wing until October. It is widespread in Cumbria, and may occur at moorland sites up to about 350 metres.

These two European species have both occurred as rare migrants to Cumbria and are likely to retain this status.

Yellow-winged Darter

Sympetrum flaveolum

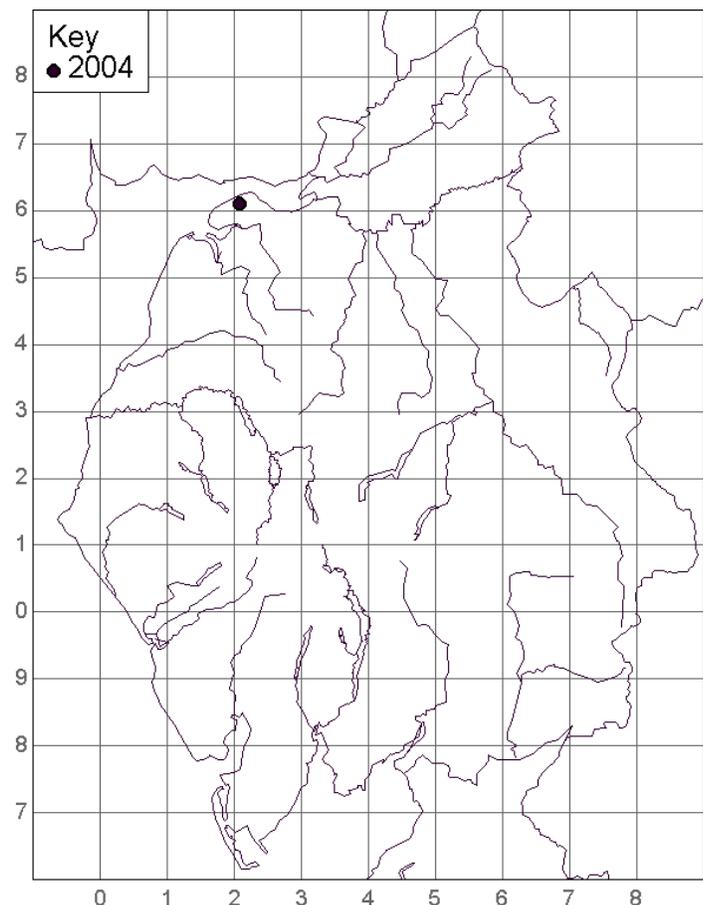
The **Yellow-winged Darter** uniquely has large amounts of saffron-yellow coloration to the basal area of each wing, particularly on the hind-wings. It has bred but is not established in the UK, and has occurred in Cumbria as single individuals on two or three occasions. The most recent was at Killington Reservoir in August 1995. Future records may depend on migratory influxes into southern Britain, which occur at irregular intervals.



Scarlet Darter

Crocothemis erythraea

The **Scarlet Darter** is a stout-bodied species with a pure blood-red coloration in the mature male. The females and immatures are yellowish. It is a vagrant to the UK, with only a handful of sightings: a record of a semi-mature male at Bowness-on-Solway on 30 August 2004 has been accepted nationally.



