Hertfordshire Dragonfly Atlas 2022-2027

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Introduction / summary of progress

2000-2005 Atlas survey

The first full survey of the dragonflies and damselflies in Hertfordshire was organised by Alan Reynolds, Christine Shepperson and Tom Gladwin, in conjunction with the Hertfordshire Natural History Society, with the results published as an atlas in 2008 following six years of survey work between 2000 and 2005.

During this original survey, 22 species were recorded within the modern county of Hertfordshire, with 19 of these species confirmed to have successfully bred in the county or considered to be probably breeding during the survey years.

In total, 14,641 records were collected from 119 different observers.

Intentions of current survey

The intention of the current survey is to again provide full coverage of the modern county of Hertfordshire (which hasn't been subject to any border changes since the previous survey), while also covering areas that are now outside the modern county boundaries but within the 'Watsonian Vice County of Hertfordshire' (VC 20) – mainly some parts of the Barnet area that are now in Greater London, part of the Kensworth / south Dunstable area that are now in modern Bedfordshire, and parts of the Lea Valley that are now in modern Essex.

Covering the modern county of Hertfordshire will allow quantifiable analysis of any changes in species distributions to be made, which can help to identify if species are declining, and can potentially help to guide where conservation efforts might be beneficial.

Also covering the vice county can potentially mean that it is easier to compare changes in the future because vice county borders were fixed when they were set up in 1852 and therefore cannot be affected by any future administrative changes to modern county boundaries.

Progress of the 2022-2027 survey so far

As of mid-November 2026, almost 5 full years into the six-year survey period, over 18,500 records have been provided by just short of 400 named observers, and a total of 32 species have been recorded, with 29 of these either confirmed to be breeding or probably breeding in the county.

Although the number of recorders, and the records that have been submitted, will have increased, actual coverage of the county seems likely to be reasonably comparable after the last records have come in for 2026 and records from 2027 have been collected – which means that the project is on course to finish at the end of 2027.

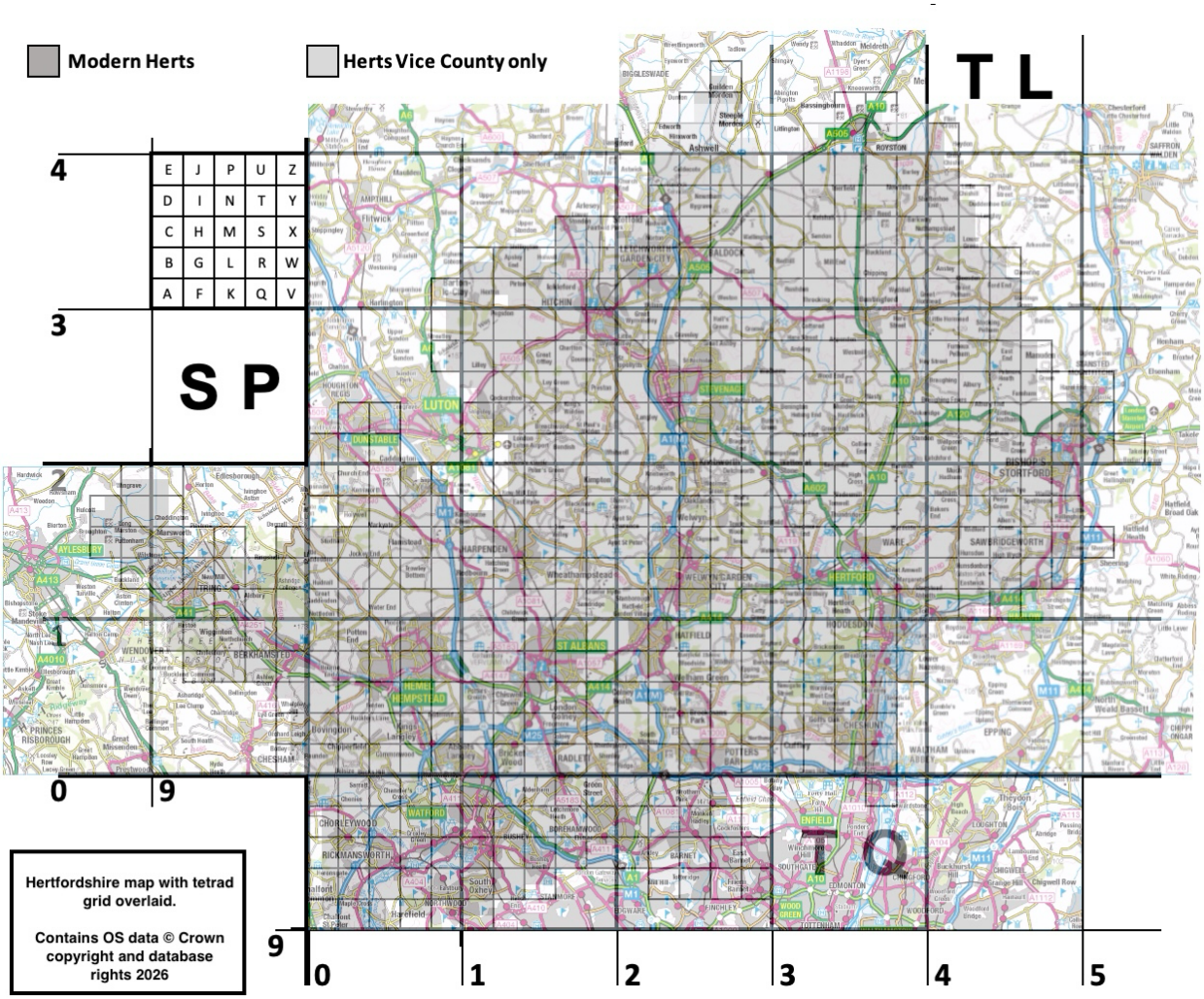
Preliminary results suggest that, in addition to the species that weren't recorded during the previous survey, a majority of Hertfordshire's dragonfly and damselfly species are either increasing or stable, although there are a few species that have clearly shown significant declines.

Most of the species with limited distribution during the previous survey, or that weren't recorded during 2000-2005, remain relatively scarce in the county, with the exception being Willow Emerald Damselfly which was first confirmed in Hertfordshire in 2014 and is currently the fifth most widely distributed species in the county, and the sixth most numerous in terms of the number of records.

Although indications are that the majority of species are increasing, there are some species that are declining. Most significantly, Emerald Damselfly has so far only been recorded from about a third of the number of tetrads that the species was found in during the 2000-2005 survey, and Brown Hawker has been recorded from just over half of the previous number of tetrads – and both species show a similar reduction in the total number of records received.

Hertfordshire map

The map below, which shows the location of towns and major roads is intended to help people to identify which tetrads are in their local area and by doing so make it easier to use the species distribution maps to see which species have been recorded in the area:

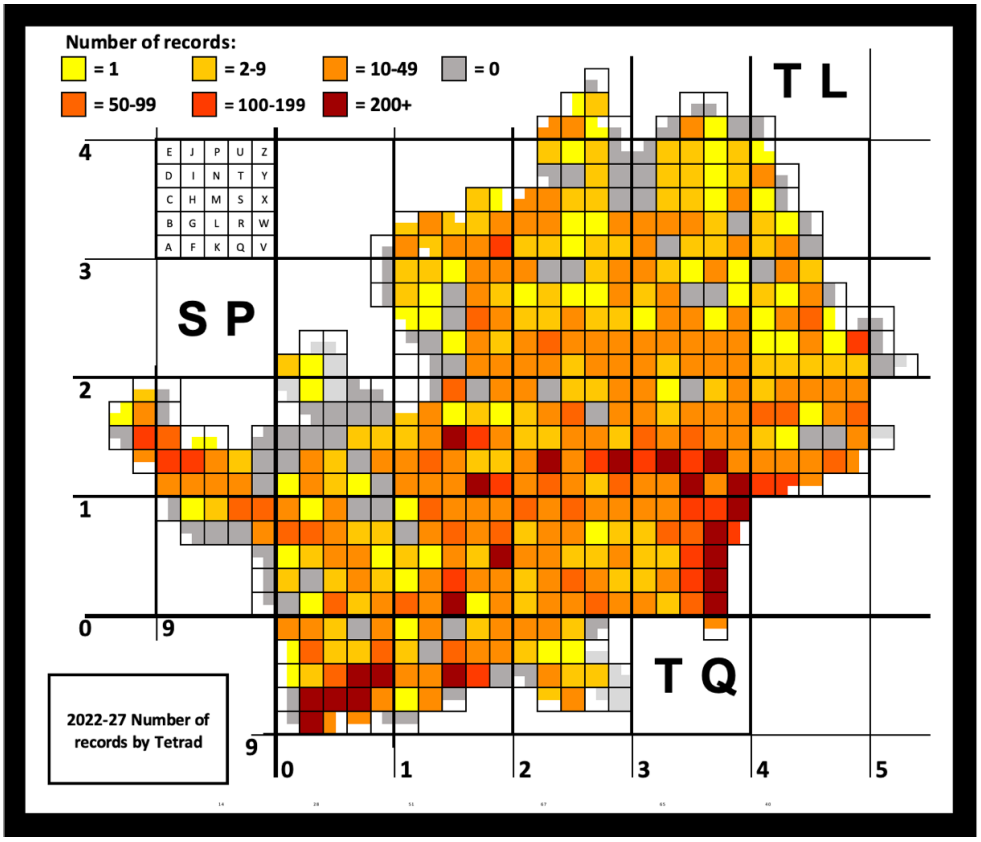


An interactive map that can be searched by postcode or place name and can be used to show grid squares and/or vice county boundaries can be found at:

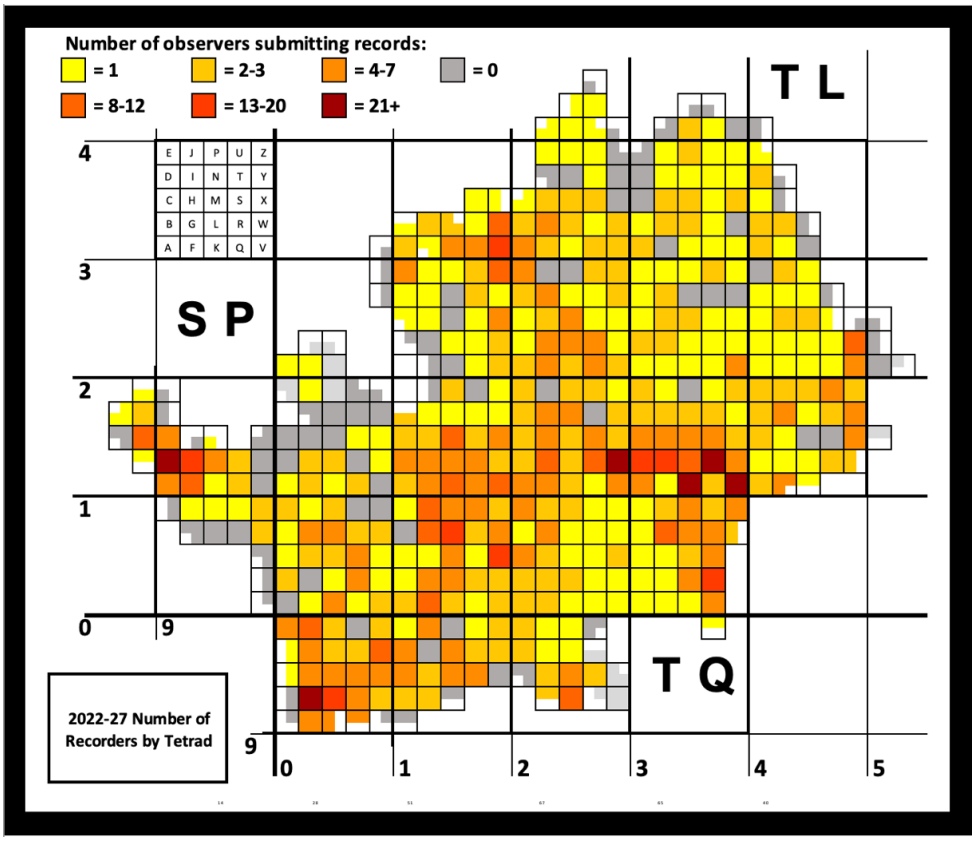
https://www.bnhs.co.uk/2019/technology/grabagridref/gagr.php#map

Coverage to date (2022-mid-November 2026

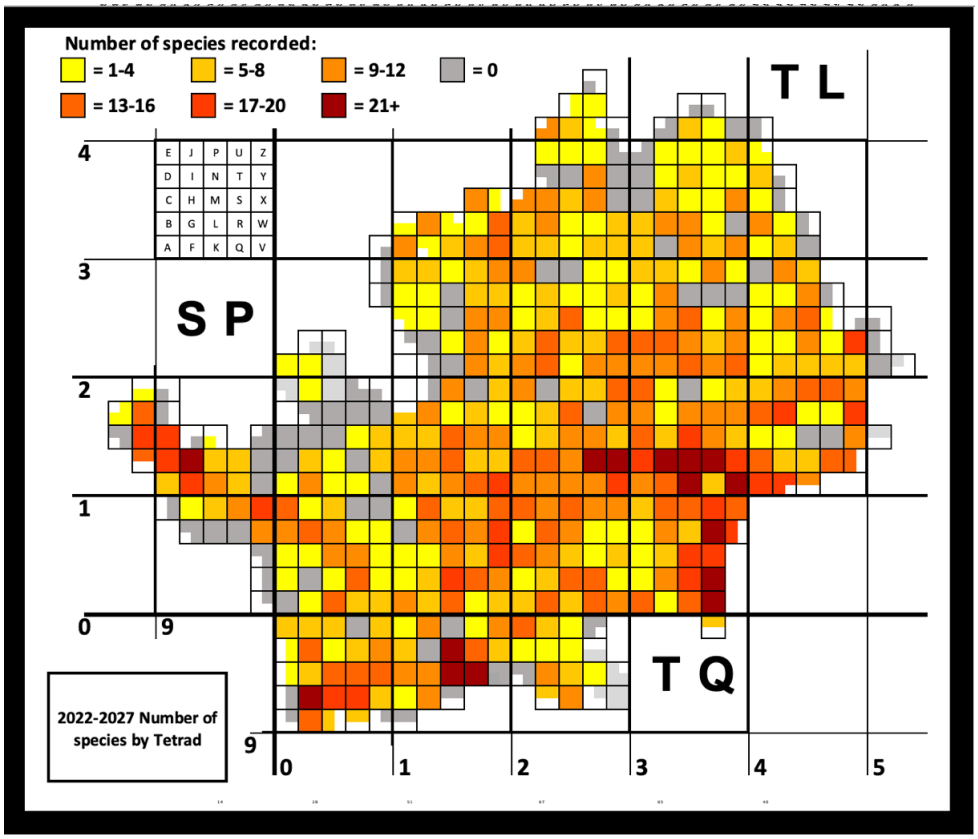
The total number of records from each tetrad (2km square) shows some bias towards southern and central parts of the county, with some tetrads more regularly visited by one or more observers:



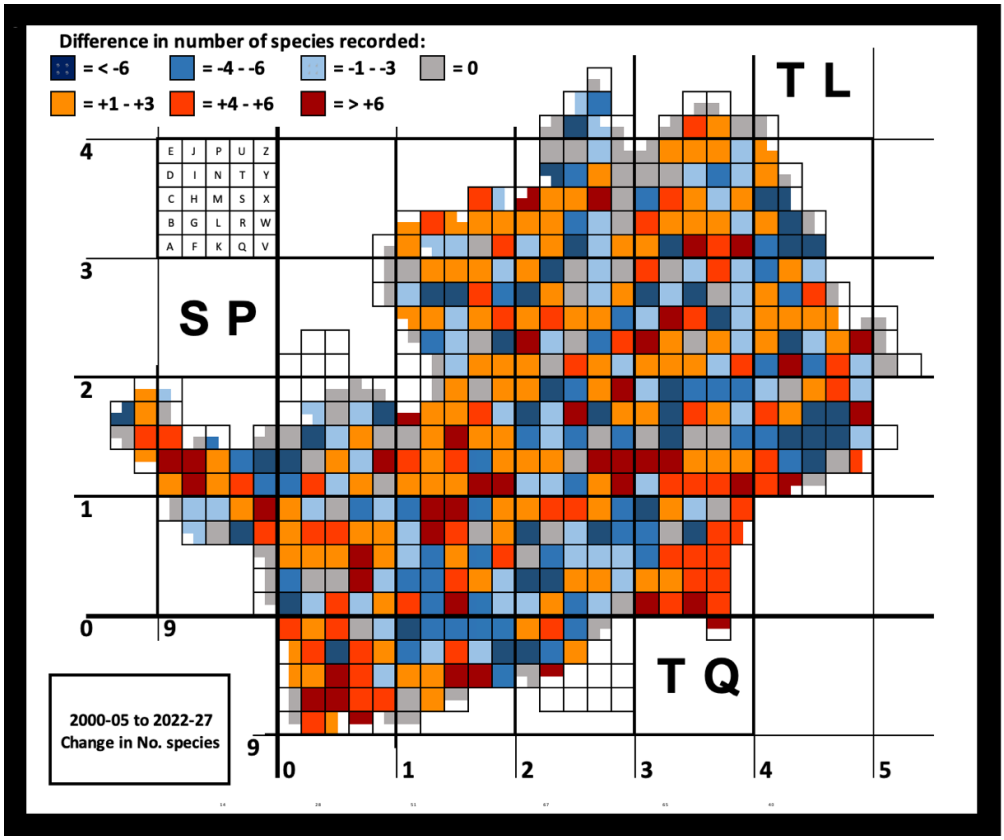
The number of observers who have submitted records from each tetrad shows that some parts of the county only have records from single observers – showing that all records can be important:



The total number of species recorded from a tetrad is mainly a combination of two factors, the quality and variety of habitats in the tetrad and the frequency of recording. Better quality sites tend to be visited more which can further increase the number of species seen;



After five years of surveying, 64% of the 490 tetrads that are at least partially within the modern county of Hertfordshire have had at least the same number of species recorded as in the 2000-2005 survey:



Species summary

The table below (with the species arranged in descending order based on how many tetrads they have currently been recorded in since 2022) compares the number of tetrads and number of records of each species during the two surveys.

Preliminary results suggest that species with the name highlighted in green are increasing, those with the name highlighted in yellow may be stable, and the species highlighted in red may be declining.

At the end of five years 83.3% of the survey time will have been completed so, broadly speaking, totals from the current survey would be expected to be approximately this percentage of the 2000-2005 totals if coverage is comparable and the population and distribution have remained stable.

Species	2000-2005 tetrads	2022-2027 tetrads	% of previous total	2000-2005 records	2022-2027 records	% of previous total
Common Darter	343	295	86.0%	1515	1931	127.5%
Azure Damselfly	319	259	81.2%	1780	1462	82.1%
Blue-tailed Damselfly	326	250	76.7%	1802	1589	88.2%
Common Blue Damselfly	265	237	89.4%	1292	1934	149.7%
Willow Emerald Damselfly	0	236	N/a	0	1224	N/a
Emperor	238	228	95.8%	837	1126	134.5%
Migrant Hawker	238	213	89.5%	792	1067	134.7%
Southern Hawker	240	200	83.3%	969	647	66.8%
Large Red Damselfly	188	194	103.2%	990	783	79.1%
Banded Demoiselle	171	189	110.5%	917	1897	206.9%
Broad-bodied Chaser	185	173	93.5%	662	602	90.9%
Ruddy Darter	161	131	81.4%	633	654	103.3%
Brown Hawker	240	126	52.5%	953	466	48.9%
Black-tailed Skimmer	120	121	100.8%	473	569	120.3%
Red-eyed Damselfly	97	120	123.7%	403	657	163.0%
Four-spotted Chaser	67	99	147.8%	214	429	200.5%
Small Red-eyed Damselfly	19	80	421.1%	49	276	563.3%
Hairy Dragonfly	31	57	183.9%	120	309	257.5%
Beautiful Demoiselle	0	53	N/a	0	118	N/a
Norfolk Hawker	0	46	N/a	0	378	N/a
Lesser Emperor	0	33	N/a	0	148	N/a
White-legged Damselfly	14	26	185.7%	44	72	163.6%
Emerald Damselfly	67	21	31.3%	218	78	35.8%
Scarce Chaser	0	20	N/a	0	56	N/a
Southern Migrant Hawker	0	17	N/a	0	75	N/a
Red-veined Darter	2	16	800.0%	5	53	1060.0%
Downy Emerald	0	8	N/a	0	59	N/a
Scarce Emerald Damselfly	0	5	N/a	0	31	N/a
Keeled Skimmer	1	5	500.0%	1	5	500.0%
Scarce Blue-tailed Damselfly	0	4	N/a	0	46	N/a
Variable Damselfly	0	1	N/a	0	1	N/a
Vagrant Emperor	0	1	N/a	0	1	N/a
Black Darter	1	0	0.0%	3	0	0.0%

Only one of the 22 species recorded during the previous survey (Black Darter, which isn't included in the following species accounts) has not yet been seen since the beginning of 2022.

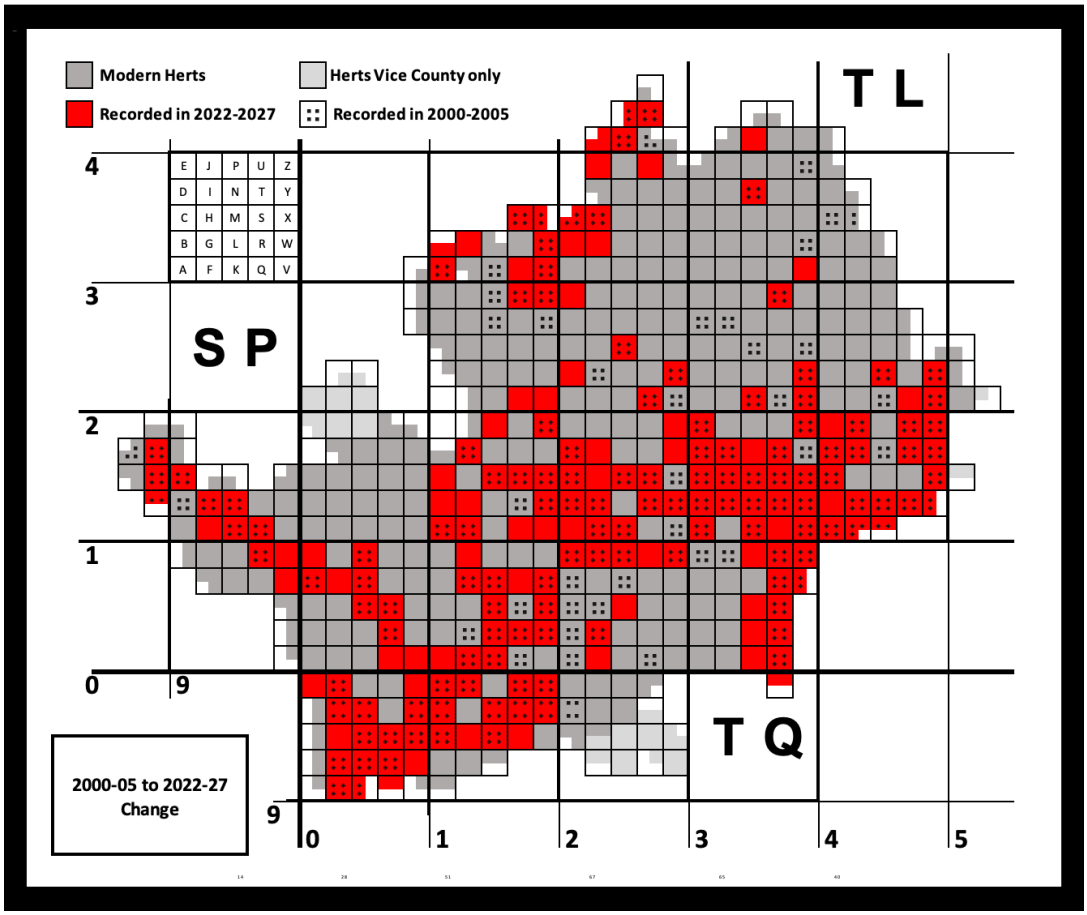
The maps for each species show where there have been records during the current survey (in red) and where there were records during the previous survey (black dots within the tetrad).

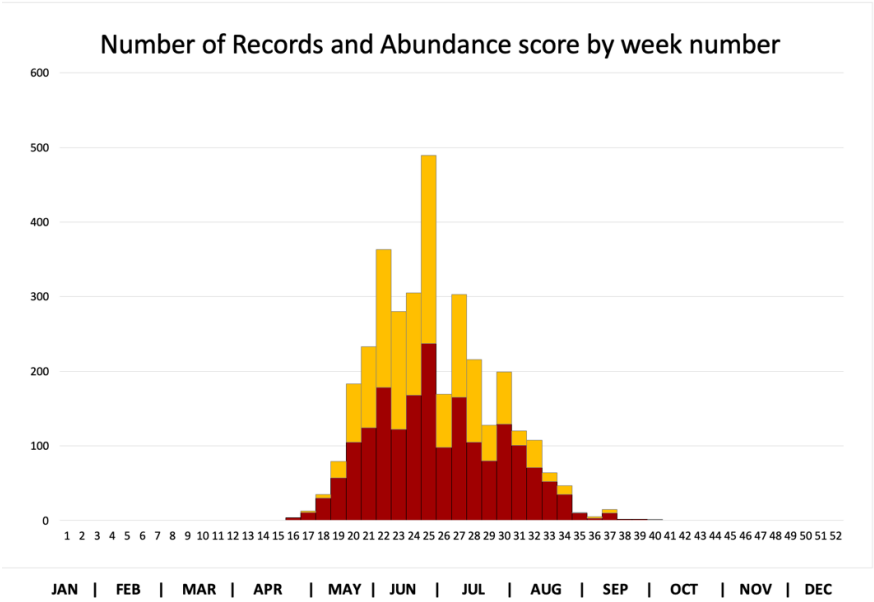
Charts showing the flight periods during the current survey have also been included. The crimson/ dark reddish area within these shows the number of individual records. The yellow area gives an indication of when records specified that more than one individual was seen (All records are scored as 'one' on the Y-axis. Records then have the following score shown with yellow: one individual – zero, 2-5 – one, 6-20 – two, 21-100 – three, 101-500 – four and 500+ - five).

Banded Demoiselle (*Calopteryx splendens*)

With the obvious dark bands across the wings of the males this species is easily noticed and had been reported by a significantly larger number of observers than any other. It is currently the species with the third highest number of records despite only being the tenth most widespread in terms of the number of tetrads it has been reported from.

There does however seem to have been a genuine increase, with records so far received from 189 tetrads compared to only 171 during the previous survey.

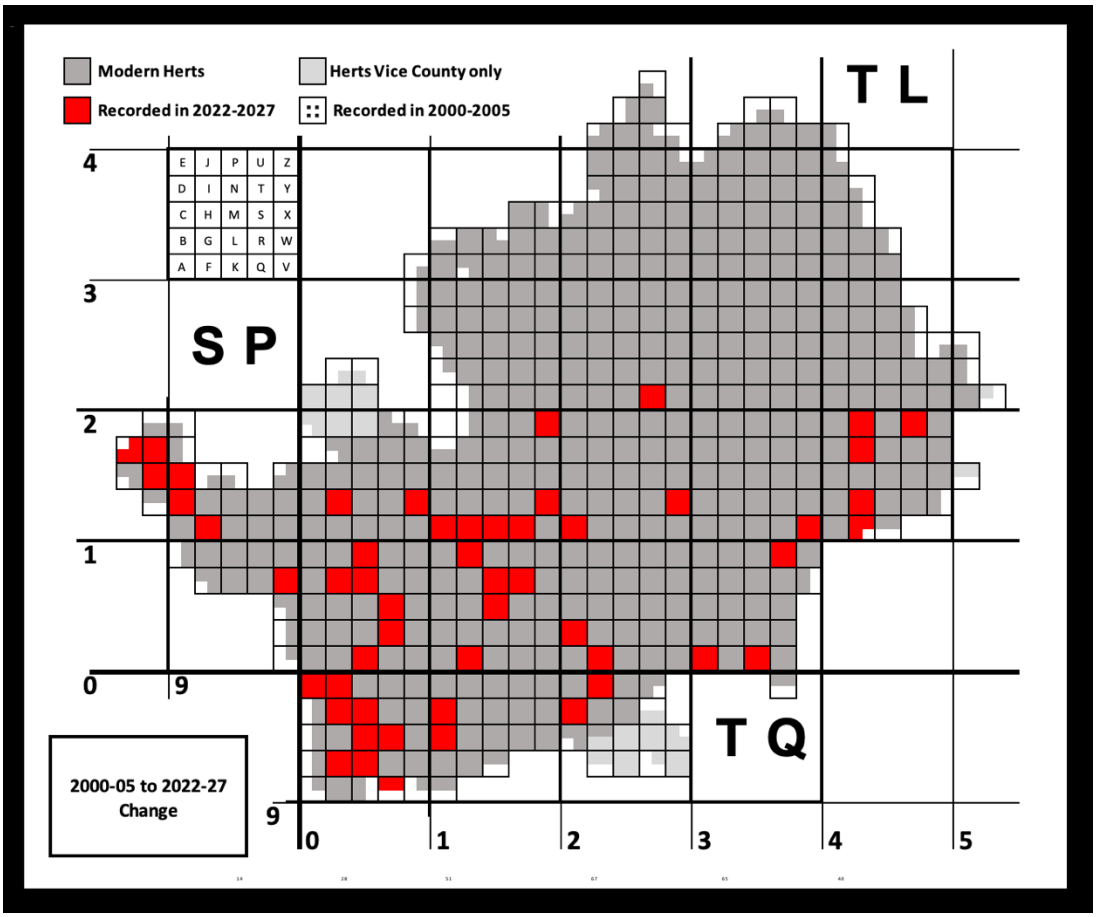


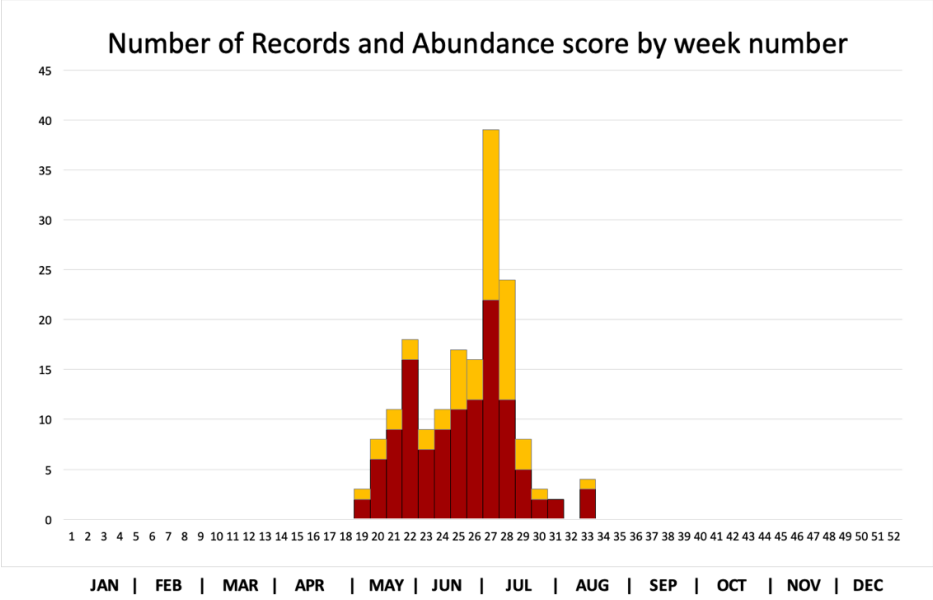


Beautiful Demoiselle (*Calopteryx virgo*)

Another obvious species but one that currently often occurs at low densities in most parts of Hertfordshire and often favours relatively small streams, which means it is potentially easily overlooked.

The number of records annually continues to increase, and more new locations are being found each year.

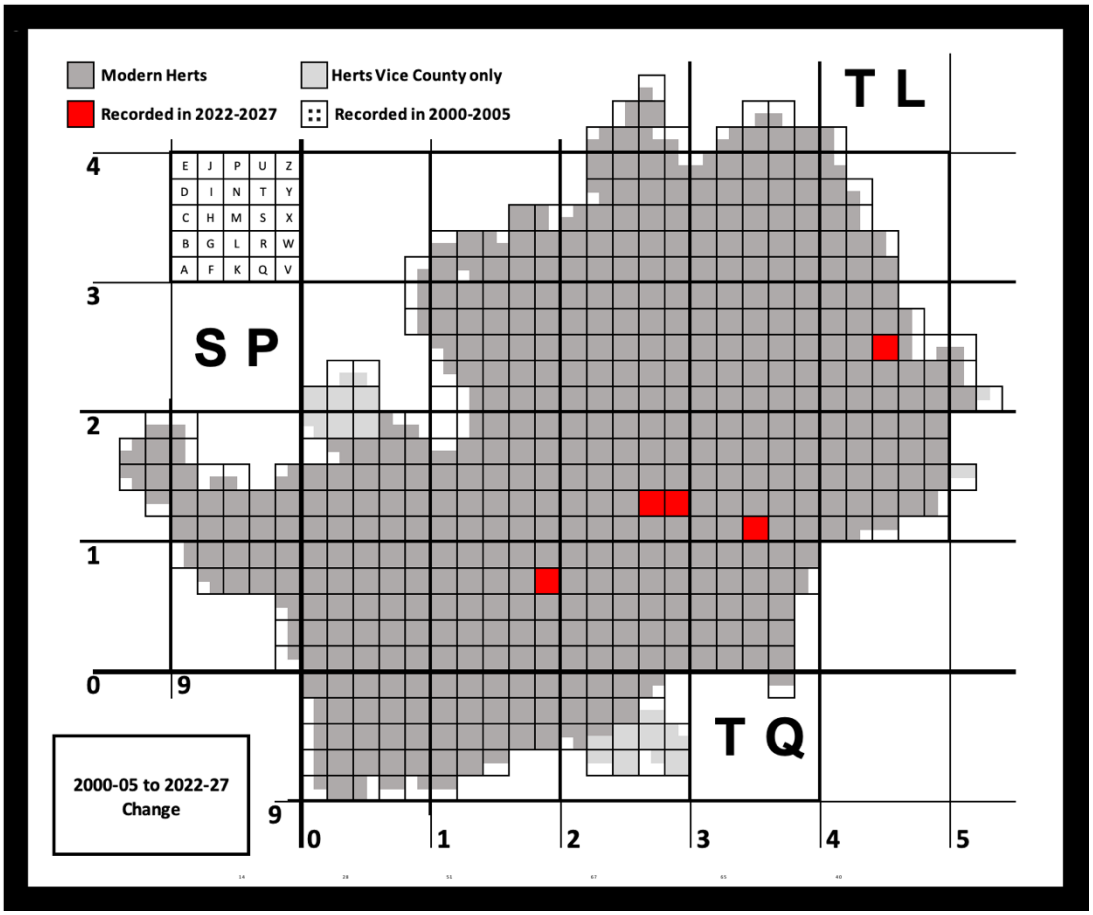


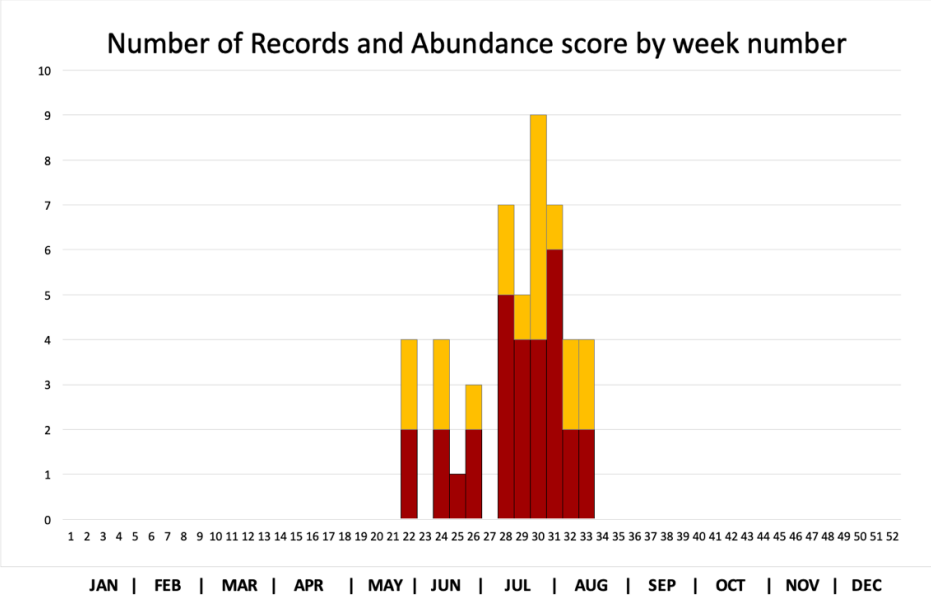


Scarce Emerald Damselfly (*Lestes dryas*)

A relatively new arrival in Hertfordshire that is barely managing to maintain a toe hold and shows no sign of increasing.

Recorded in five tetrads (six monads) during 2022-2026 but with only 231 records in total despite some of the sites having regular visits from experienced observers.

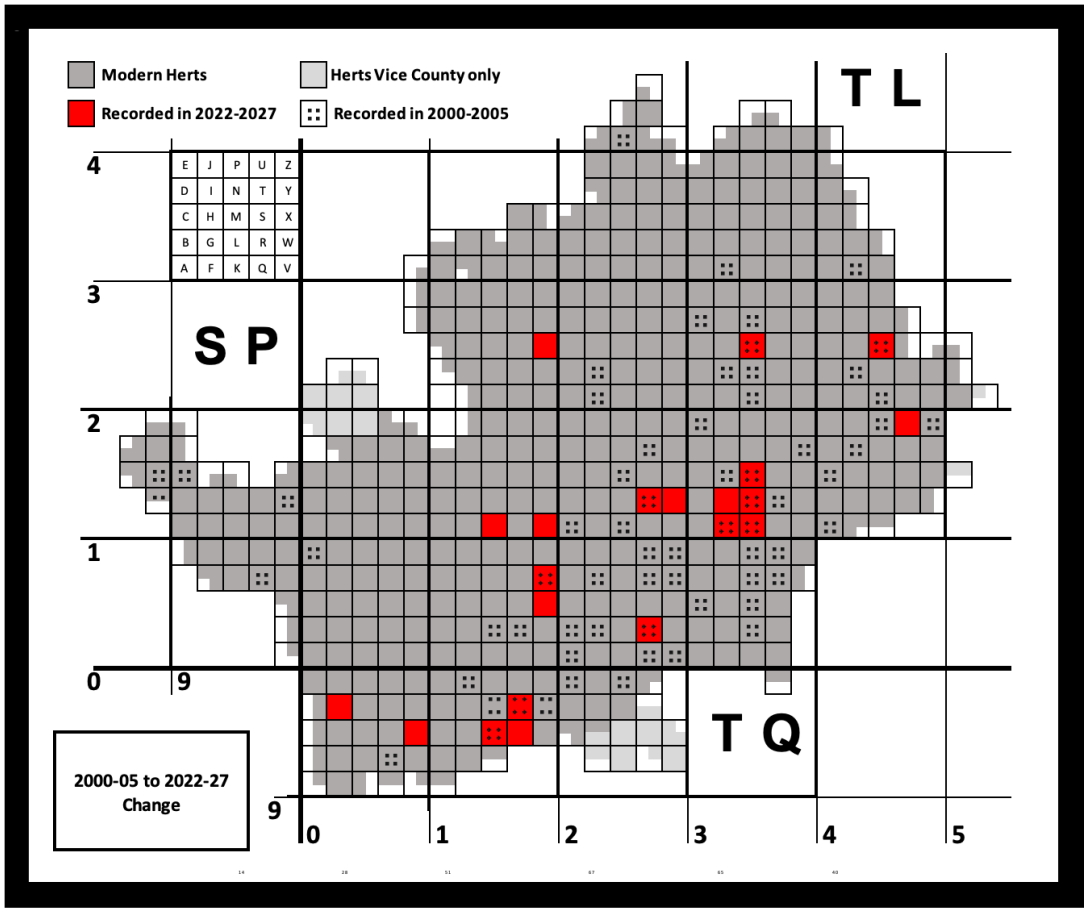


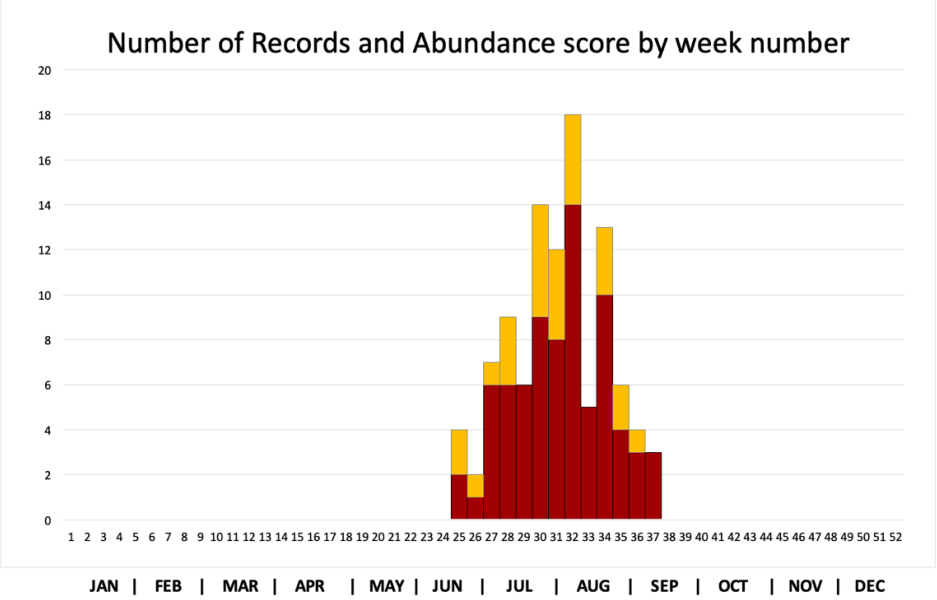


Emerald Damselfly (*Lestes sponsa*)

Records of this species have not increased, and it is obvious that they have declined significantly in Hertfordshire, both in terms of distribution and with regard to the number of records..

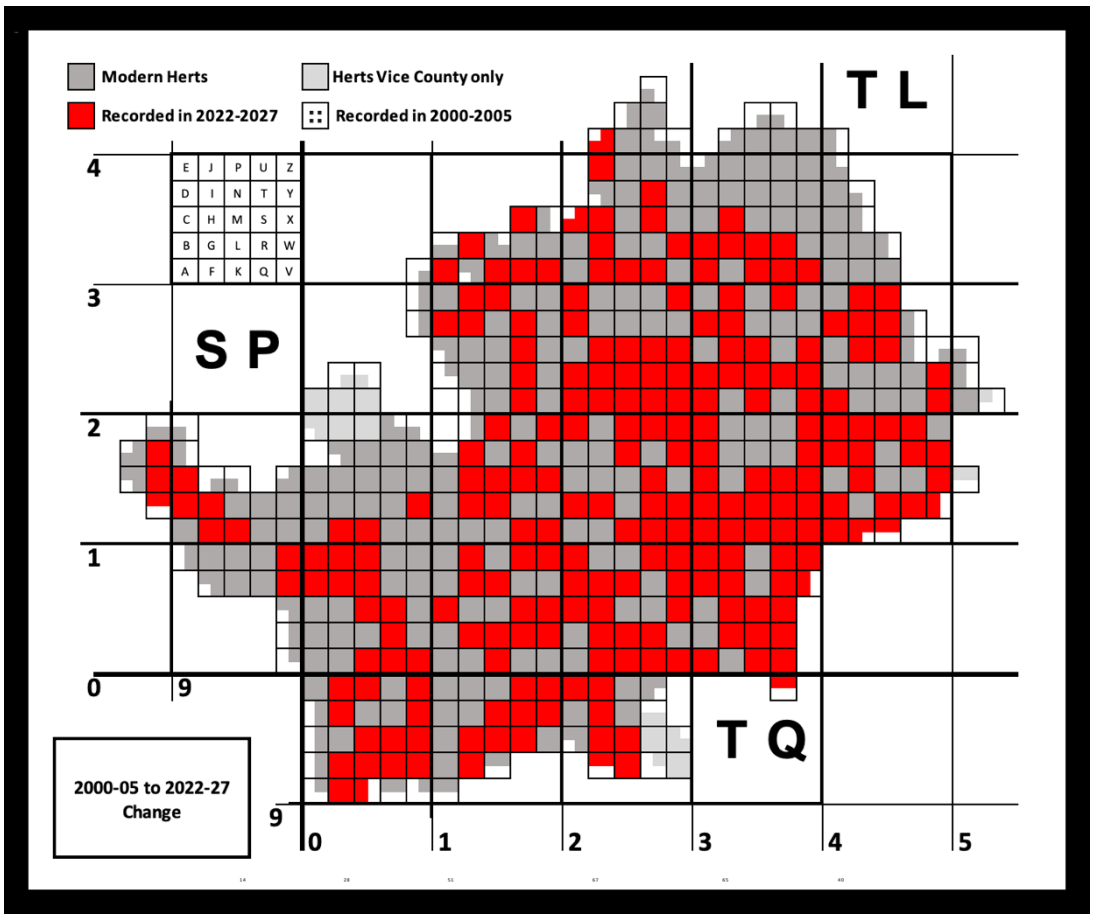
There were 218 records from 67 tetrads during the 2000-2005 survey, but after five years of the current survey there have only been 78 records from 21 tetrads.