White-faced Darter

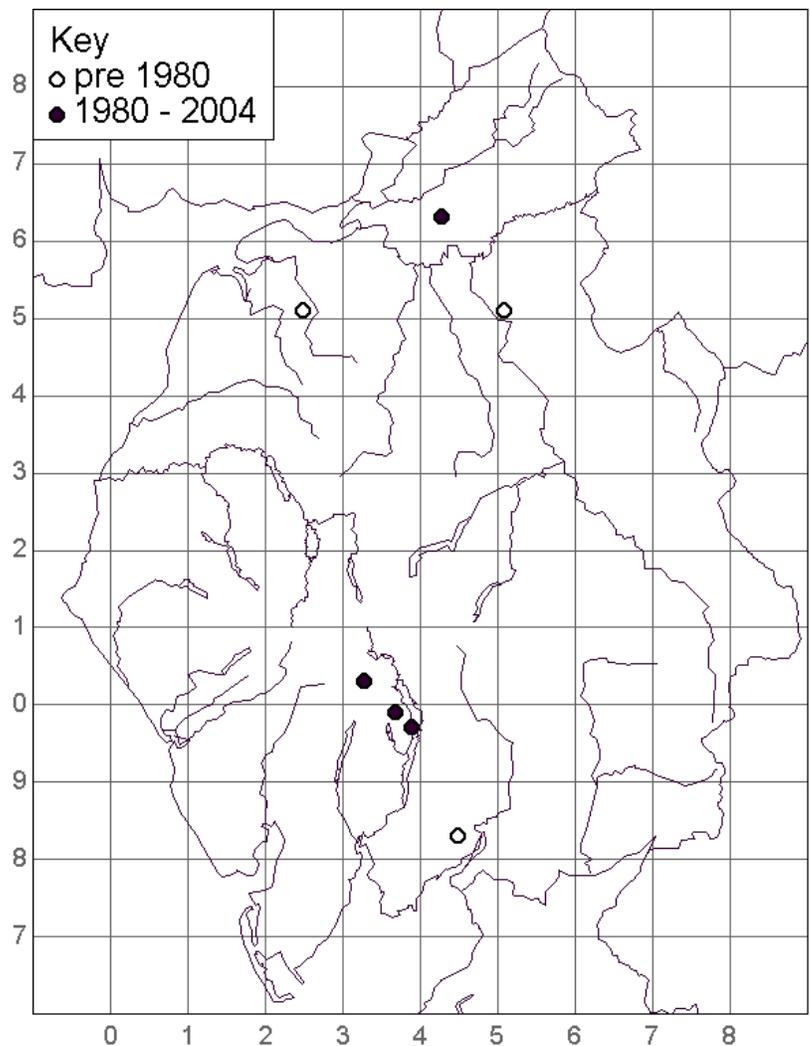
Leucorrhinia dubia

An attractively marked small dragonfly of peat bog habitats, this is the only 'red' darter with black markings at the wing bases. The males have a mainly black abdomen marked with red on several segments; immatures and females show yellow instead of the red. The front of the head is pure white – hence the species' name.

The White-faced has specialised habitat requirements, which seem always to include fairly deep peaty pools with a

mixture of acid open water with *Sphagnum* 'lawns' or rafts. Pine/birch woodland is often a feature of sites. The usual life cycle is two years, with adults emerging from mid May, the later individuals being on the wing into early August. They rarely stray far from breeding sites and can be very locally abundant at good sites in good years. The larvae are known to be vulnerable to predation by fish.

There are now only three known Cumbrian sites, two of which are very small – one being only discovered in 1999. These populations are increasingly important because of loss of several of the few English sites in recent years. The species is subject of a Local Biodiversity Action Plan in Cumbria: this aims to maintain existing populations, and possibly to introduce (or re-introduce) it at selected sites.



Further reading

Identification guides:

Brooks, S. (2002) *Field Guide to the Dragonflies and Damselflies of Great Britain and Ireland*. British Wildlife Publishing.

Powell, D. (1999) *A Guide to the Dragonflies of Great Britain*. Arlequin Press.

Smallshire, D. & Swash, A. (2004) *Britain's Dragonflies*. Wild Guides.

Dragonfly natural history:

Miller, P. L. (1995) *Dragonflies*. Richmond Publishing.

Brooks, S. (2002) *Dragonflies*. Natural History Museum.

Acknowledgements

Many thanks to everyone who has contributed their dragonfly records to the recording scheme. The distribution maps are produced from records entered onto the RECORDER database developed by JNCC and mapped using DMAP software developed by Dr. Alan Morton.

The Cumbria Biological Records Database at Tullie House Museum

Tullie House Museum operates a local biological records centre covering the county of Cumbria. Over 300,000 records of various wildlife groups, received from various sources, are stored on computer. The Museum aims to record and monitor the status and distribution of wildlife in Cumbria. Data is shared within members of the Cumbria Biological Data Network (CBDN), comprising English Nature, Cumbria Wildlife Trust, Environment Agency, Cumbria County Council, Lake District National Park Authority, the National Trust, Cumbria Naturalists' Union, and Tullie House Museum. The information is used to increase the knowledge of the wildlife of the county and to inform decisions affecting the wildlife and countryside of Cumbria.

The Museum welcomes information and records concerning the flora and fauna of Cumbria. Please direct all correspondence to the Keeper of Natural Sciences, Tullie House Museum, Castle Street, Carlisle CA3 8TP.

Email: nature@tulliehouse.co.uk