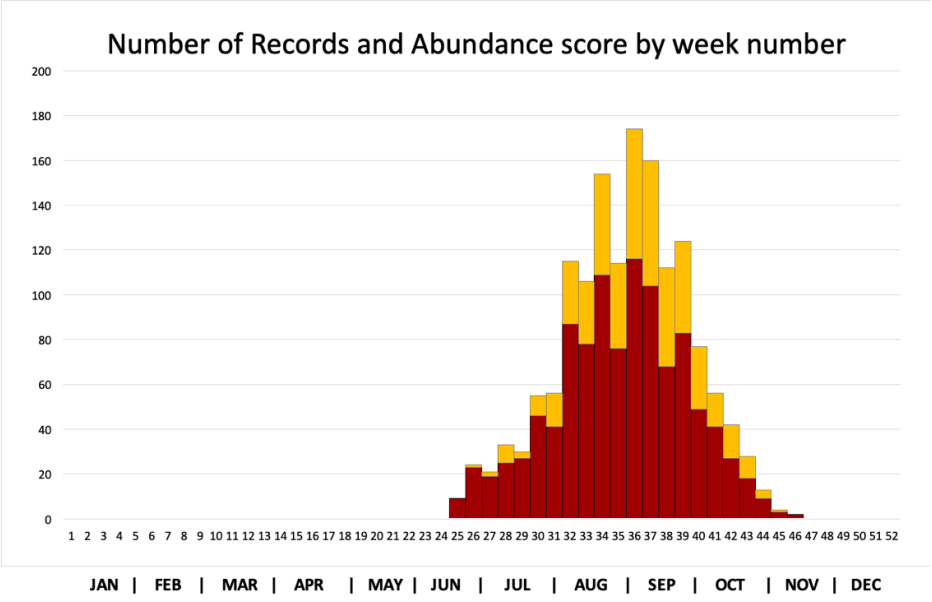




Willow Emerald Damselfly (*Chalcolestes viridis*)

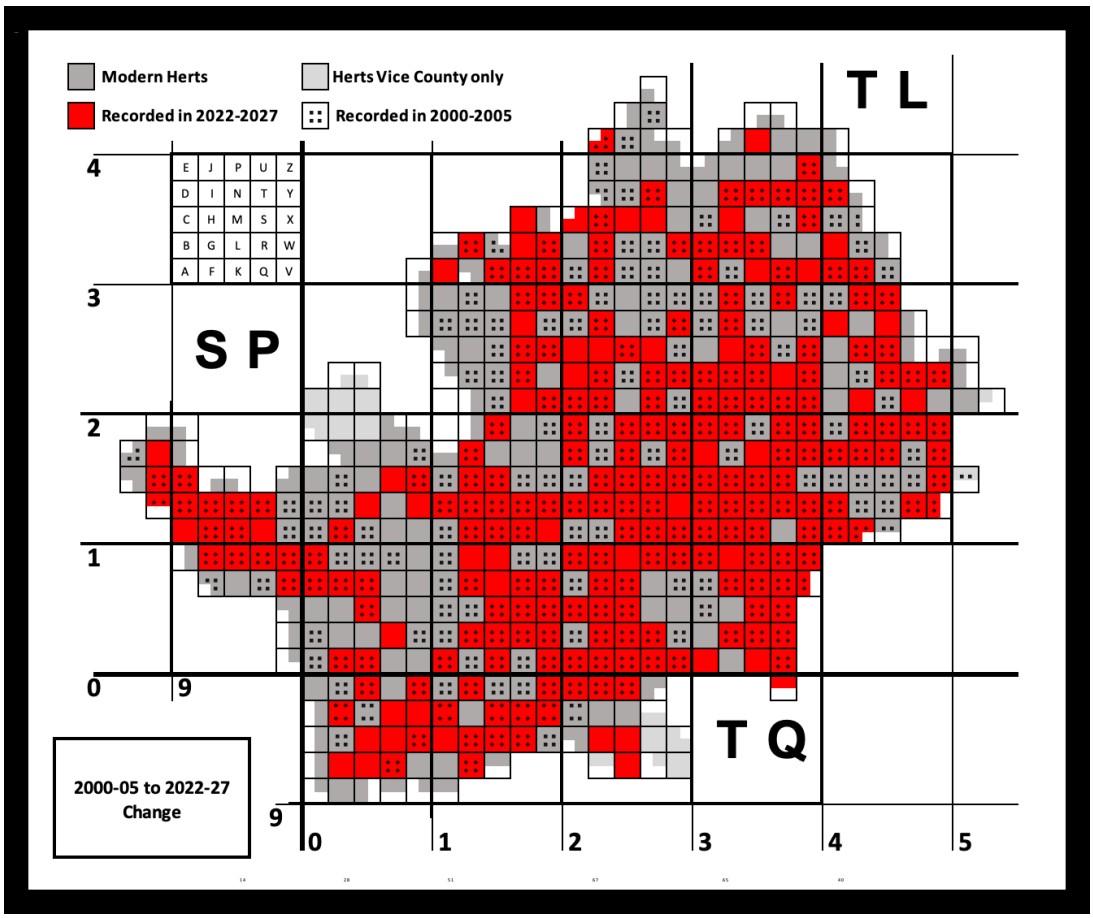
Willow Emerald Damselflies have been the fastest changing species in the county and are now the fifth most widely distributed species, and sixth most recorded, despite the first county record of the species being as recent as September 2014.

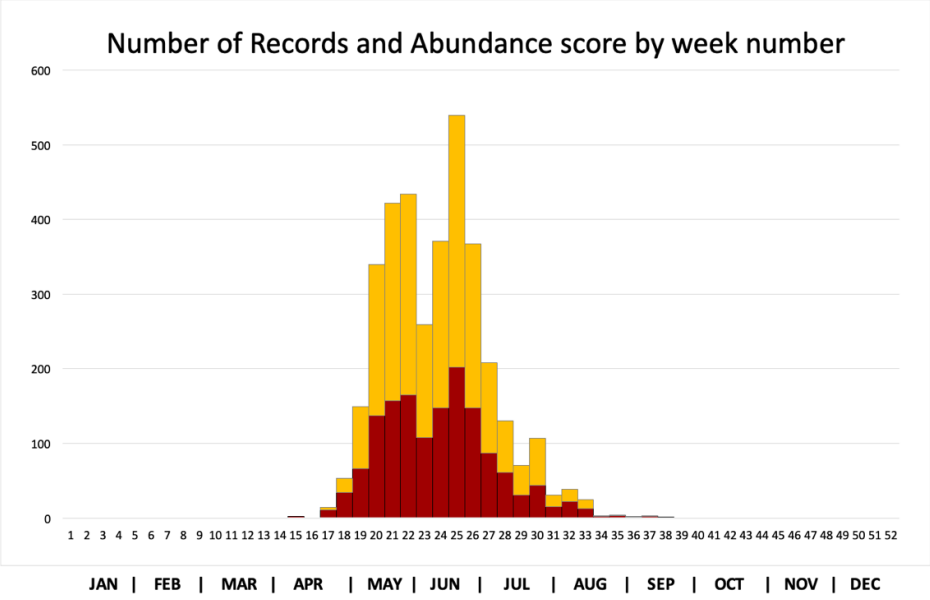




Azure Damselfly (*Coenagrion puella*)

Although still a common and widespread species in Hertfordshire, this is one of the species that does not seem to be increasing and which might actually turn out to be declining slightly.

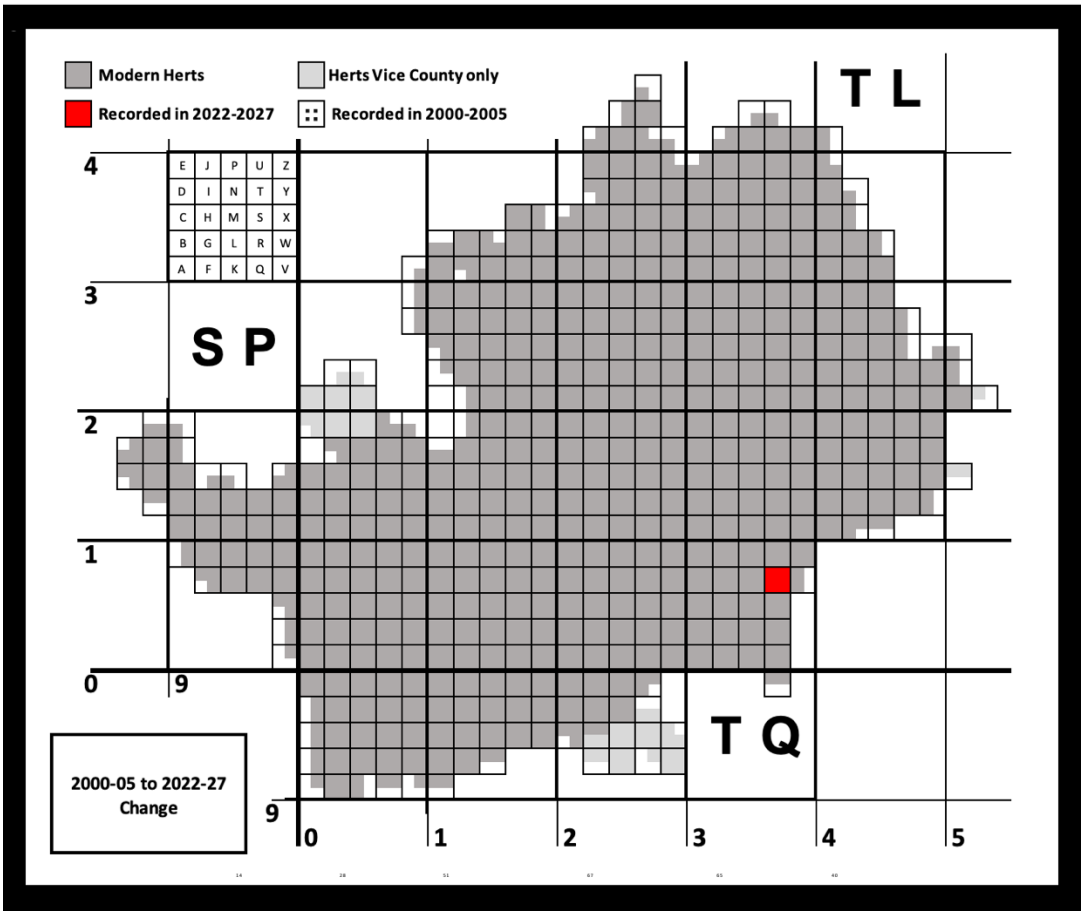


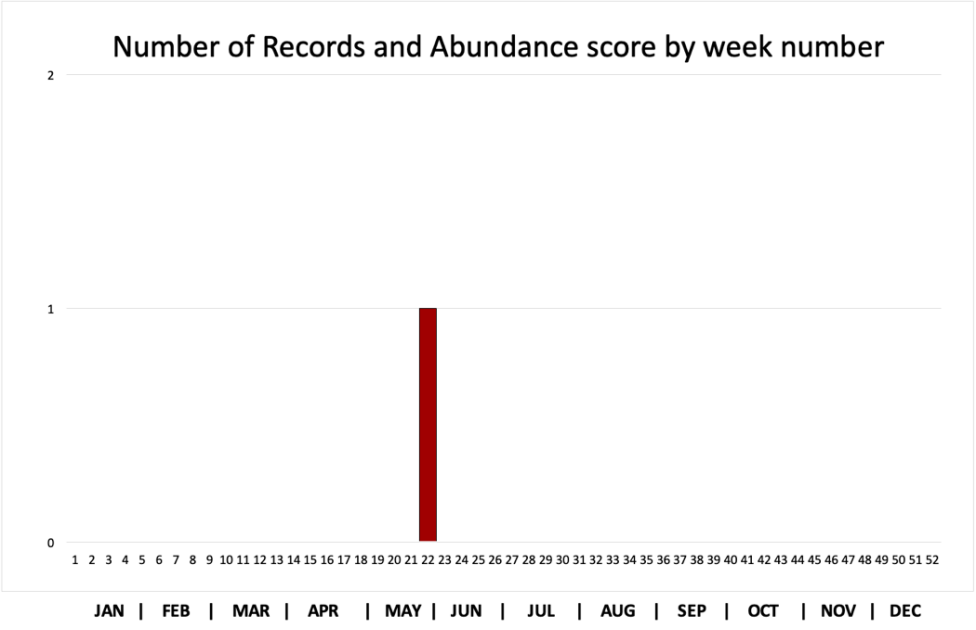


Variable Damselfly *(Coenagrion pulchellum)*

A vagrant to the county with just a handful off records.

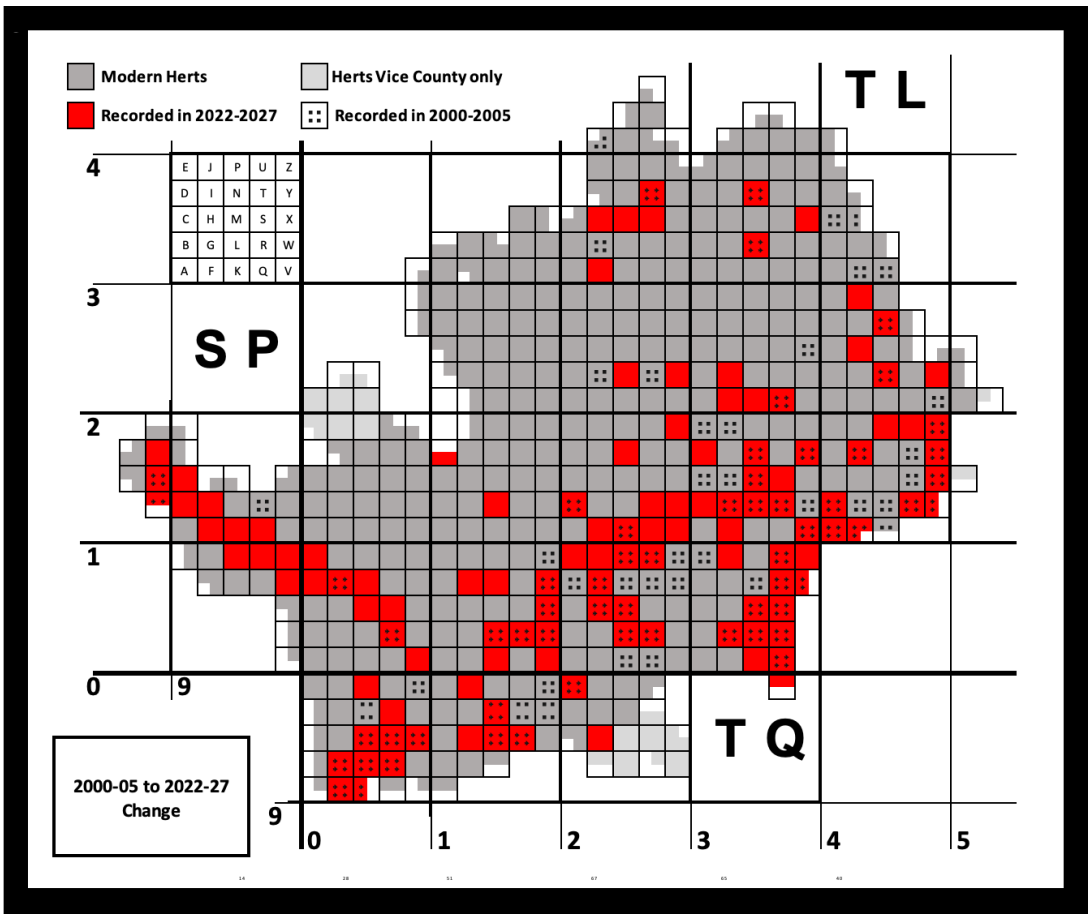
There has been one record during the current atlas period involving just one single male.

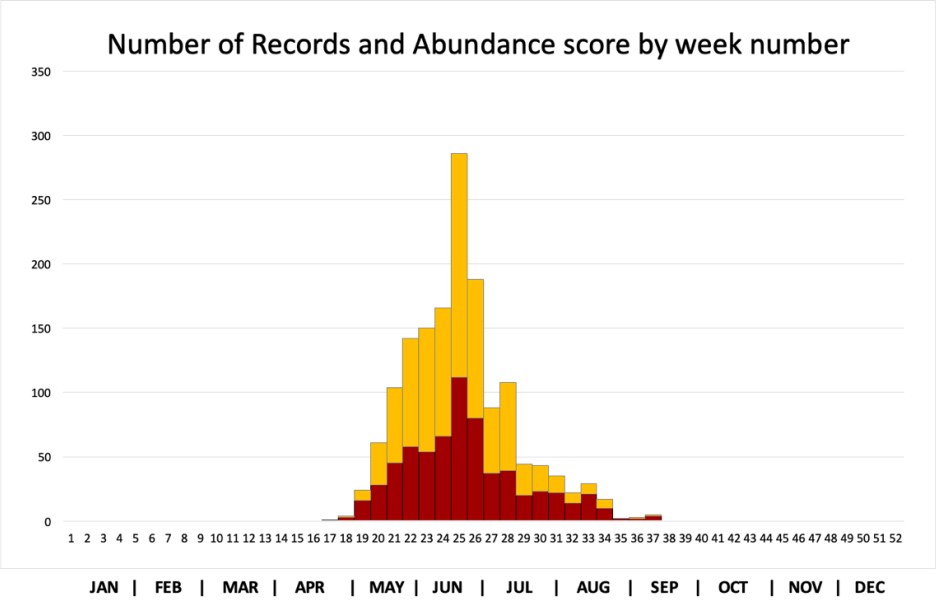




Red-eyed Damselfly (*Erythromma najas*)

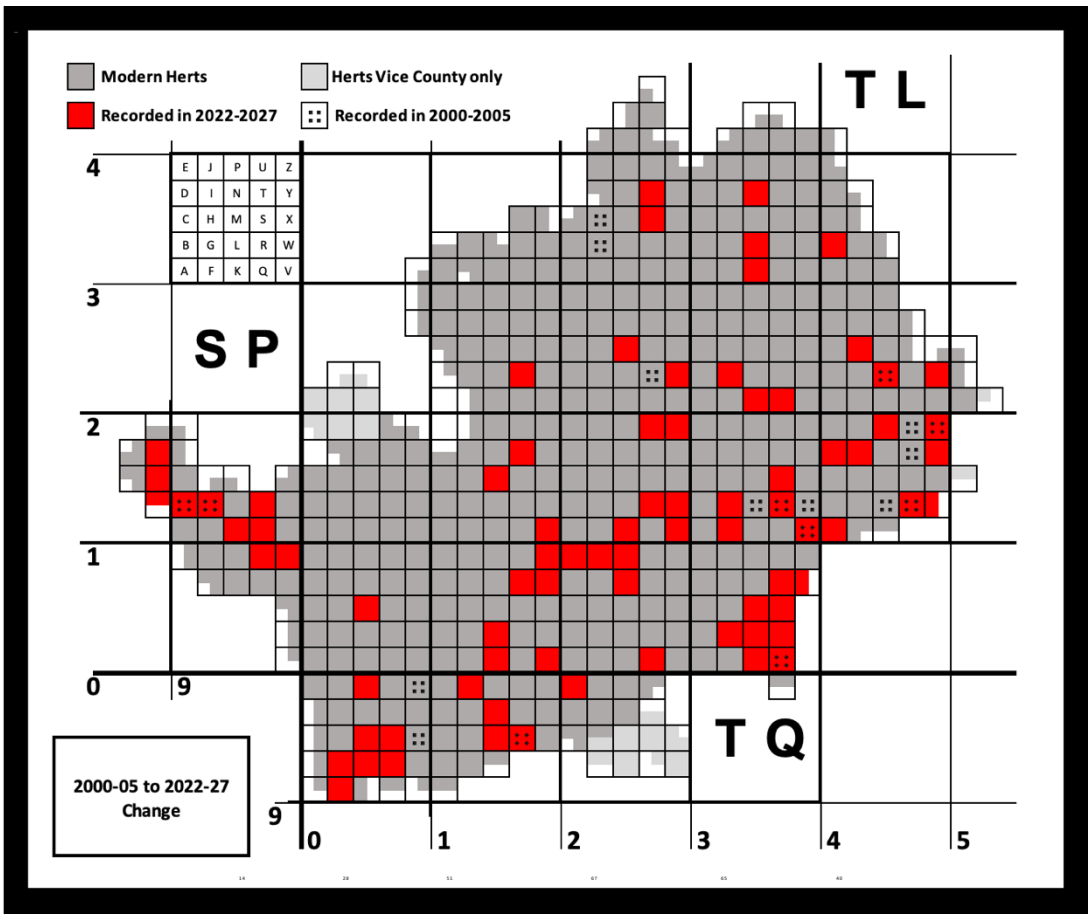
Results show that Red-eyed Damselflies seem to be increasing their distribution in Hertfordshire, although the numbers recorded at some sites have been very low, and their presence and numbers at a site can vary greatly between years.

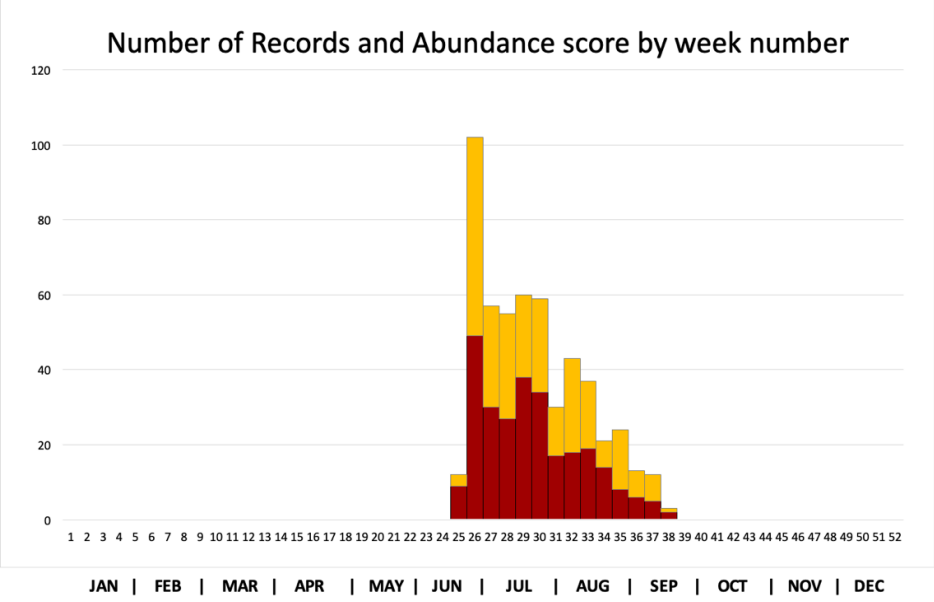




Small Red-eyed Damselfly (*Erythromma viridulum*)

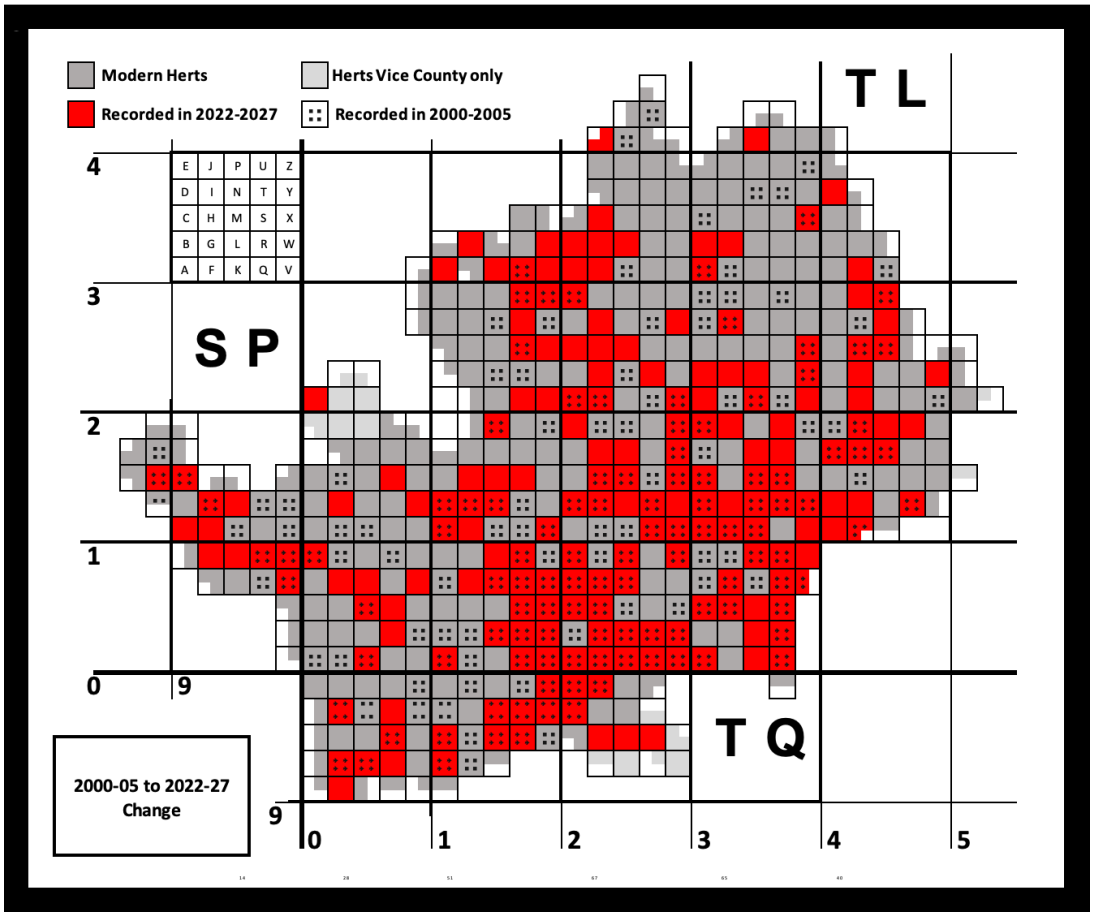
After first being recorded in Hertfordshire during the 2000-2005 atlas survey, Small Red-eyed Damselfly currently has the second largest increase in the number of tetrads it has been found in – although it is a long way behind Willow Emerald Damselfly in the total number of tetrads gained.

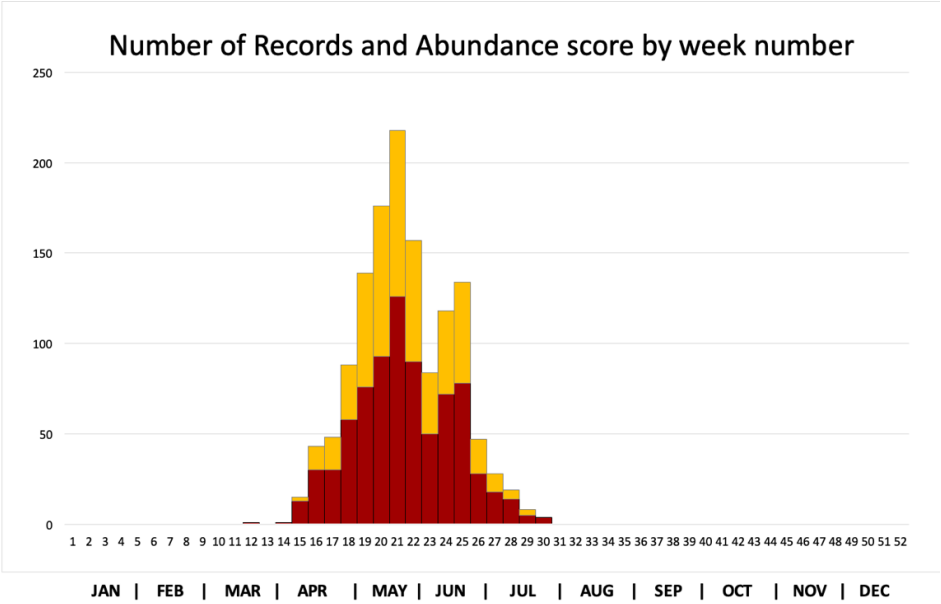




Large Red Damselfly (*Pyrrhosoma nymphula*)

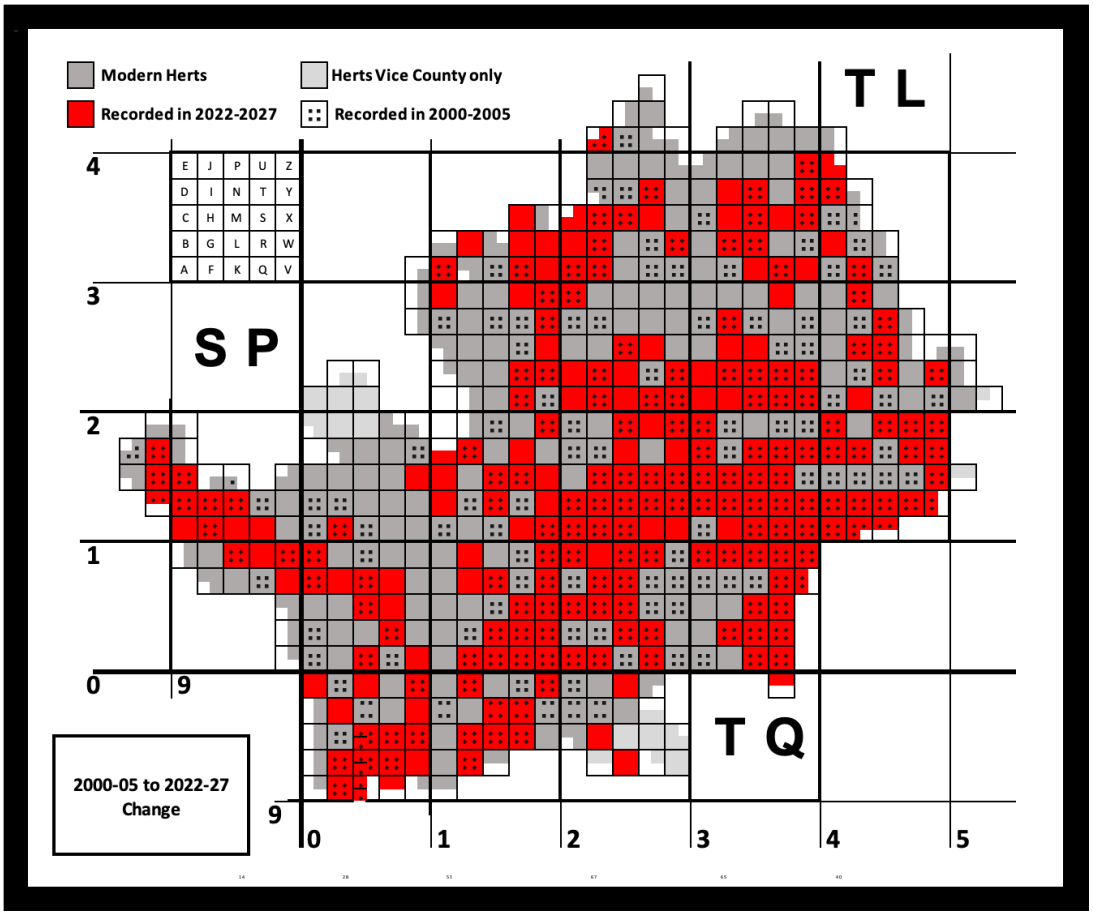
Although this is a species that is easily identified and regularly found in garden ponds, the total number of records received has remained on the low side and could be an indication of a decline. The number of tetrads that the species has been recorded in has already reached the 2000-2005 total though, so the status of the species is currently unclear.

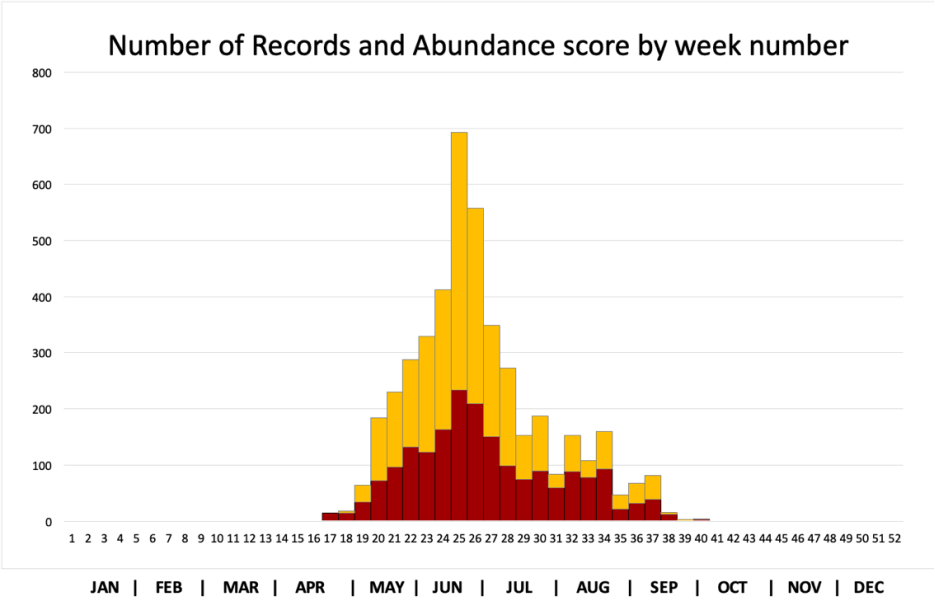




Common Blue Damselfly (*Enallagma cyathigerum*)

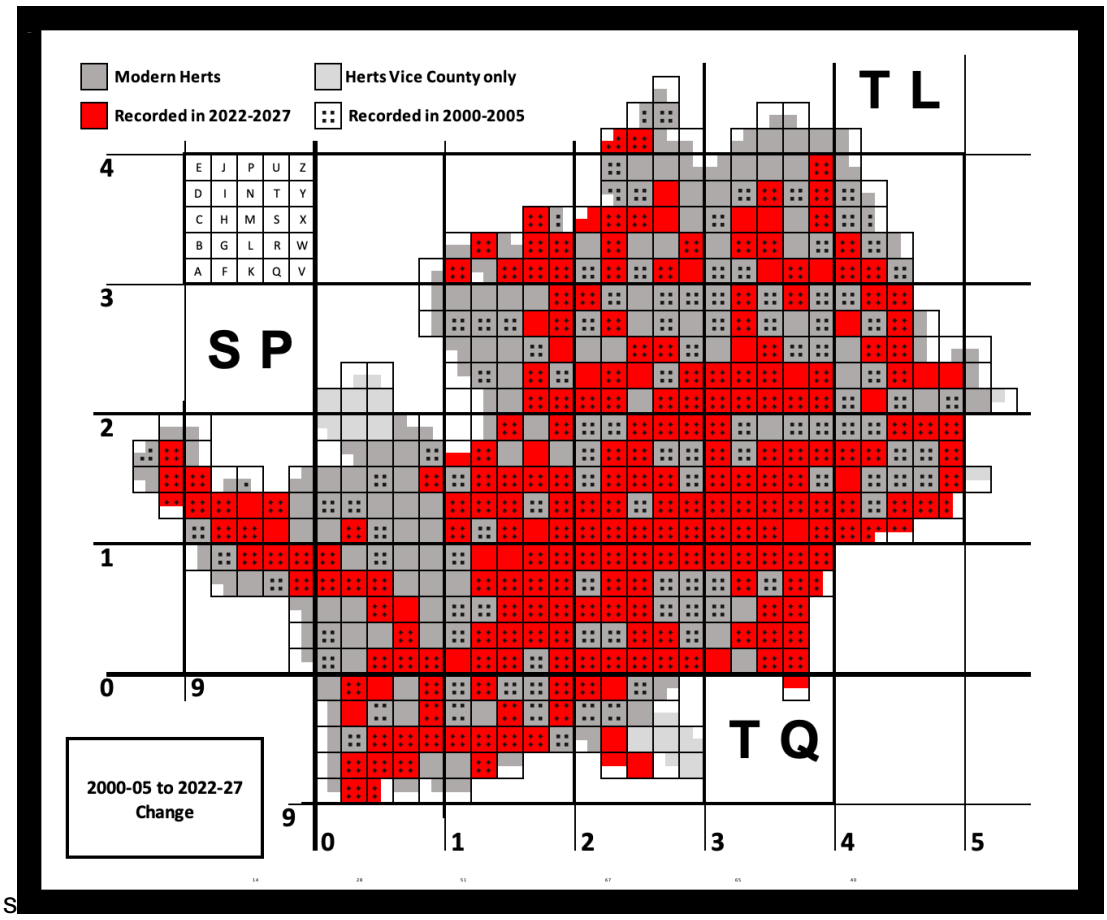
This is another widespread and common damselfly species that seems likely to have remained relatively stable since the previous atlas, or perhaps slightly increasing.

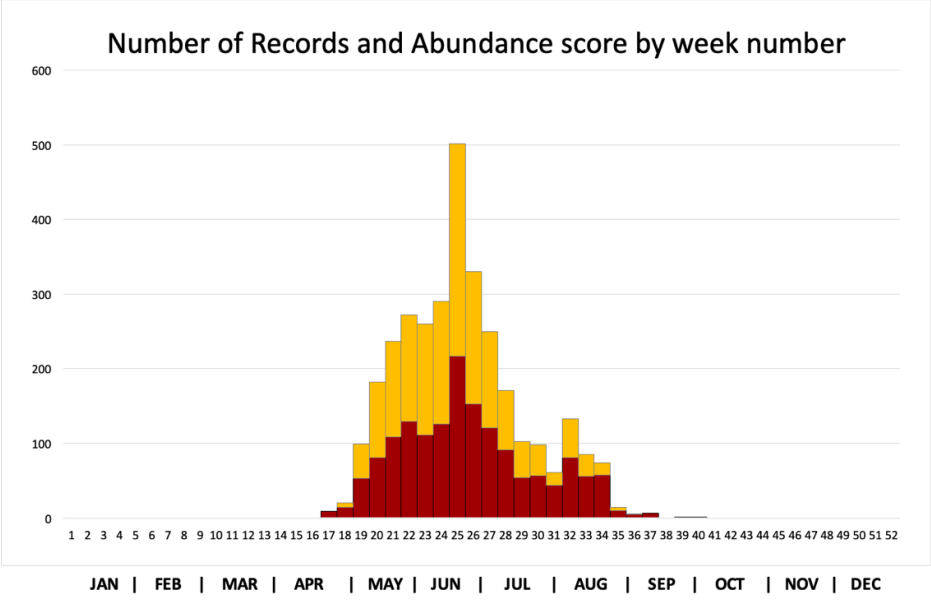




Blue-tailed Damselfly (*Ischnura elegans*)

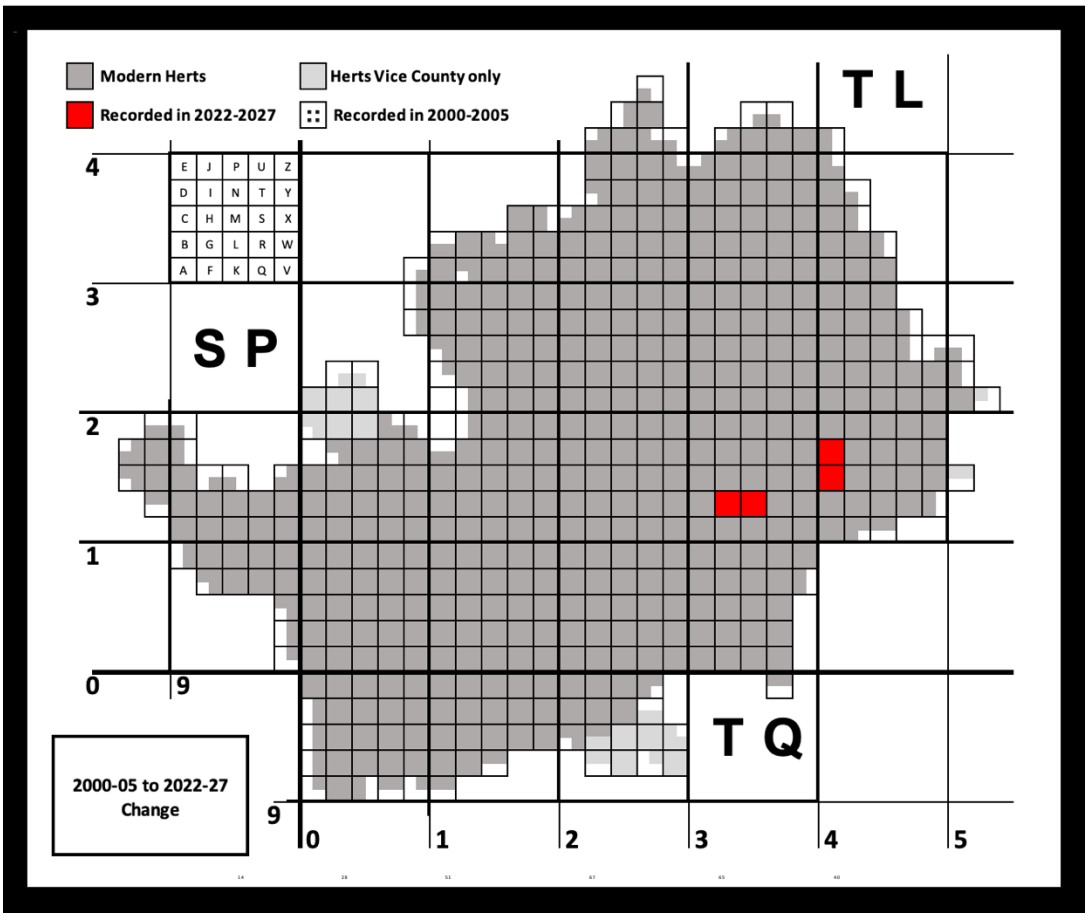
Although still common and widespread it seems increasing likely that Blue-tailed Damselfly will be found to have declined slightly when the current survey has been completed.

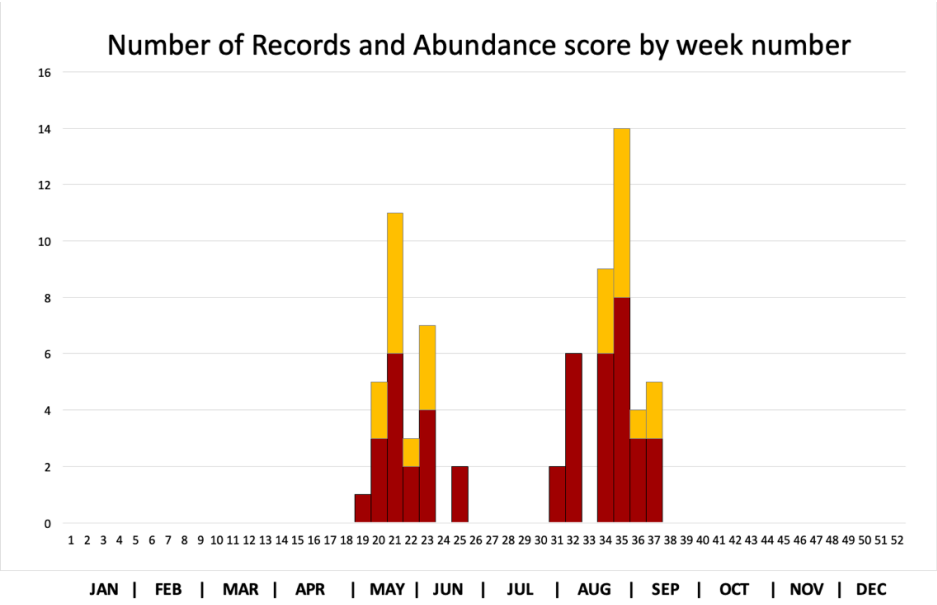




Scarce Blue-tailed Damselfly (*Ischnura pumilio*)

After three years of records from Kingsmead, including confirmed breeding, between 2022 and 2024there were no reports at all of Scarce Blue-tailed Damselfly during 2025, despite being looked for, and it seemed possible that the small population might have died out. However, during 2026 they were again found at Kingsmead and then, later in the year, small numbers were found at a new Hertfordshire site.

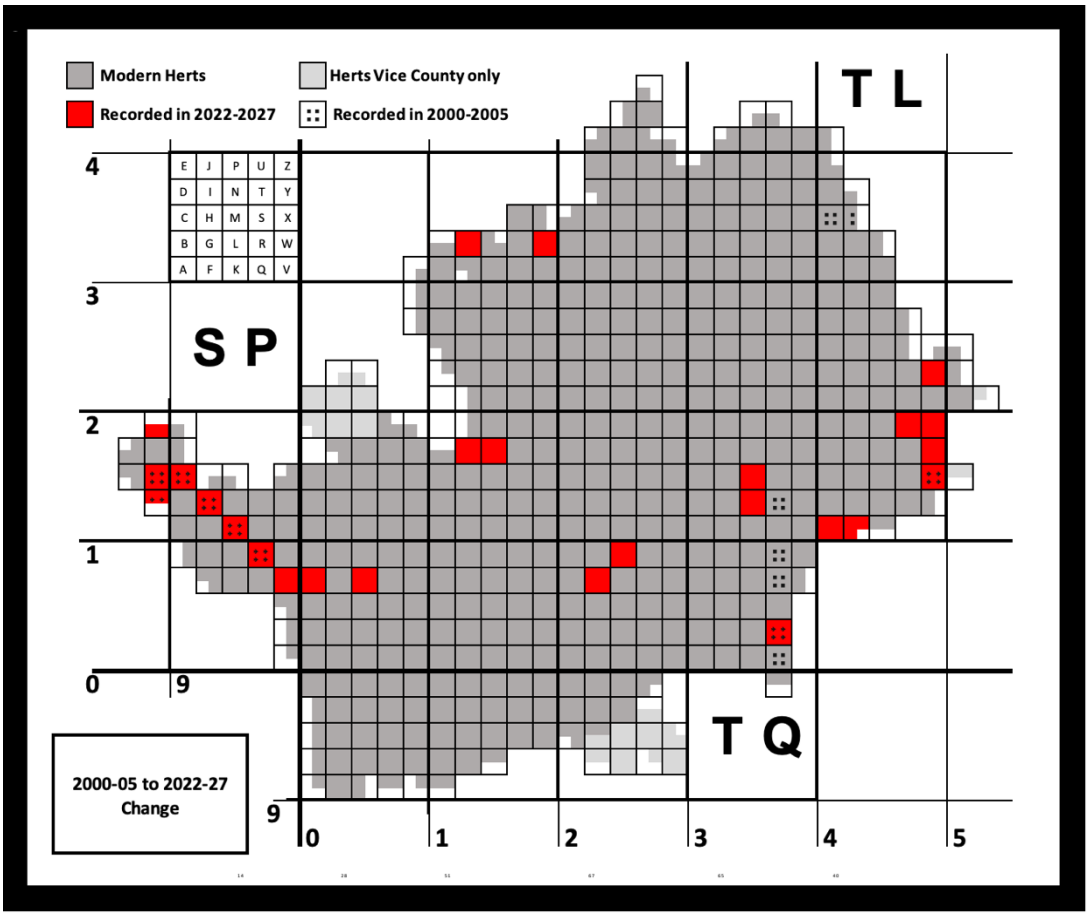


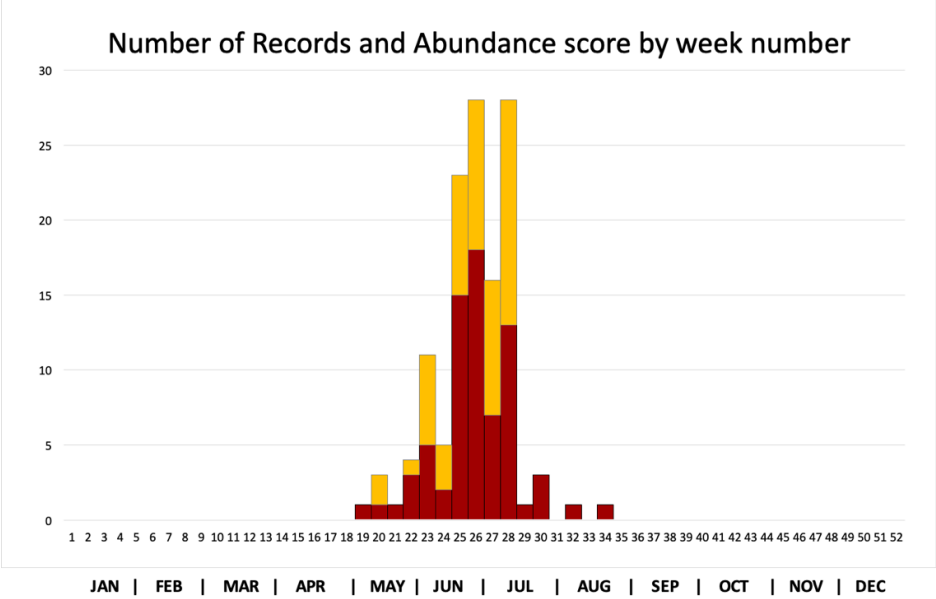


White-legged Damselfly (*Platycnemis pennipes*)

This species seems to be showing mixed fortunes within the county. The population on the Grand Union Canal near Wilstone remains strong and seems to be spreading further down the canal. There seem to have been some losses in the lower part of the Lee Valley Regional Park, but there have been records from new tetrads on the River Lee Navigation and River Stort Navigation.

There have also been a few 'one off' records elsewhere suggesting that wandering individuals are able to reach elsewhere in the county meaning that there is a potential for more new sites to be colonised.

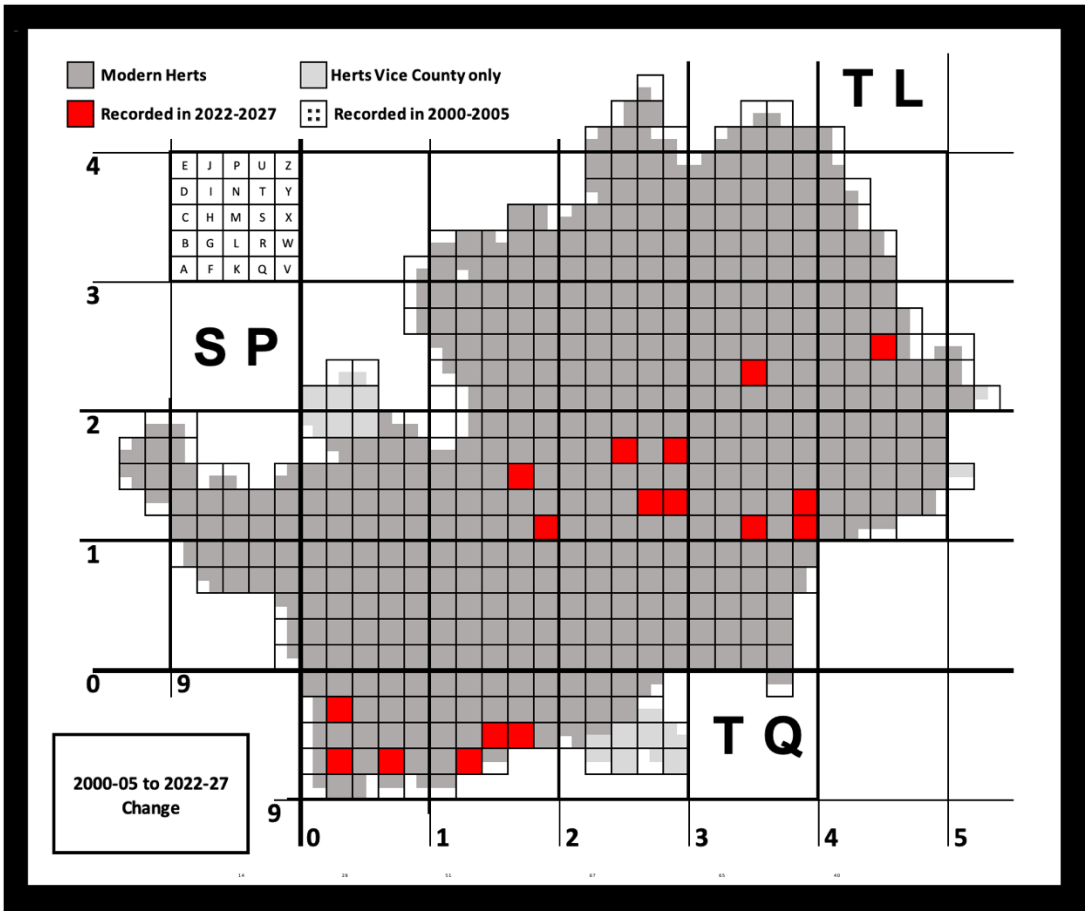


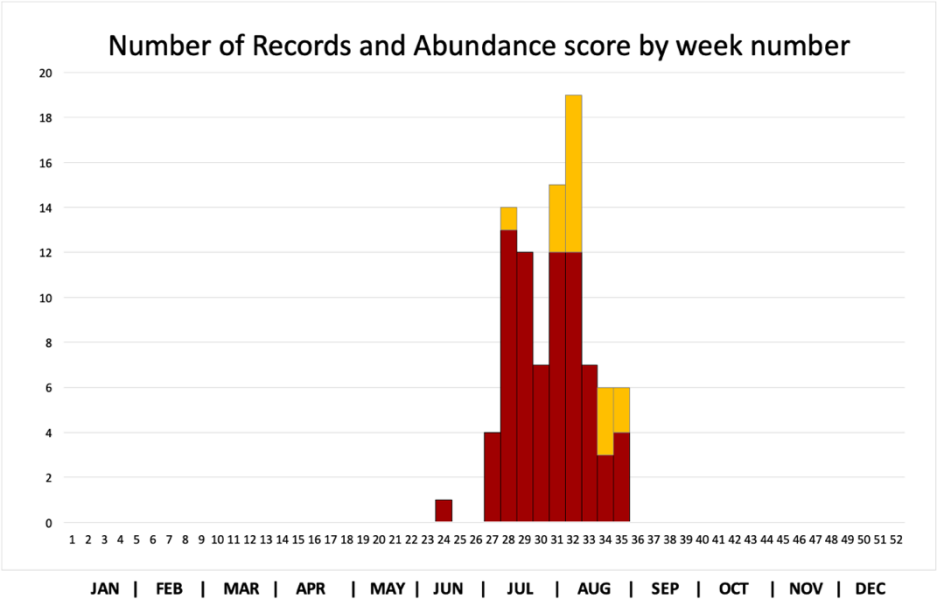


Southern Migrant Hawker (*Aeshna affinis*)

This remains a relatively scarce species in Hertfordshire although 2026 was a fairly good year with several records, including breeding activity.

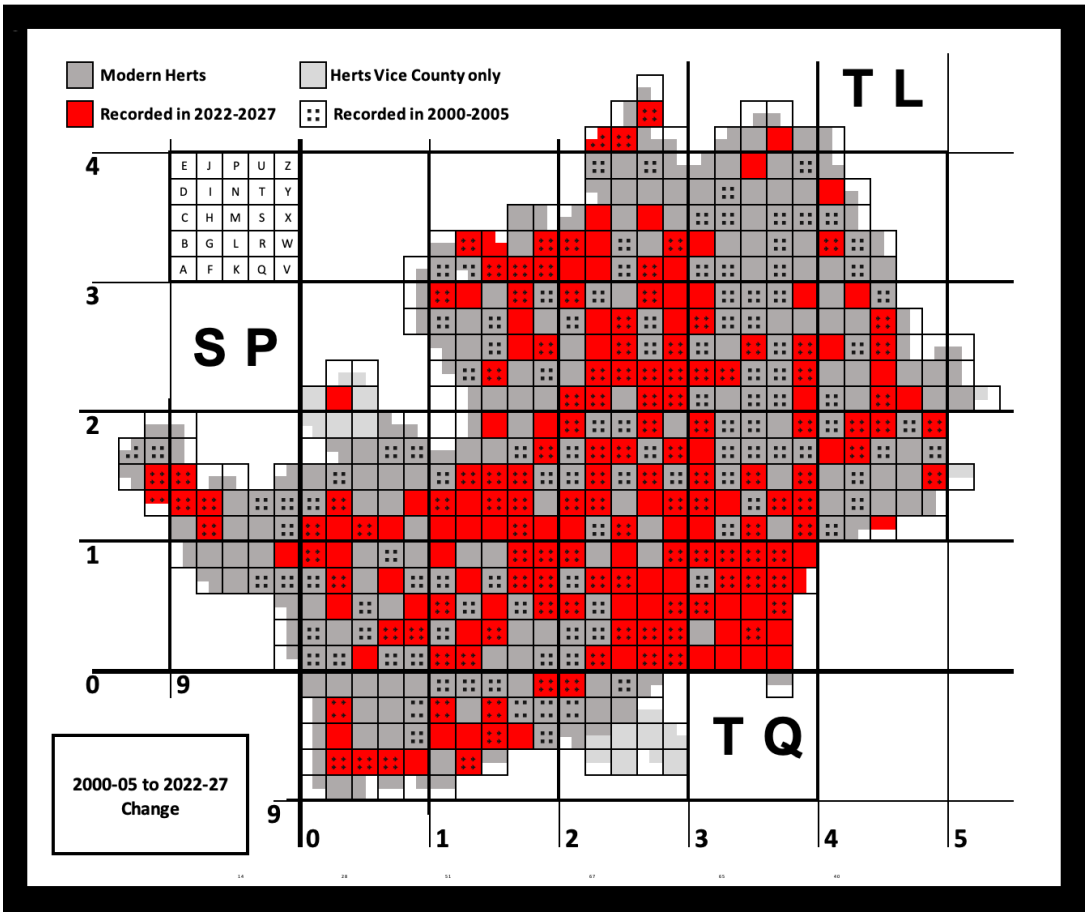
No permanent populations seem to have been established but there are indications that irregular breeding attempts are taking place.

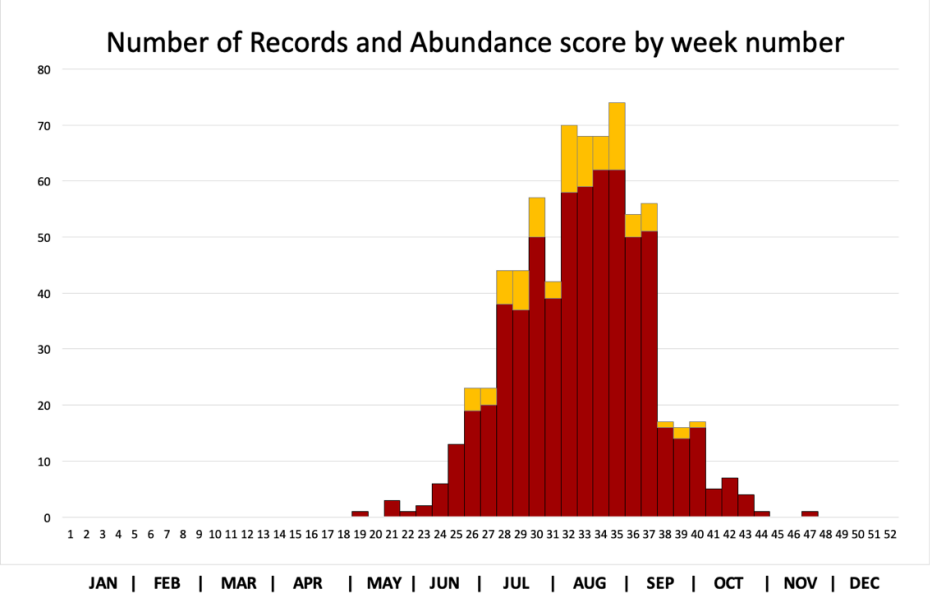




Southern Hawker (*Aeshna cyanea*)

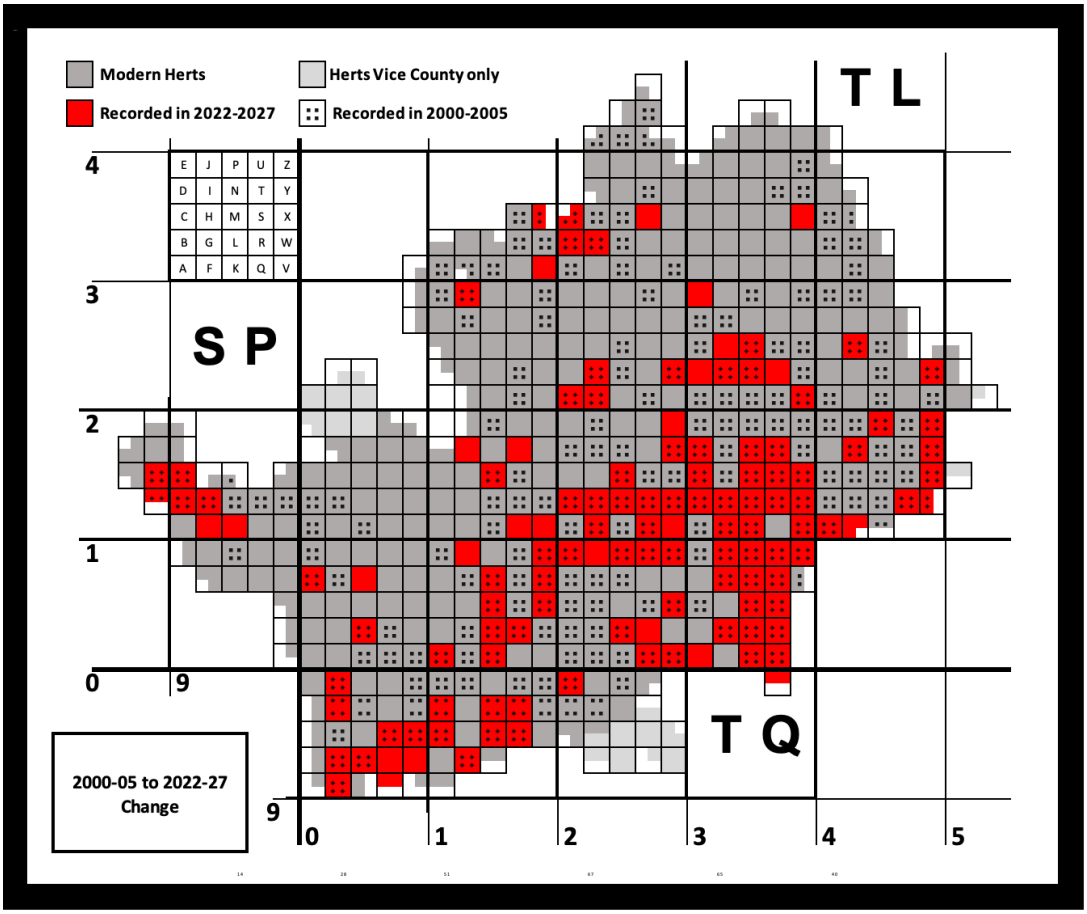
The number of tetrads that Southern Hawkers have so far been recorded from during the current survey suggests that the number of occupied tetrads may be stable – but the number of records is well down on the total from the 2000-2005 survey which may indicate that they are becoming less numerous.

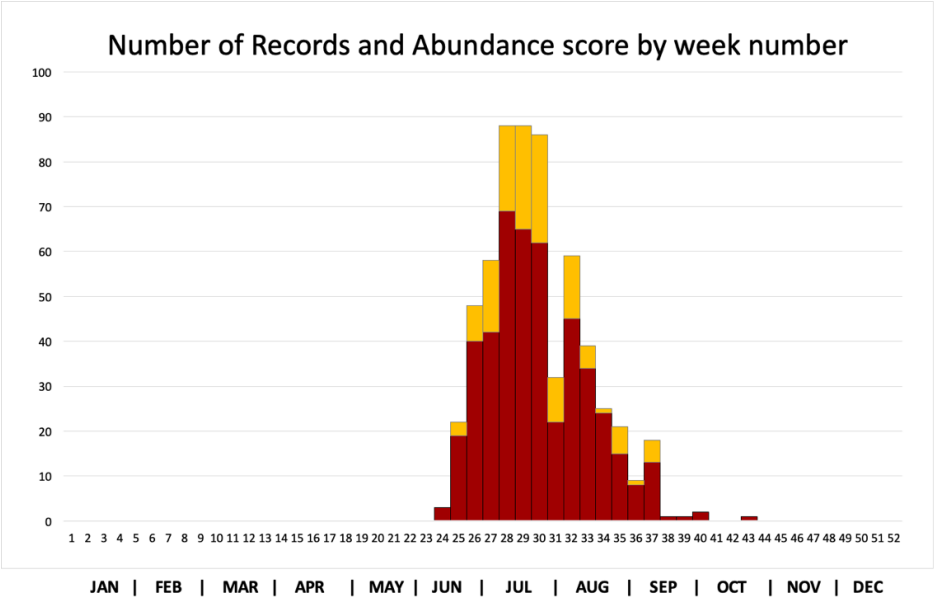




Brown Hawker (*Aeshna grandis*)

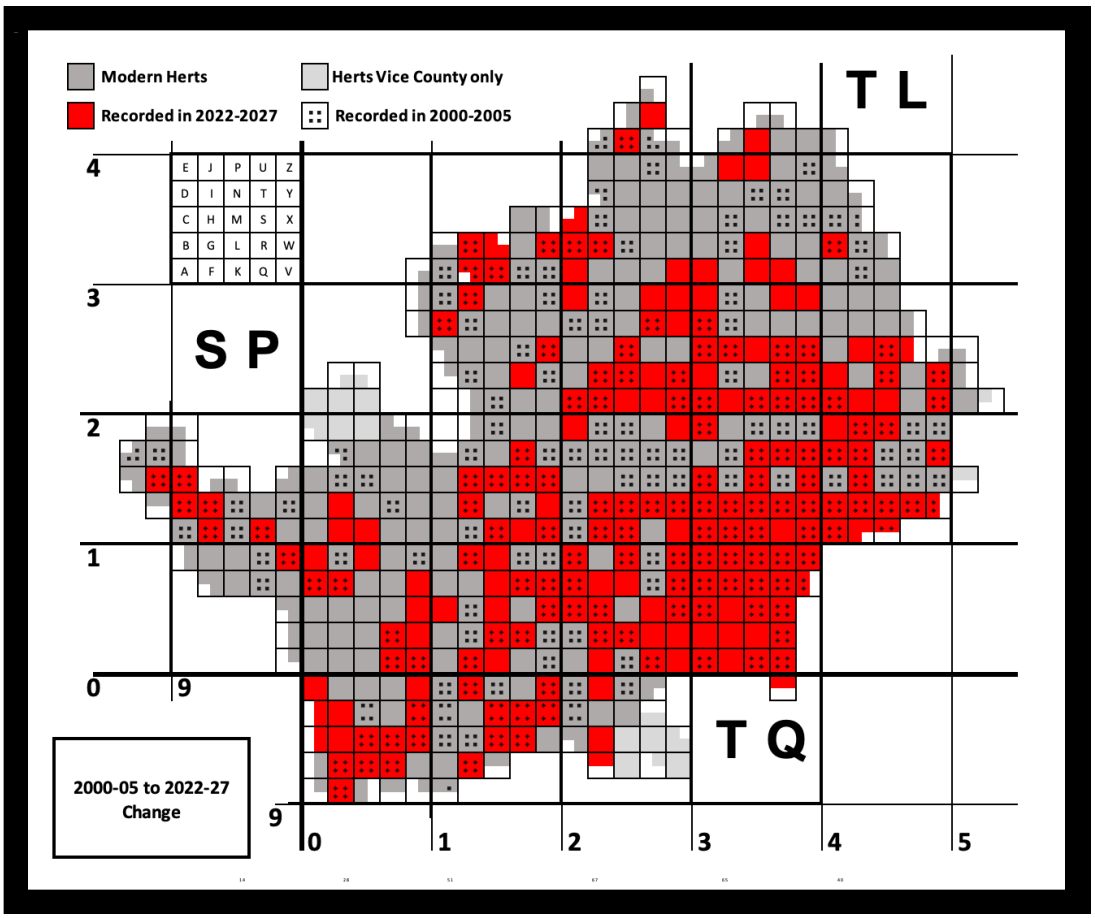
Despite being a large, distinctive species both the number of records and the number of tetrads that Brown Hawkers have been recorded from are only at about half the totals from 2000-2005 which suggests a real, and quite significant decline. This is the only Hertfordshire species that seems to be declining that doesn't tend to favour small ponds as breeding habitat.

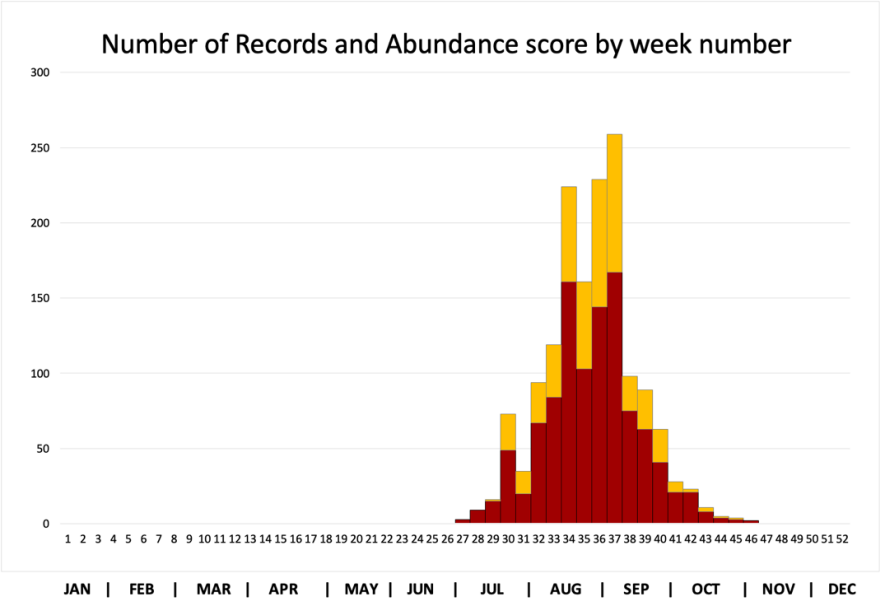




Migrant Hawker (*Aeshna mixta*)

A widespread species in the county that is often encountered far from water. Current indications are that the species is stable or perhaps showing a slight increase.

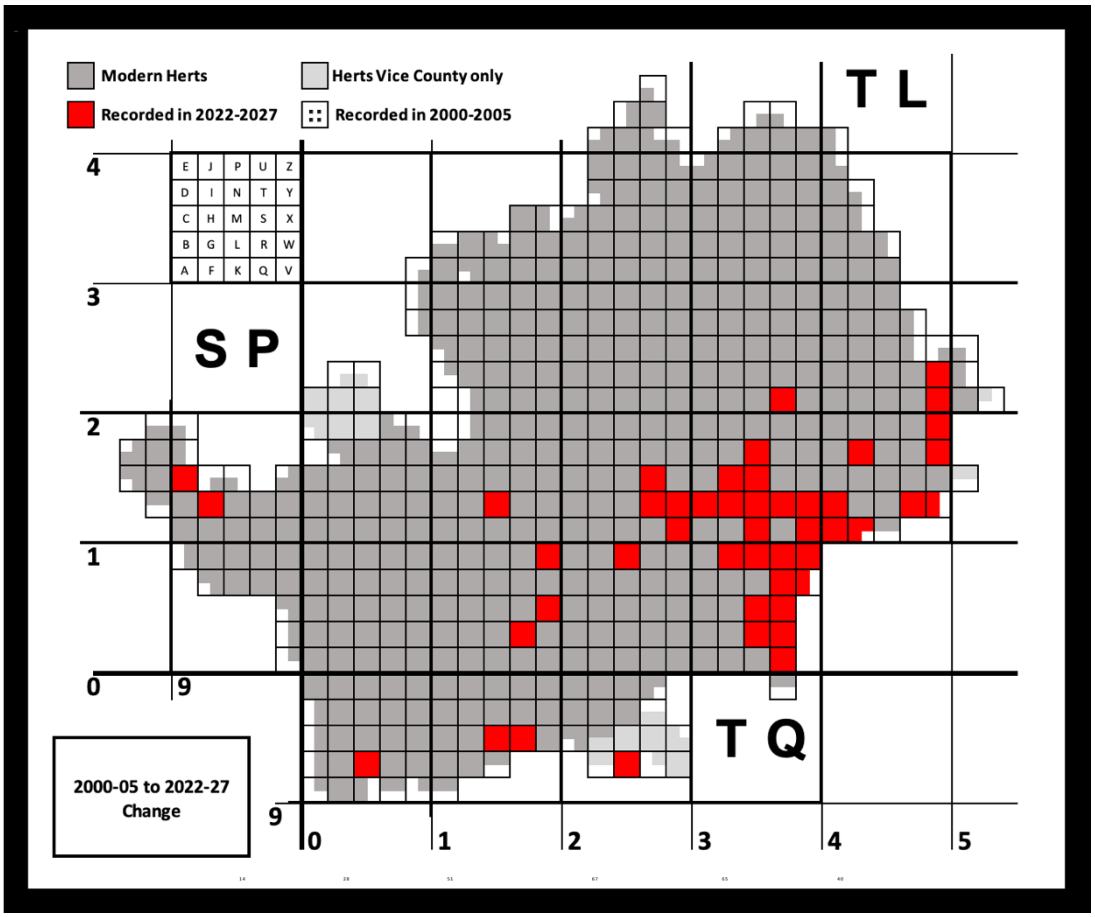


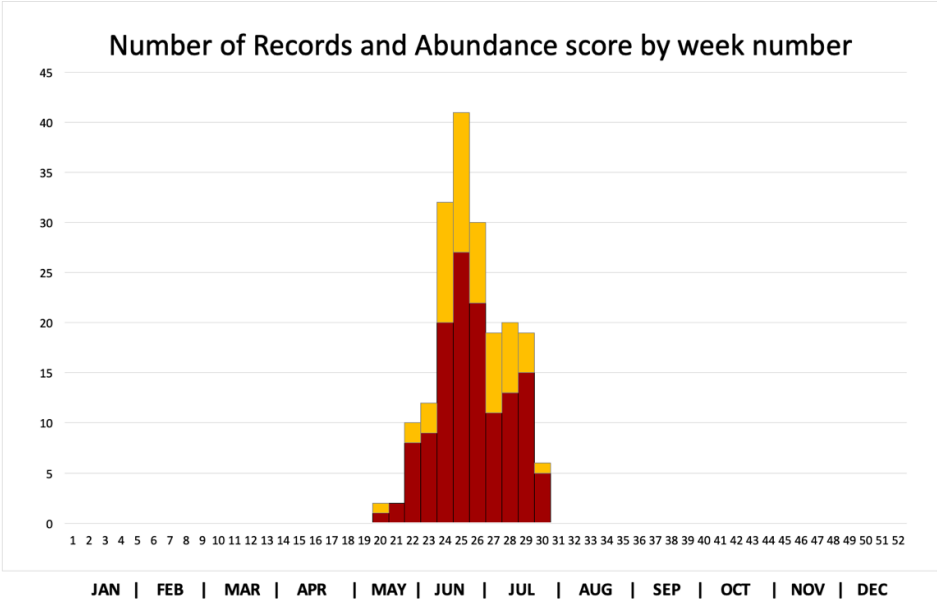


Norfolk Hawker (*Isoaeschna isosceles*)

So far there have been 378 records of Norfolk Hawker received during the new atlas survey, with accepted records from 46 different tetrads – which means this is the species that has currently shown the fourth largest increase in distribution of all species, and the largest increase in the number of tetrads of any of the dragonfly species.

Although still predominately found in the south-eastern parts of Hertfordshire they are increasing being reported from elsewhere.

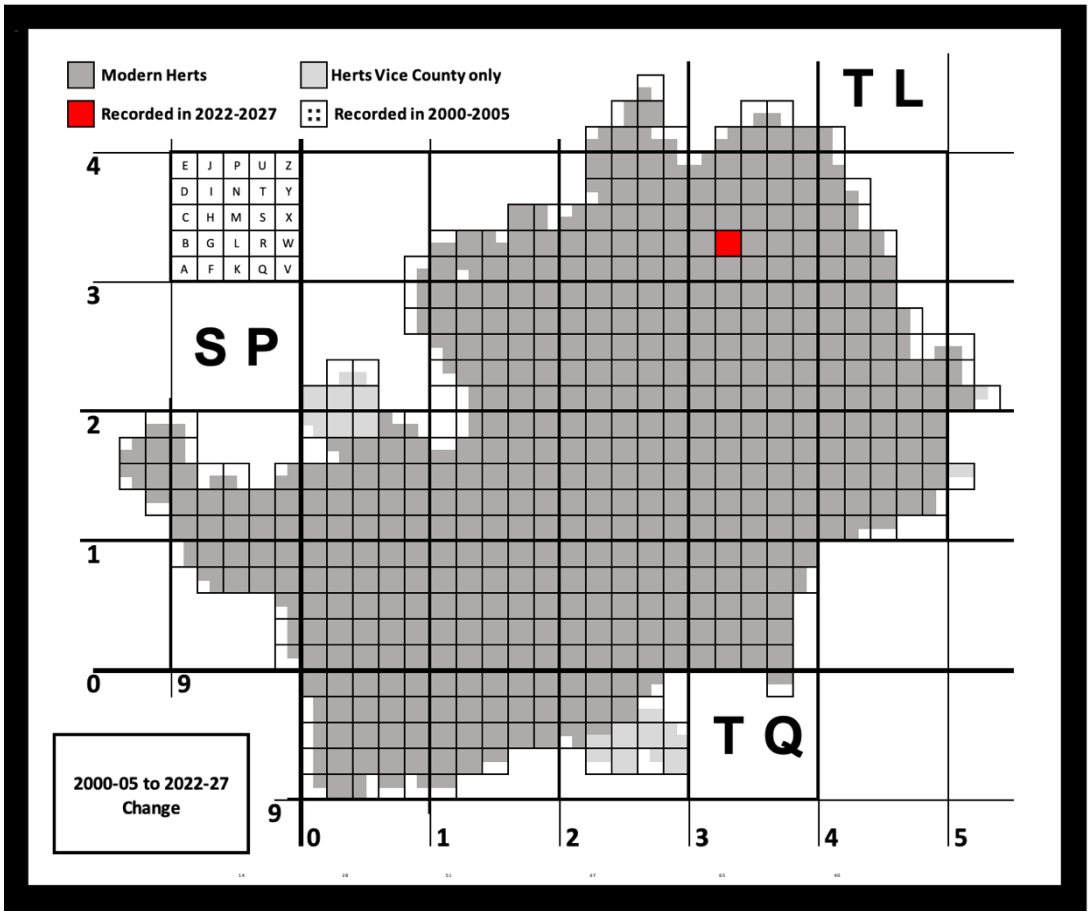


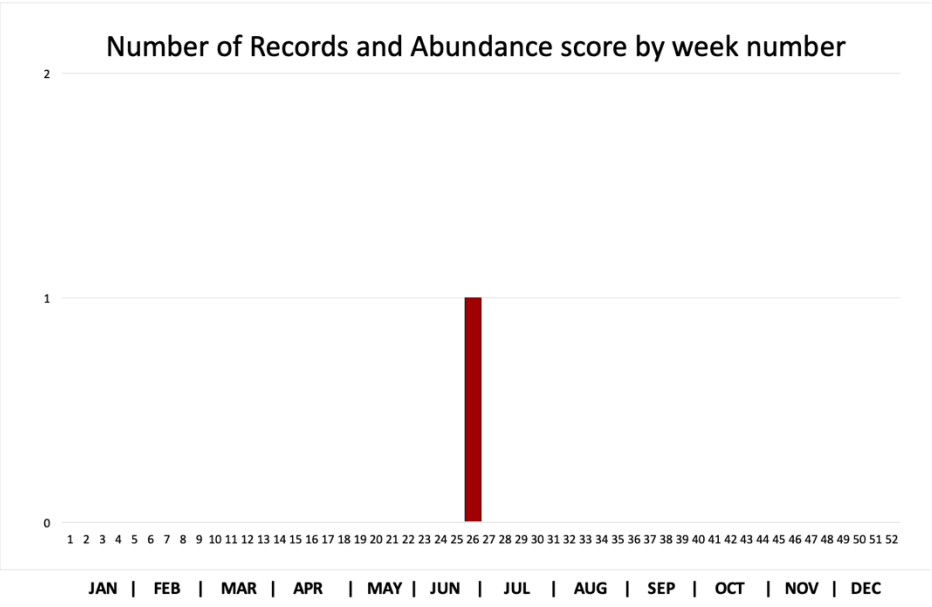


Vagrant Emperor (*Anax ephippiger*)

A vagrant species from Africa and the Mediterranean region that reaches the UK in irregular numbers.

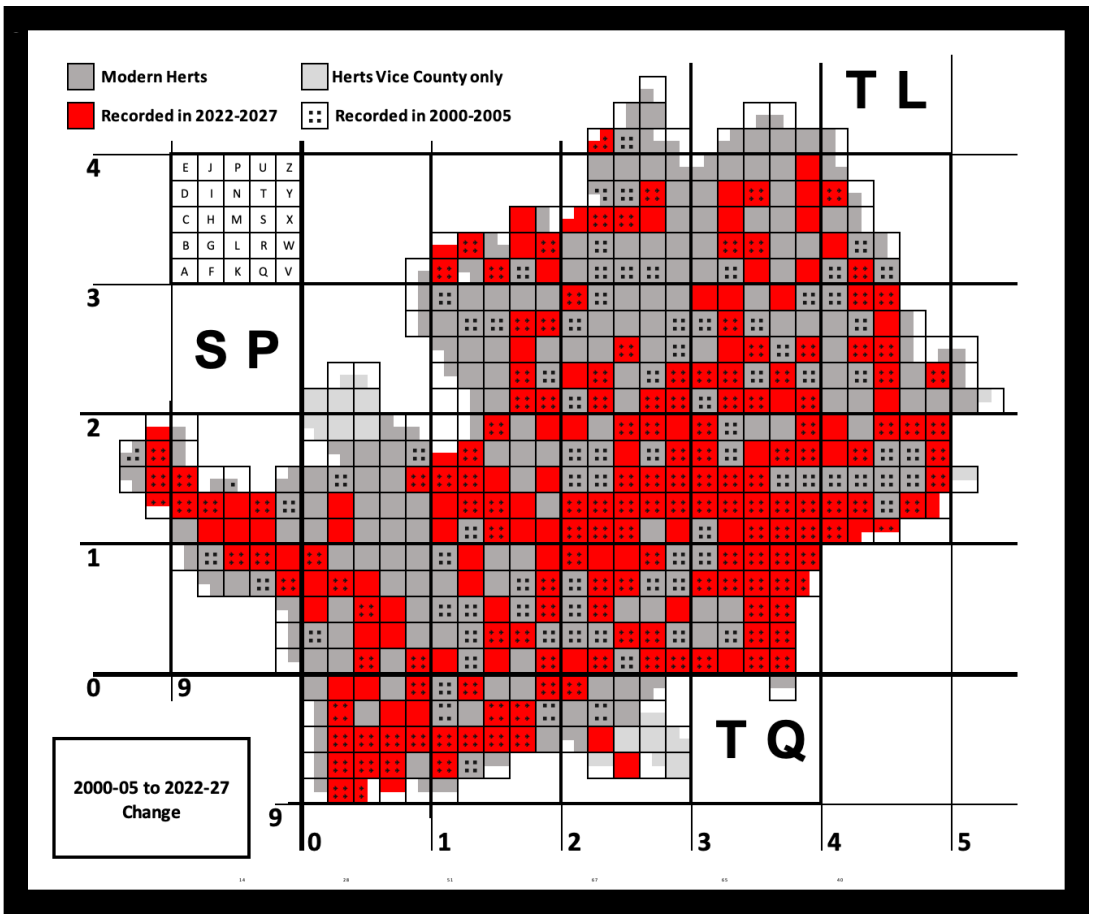
Most UK records tend to be from coastal localities and one on 27th June 2025 was only the second county record.

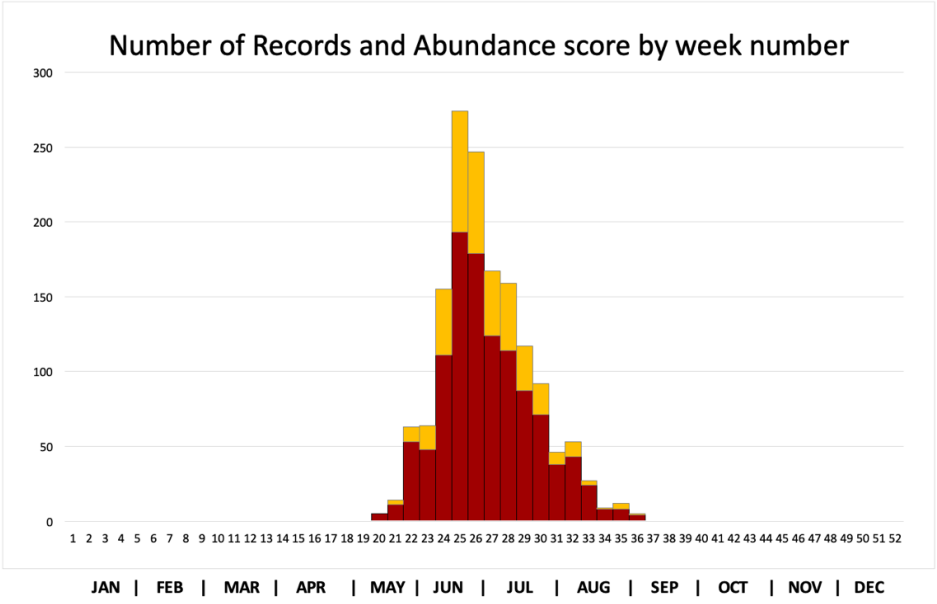




Emperor Dragonfly (*Anax imperator*)

Results so far still suggest that this species is at least stable in comparison to the first survey and now seem to point to a slight increase.

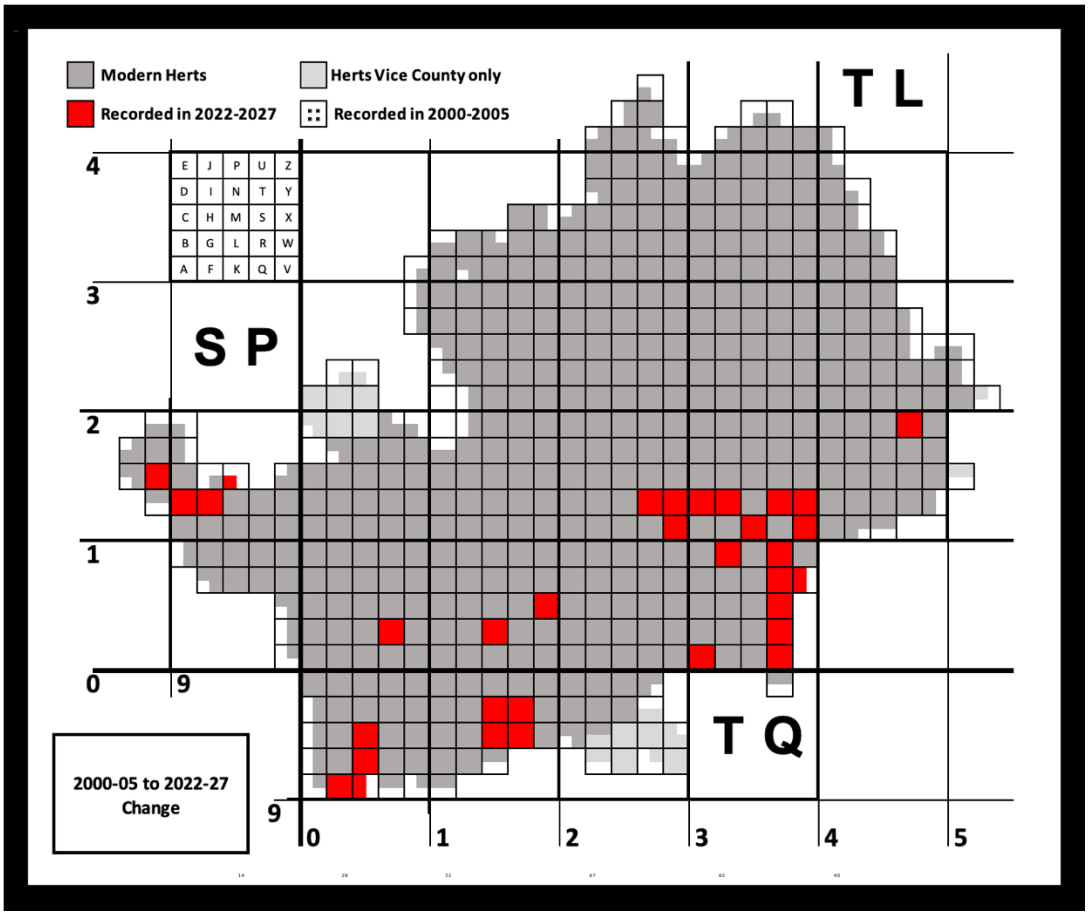


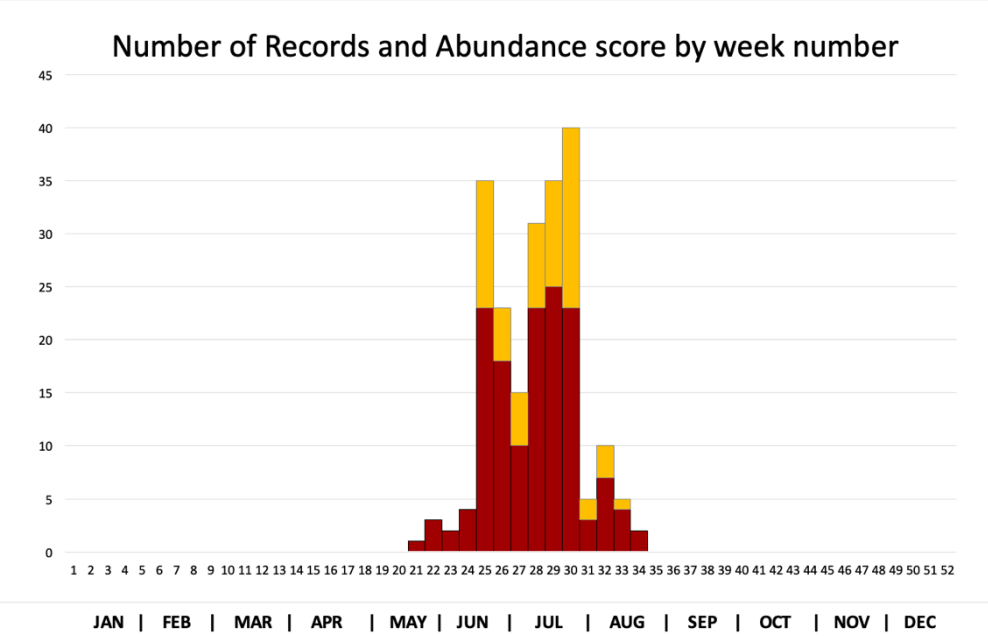


Lesser Emperor (*Anax parthenope*)

Lesser Emperor just made it into the 2000-2005 atlas after being first recorded in the county in 2006, even though there were no records during the survey years.

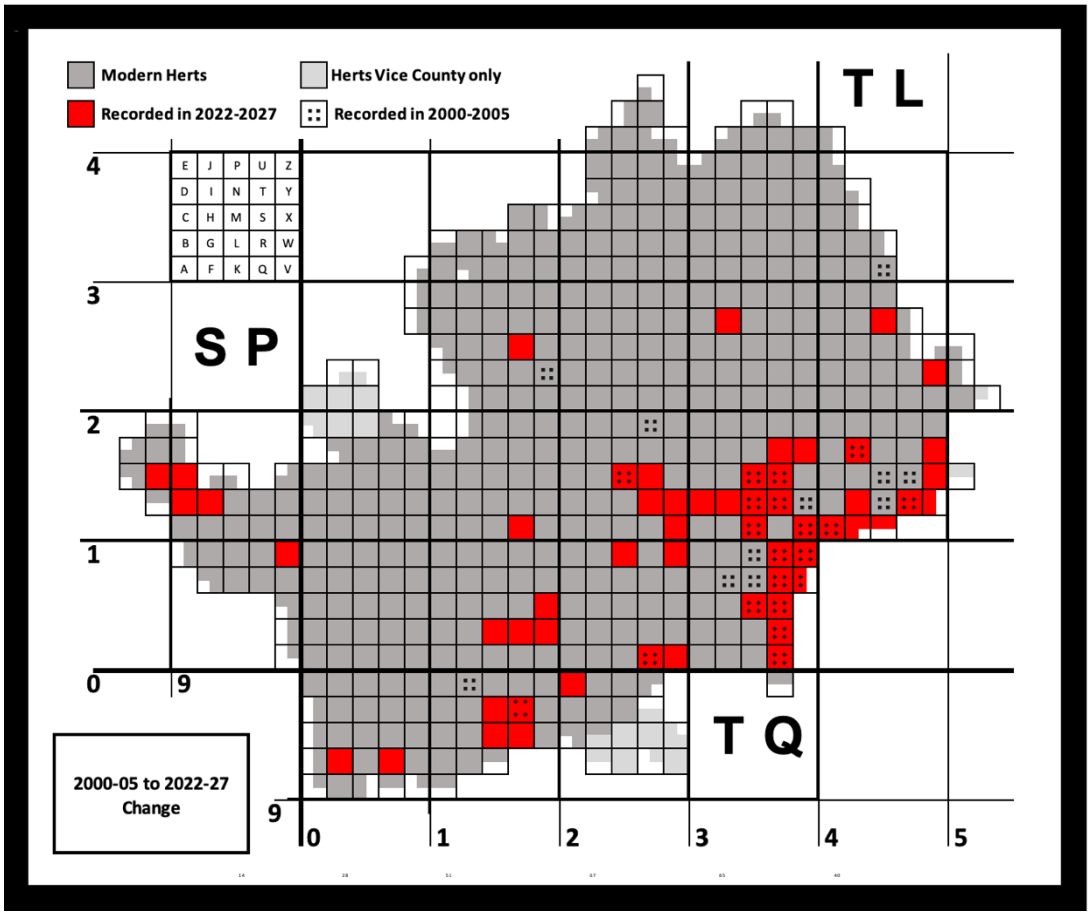
The species is now well seemingly established at Hilfield Park Reservoir and is becoming established at sites elsewhere in the county, mainly being seen where there are large lakes or gravel pits.

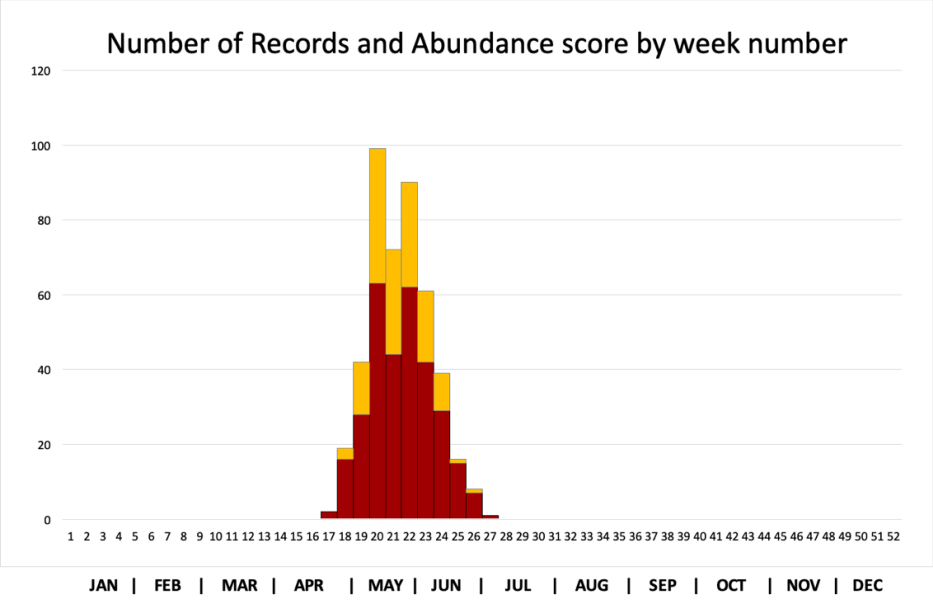




Hairy Dragonfly (*Brachytron pratense*)

Yet another species that has notably increased its range in Hertfordshire, with the number of tetrads now close to double the previous total and the number of records already exceeding two and a half times the total from the first atlas survey.

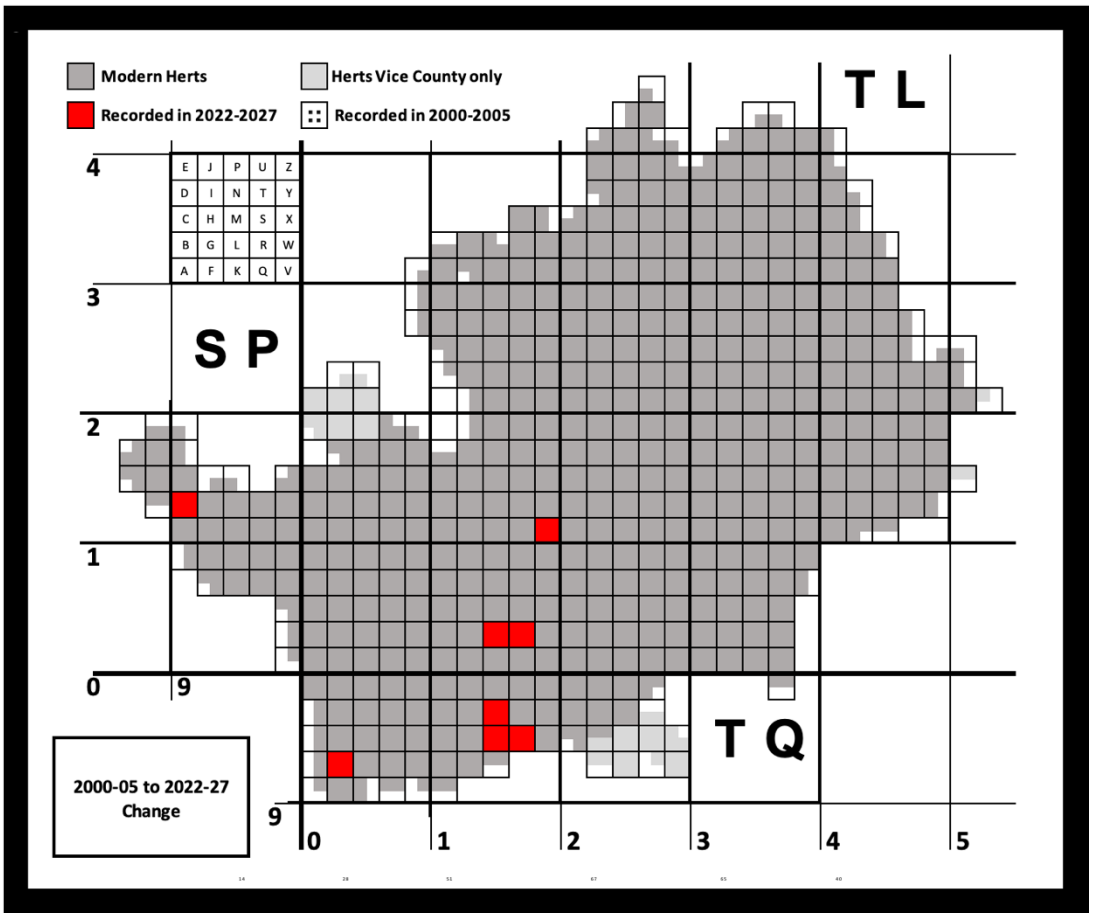


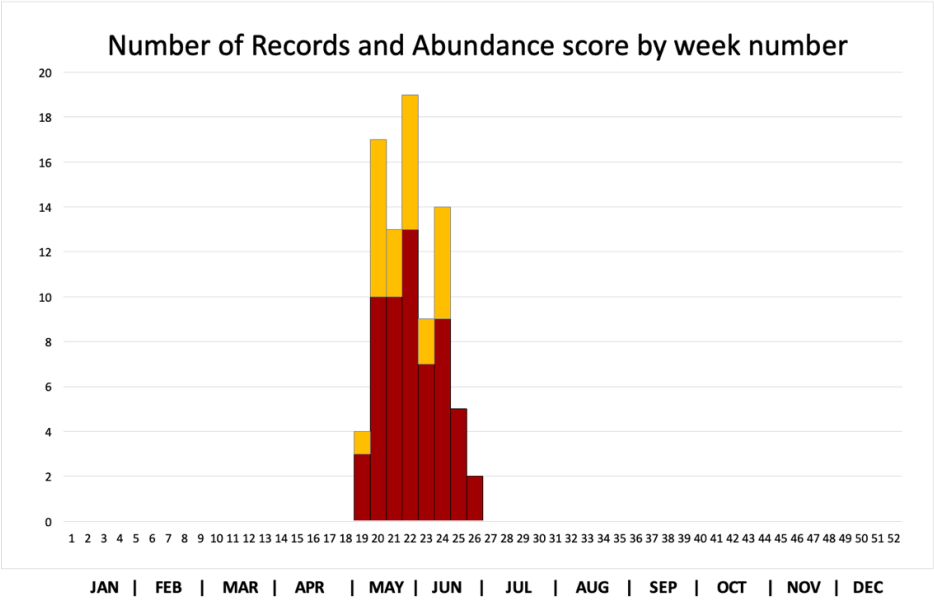


Downy Emerald (*Cordulia aenea*)

Another species that has recently started to move into the county from the south and west.

Although currently recorded from relatively few sites, there is the potential for further spread as there is plenty of potentially suitable habitat.

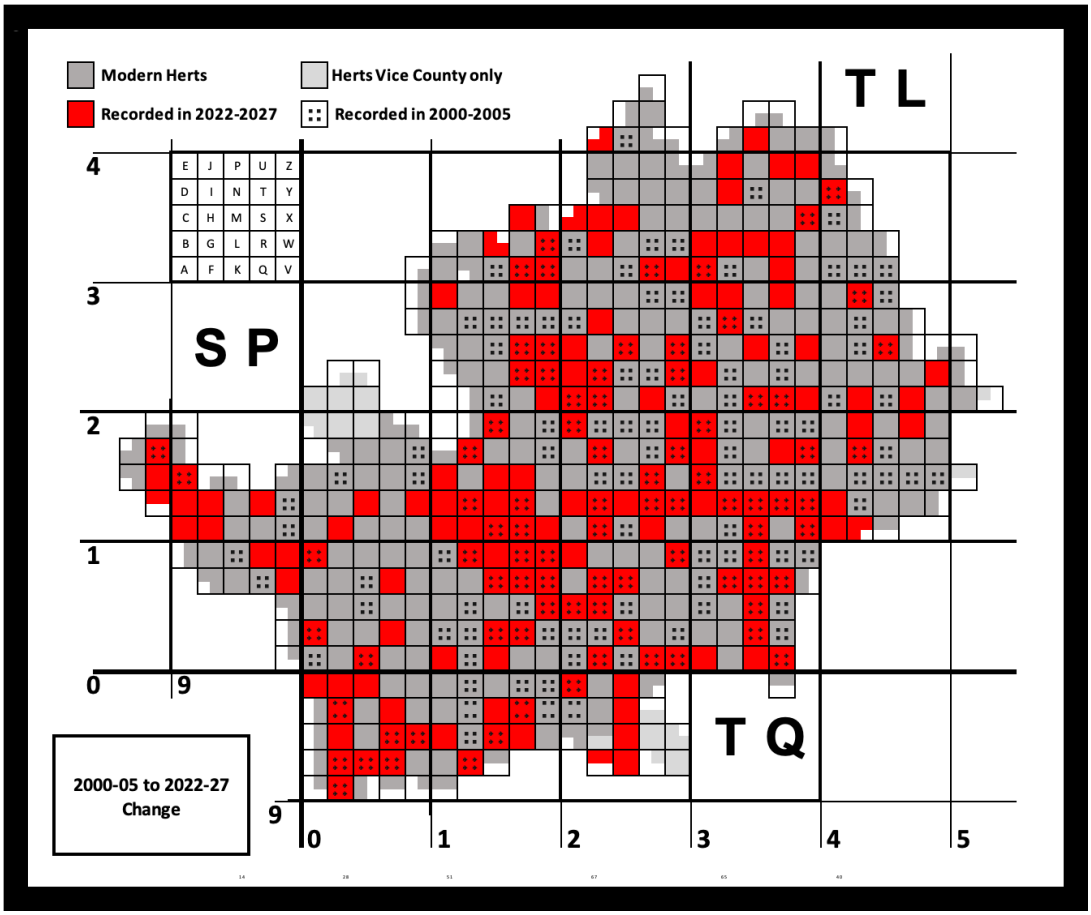


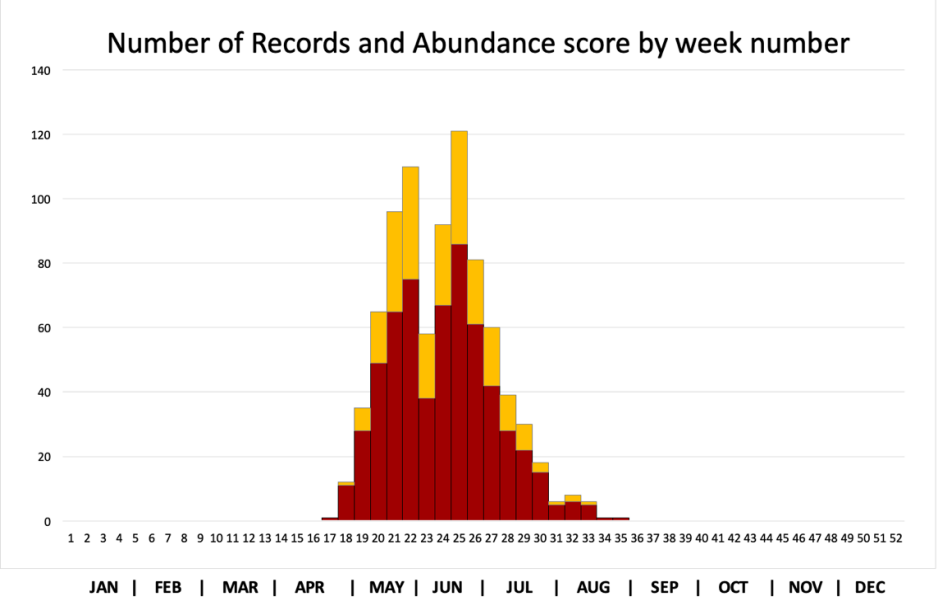


Broad-bodied Chaser (*Libellula depressa*)

Likely increasing slightly.

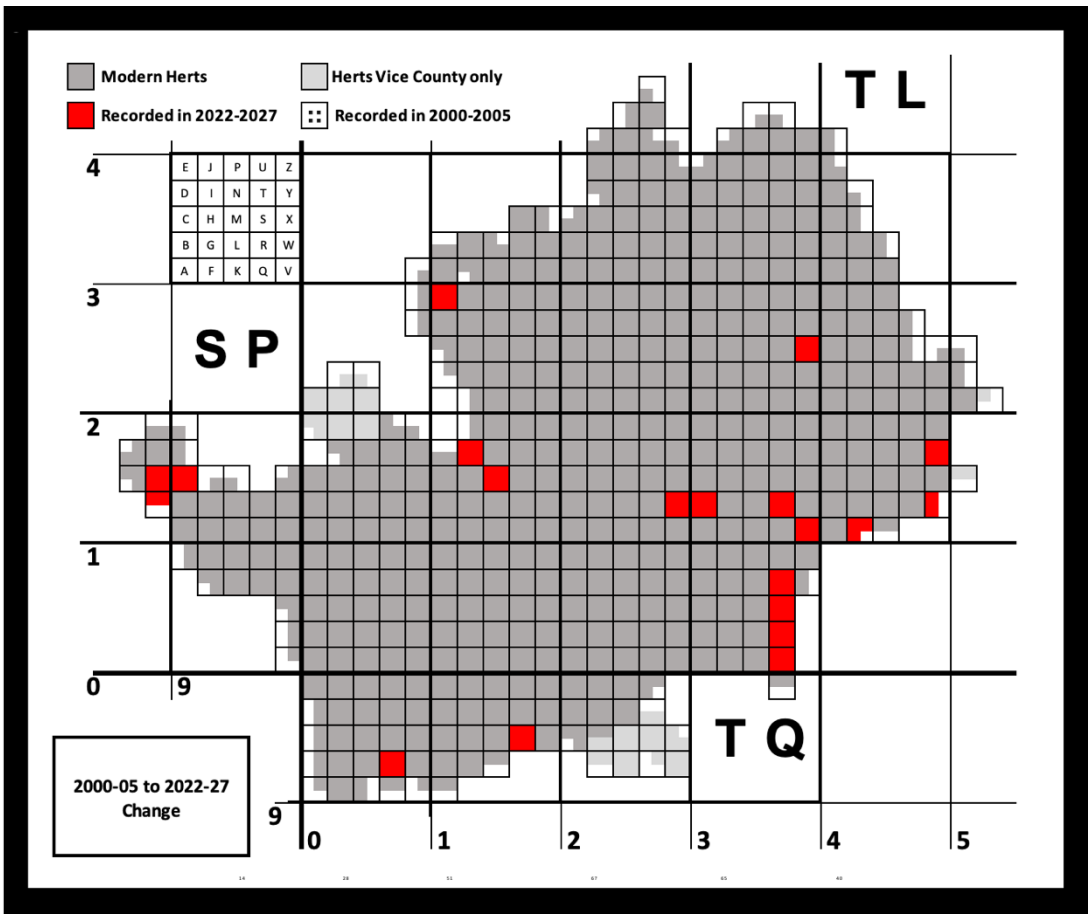
Like several other species that favour smaller ponds for breeding, Broad-bodied Chasers continue to be found in many new tetrads while many tetrads where they were recorded during the 2000-2005 survey have produced no records.

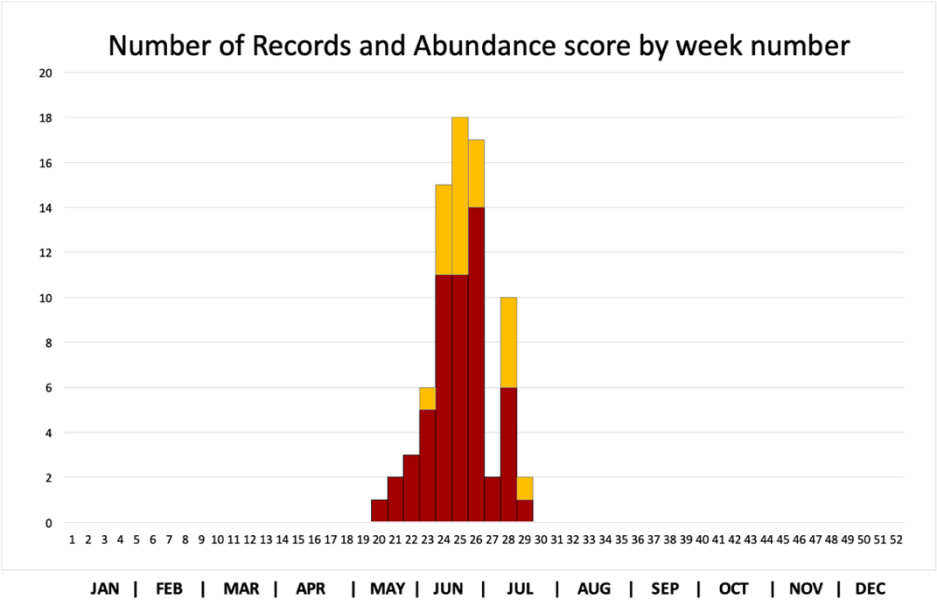




Scarce Chaser (*Libellula fulva*)

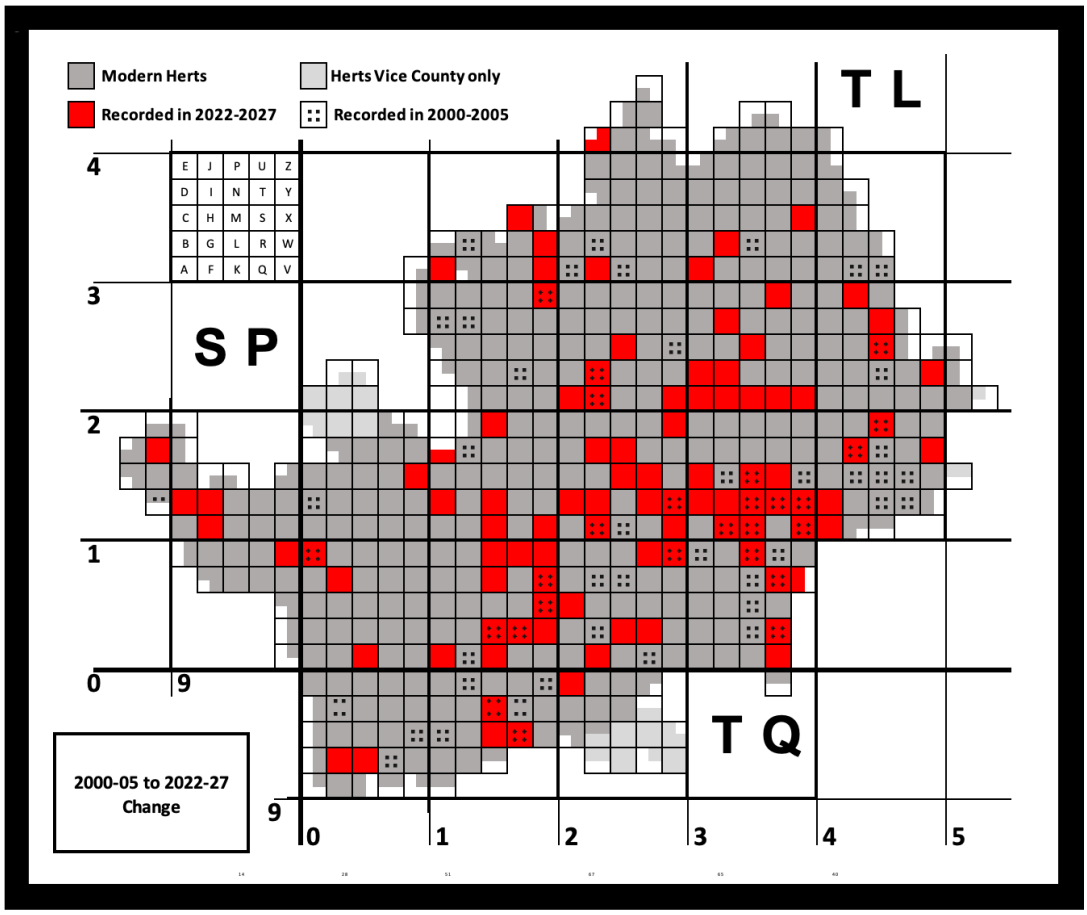
Another recent arrival in the county that has so far failed to become either numerous or widespread. So far, Scarce Chasers have been recorded from 20 tetrads during the current survey period, with 56 records in total.

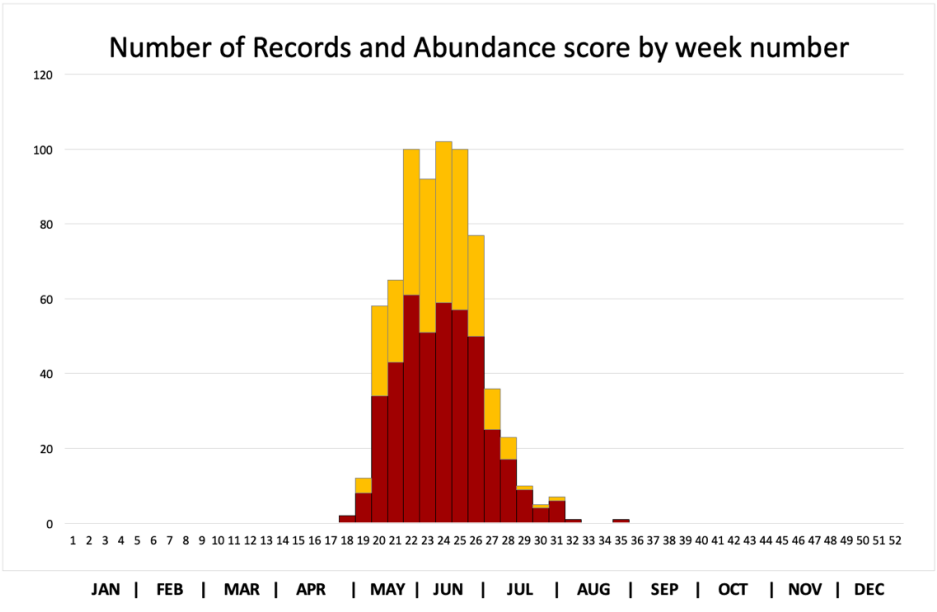




Four-spotted Chaser (*Libellula quadrimaculata*)

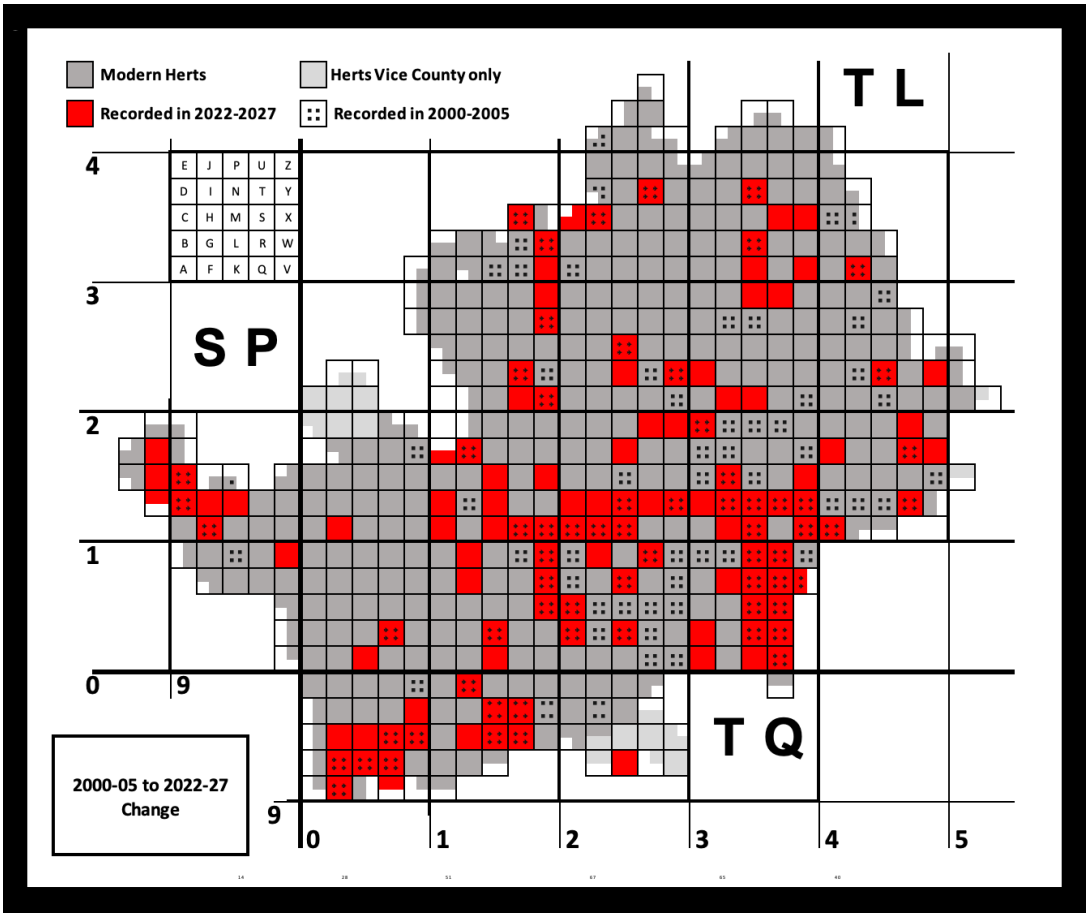
There have now been 429 records of Four-spotted Chaser, from 99 tetrads, during 2022-2026, compared to just 214 records from 67 tetrads during the 2000-2005 survey. Nearly three-quarters of the records from the current survey (73) have been from 'new' tetrads where there were no records during the previous survey, suggesting that the species is not only increasing but that populations are somewhat transient in nature.

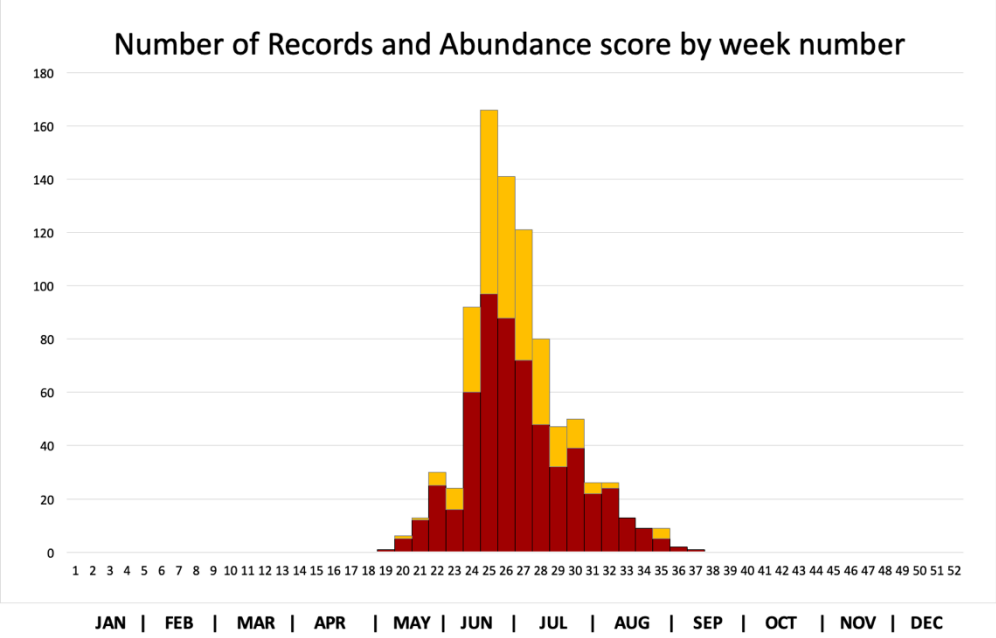




Black-tailed Skimmer (*Orthetrum cancellatum*)

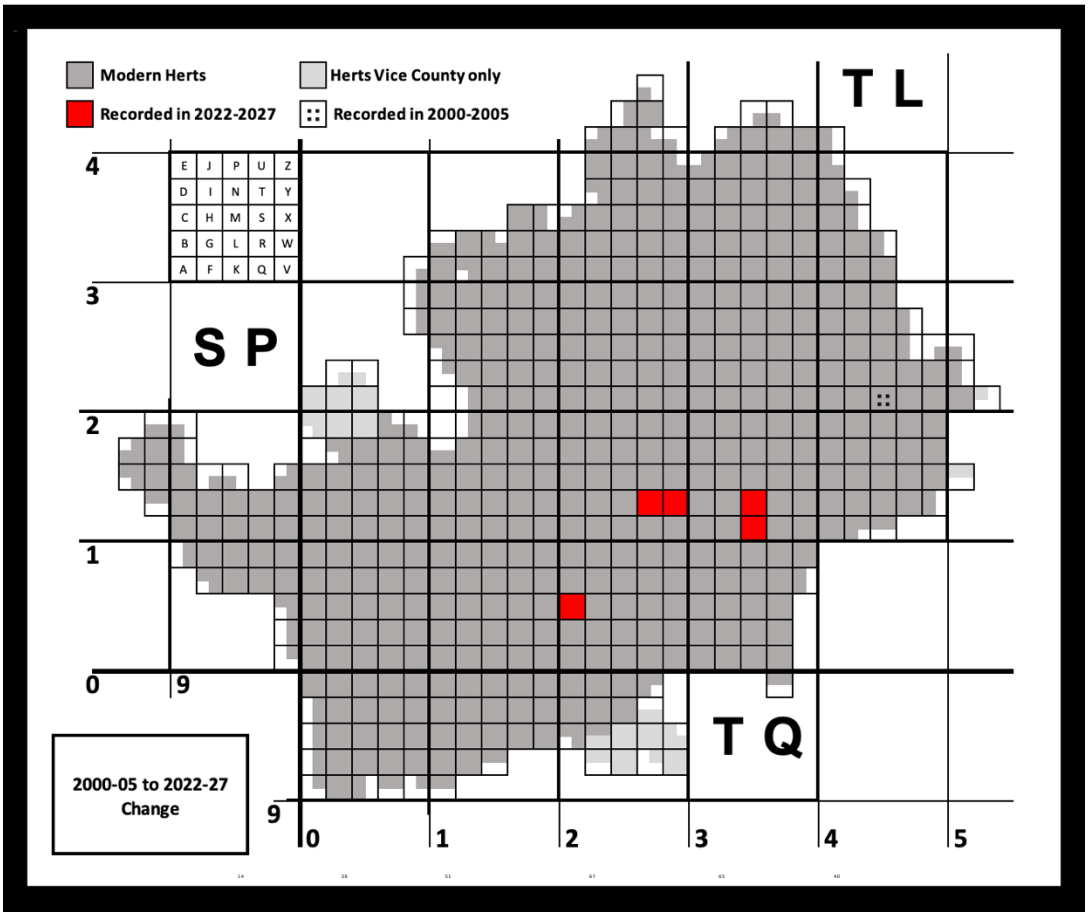
Early indications suggest that Black-tailed Skimmers are stable or increasing although, as with some other species, it may be that the apparent potential increase is solely due to the fact that tetrads that previously held the species have so far received more attention from surveys during the initial years of this survey.

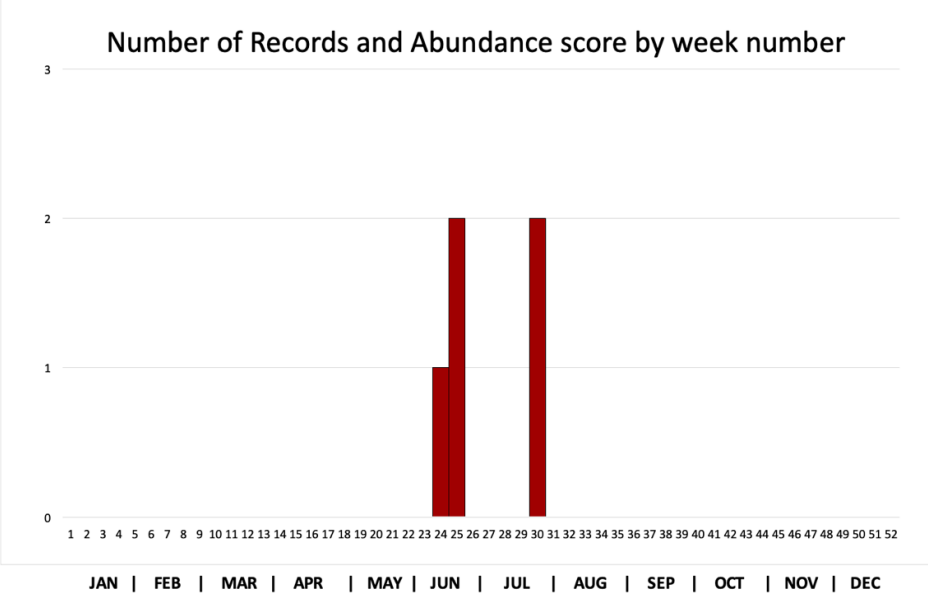




Keeled Skimmer (*Orthetrum coerulescens*)

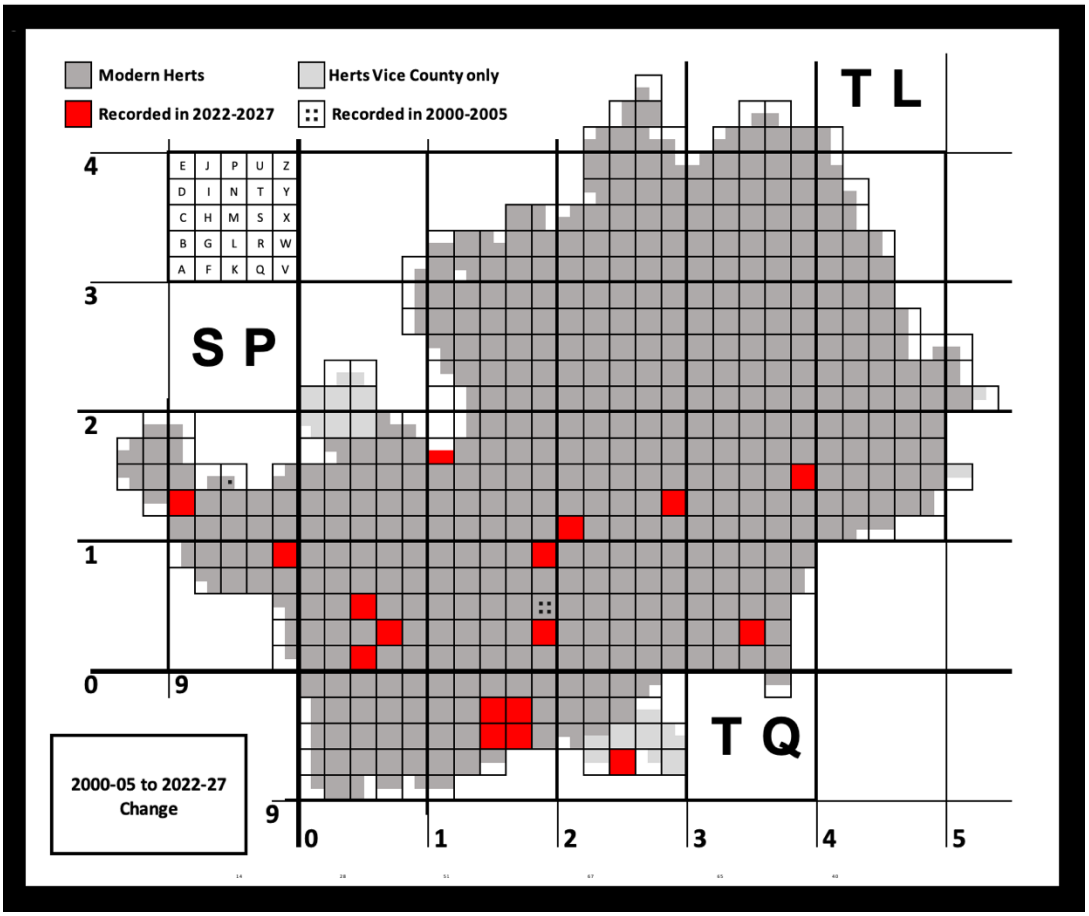
Keeled Skimmer remains a rare vagrant to Hertfordshire, but there have now been five records since 2022 – although two of these refer to a single male that was at a small point that is on the border between two different tetrads. This compares with just one record during the previous atlas period and one during the years between the two surveys.

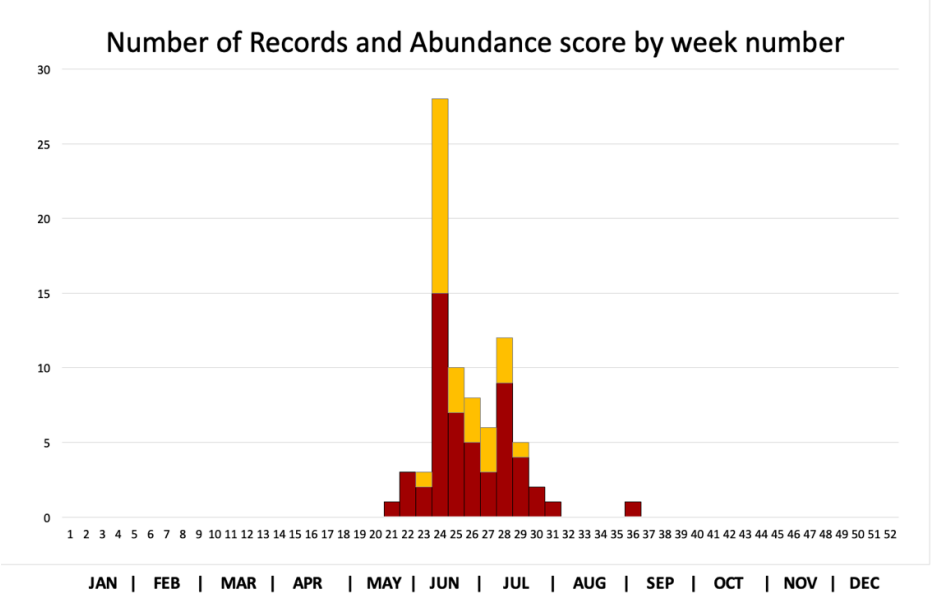




Red-veined Darter (*Sympetrum fonscolombii*)

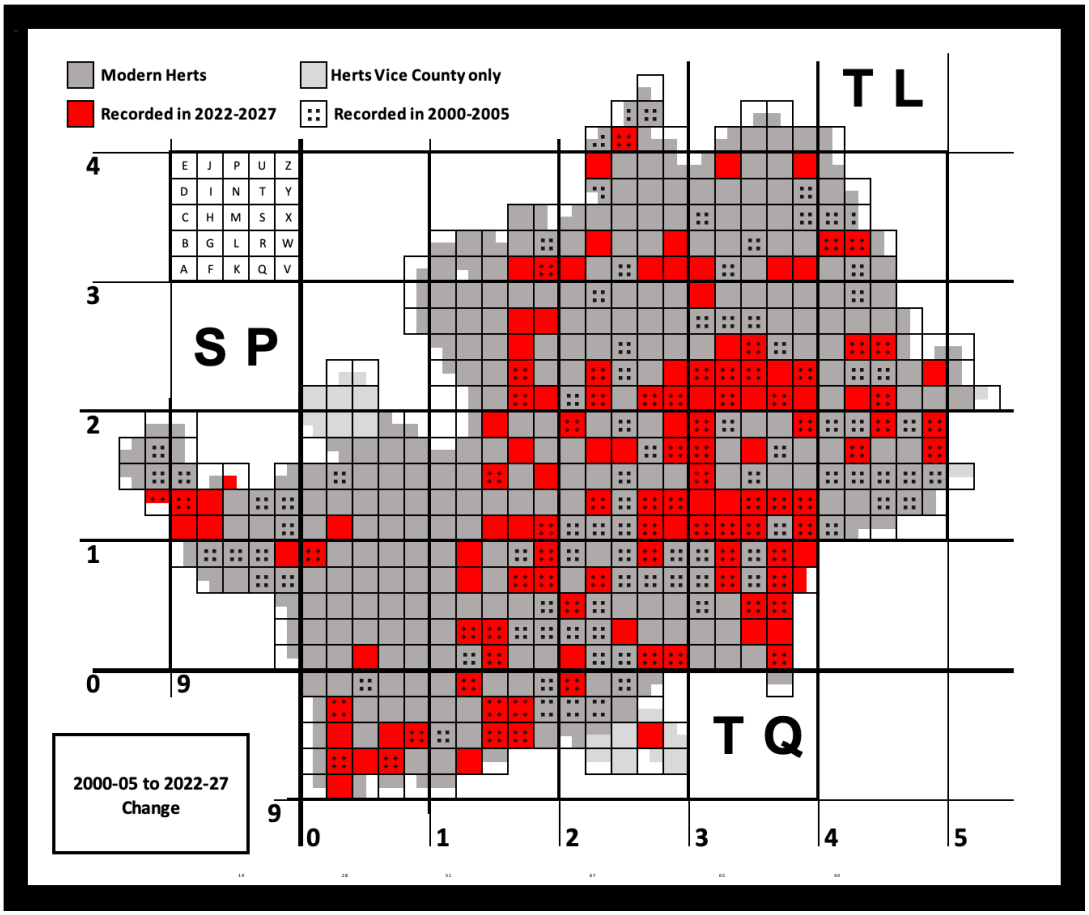
Although they remain an irruptive immigrant that typically establishes only temporary populations in the UK, Red-veined Darters seem to have become more frequent in the UK in recent years and this increase has been reflected in the number of Hertfordshire records – even though it remains a relatively scarce visitor.

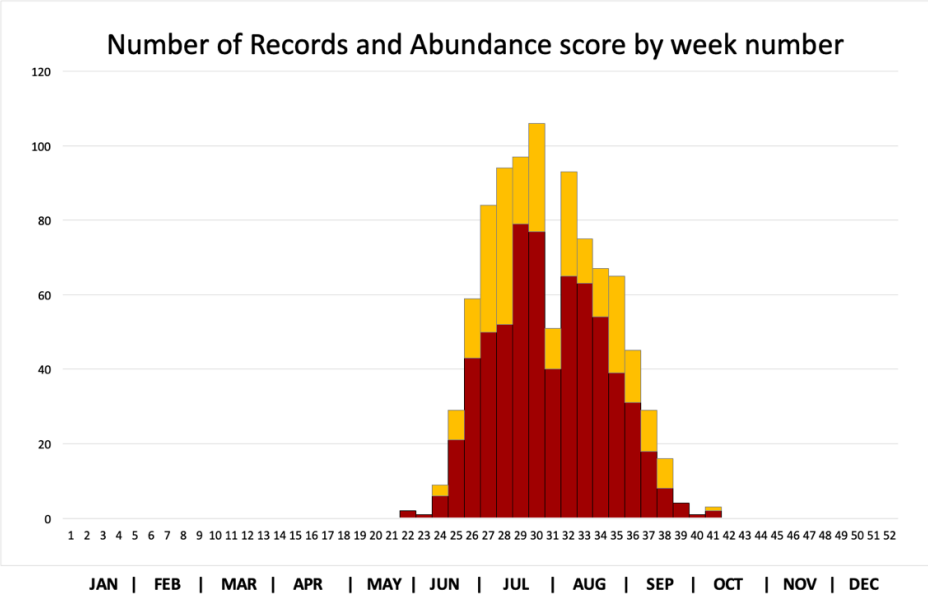




Ruddy Darter (*Sympetrum sanguineum*)

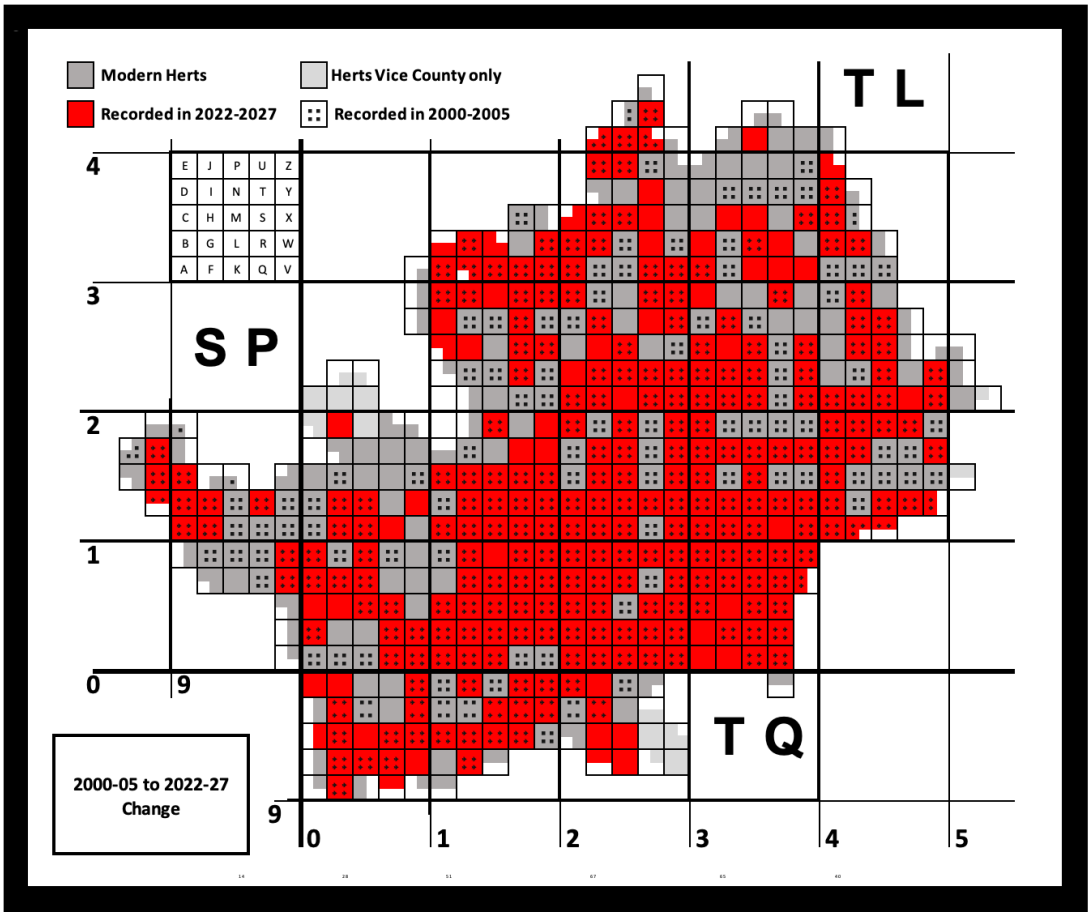
Indications are still that Ruddy Darter is either stable or slightly declining in Hertfordshire, although it still remains widespread.

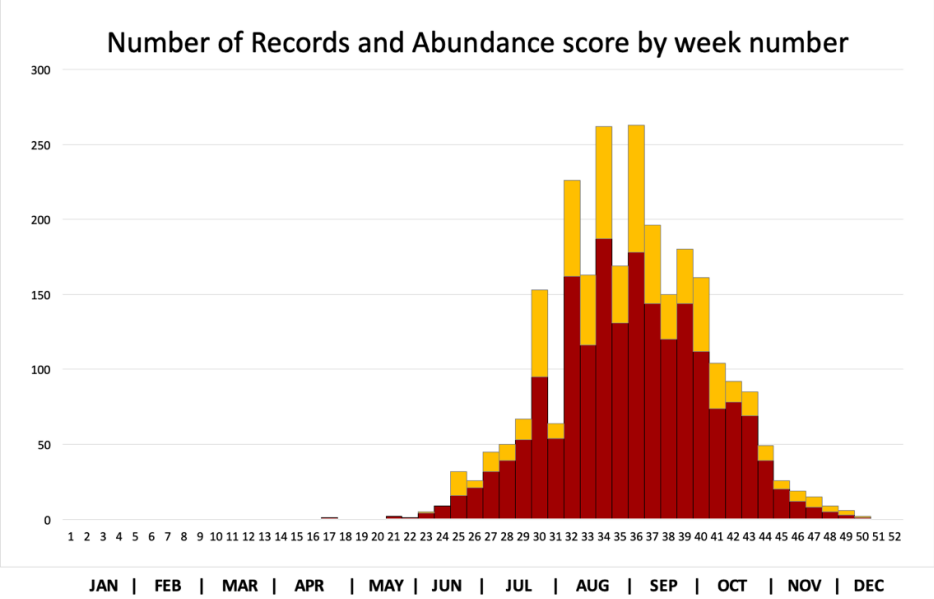




Common Darter (*Sympetrum striolatum*)

This was the most widespread species during the first atlas survey, based on the number of tetrads in which it was recorded, and remains the most widespread species at the end of 2026. The species also seems stable, with the current number of tetrads at 86%, and the number of records just over 125%, of the 2000-2005 totals.





Submission of records

All records are still useful so please continue to submit any dragonflies and damselflies seen during 2027.Any records from previous years that haven't yet been submitted can also still be sent in if you have any.

Details required

As a minimum the following four details are required for a biological record:

What – What species was observed.
If you are uncertain of the species but have a photo, however poor, it might be possible to identify the species from the photo if included with a record.

When – What date was the species recorded on.
Although full dates are most useful, records that only include a month and year, or even just a year can sometimes be used if that's all the detail you have.

Where – Where was the species recorded.
Ordnance Survey grid references are used to identify the tetrad (2km square) or monad (1km square) a record is in and should be two letters and at least four numbers to allow a monad to be identified. 'What three words' locations can be provided via email if preferred, and post codes can sometimes be used (although aren't always very precise).

Site names are useful as an additional detail but don't always allow a record to be placed correctly if only a site name is provided – and town/village names alone are rarely precise enough as they frequently extend into more than one tetrad.

Who – Who was it that recorded the species.
Please provide a full name for observers, not just a first name or an nickname/ username because records that aren't attributed to a person may be rejected.

Additional details that can make records even more valuable when added to the above details include the following:

- **Number seen** - the number of individuals of each species.
- **Habitat** - for example, small pond, large pond, lake, river, canal or 'away from water'.
- **Breeding evidence** - mating, egg laying, larvae, emerging adults, or shed larval skins.
- **Photos** - photos of one or more of the actual dragonflies/damselflies observed can help to confirm records of scarcer species. Please do not use photos found online that look like what was seen

Verification

All records are checked and verified before being accepted, and this means that sometimes additional details may be requested for records of rarer/scarce species, or for records outside of the species main flight period. This helps to ensure accuracy.

How to submit records

Records can be submitted in any of the following ways, depending on your preference...

Email

Any records (or questions) can be emailed to:

dragonflies@hnhs.org

iRecord

The British Dragonfly Society uses iRecord for record submission.

To submit records this way it is first necessary to create a free account but records of dragonflies can then be submitted either as single species records or as a number of different species from a single site. Photographs can be uploaded with a record, and the precise location(s) can be selected from a map.

https://irecord.org.uk/

Hertfordshire Natural History Society website

The HNHS website allows records of most species to be entered but might not accept records of some of the newer species that have reached the county (these should be submitted via email or iRecord as they are more likely to require photos or more detail for verification).

Photos cannot currently be uploaded with records submitted via the HNHS website, but the website does allow users to choose the location of a record on a map to find the grid reference.

https://www.hnhs.org/submit/dragonflies-and-damselflies

iNaturalist

Some observers may already use iNaturalist or find it easier to use, and records entered here are fed into iRecord if certain conditions are met.

Records need to have been uploaded with a photo and the identification has to have been agreed by at least two users, and the 'Default Observation License' (Under 'Account Settings' > 'Content & Display') needs to allow sharing. Licensing for photos, but not observations, can be set to 'No license (All rights reserved) if you prefer.

Please also make sure that the observation locations are precise and not 'obscured', and preferably give your real name as the 'Display Name' (Under 'Account Settings' > 'Profile').

https://www.inaturalist.org/home