

The White-legged Damselfly Investigation

On the search for a mysterious river damsel

2019 Report



www.british-dragonflies.org.uk

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Project Introduction

The British Isles is currently experiencing a period of unprecedented environmental change. The warming climate, combined with direct man-made threats (urbanisation, invasive species introduction and pollution, to name a few), are putting intensive pressure on species to adapt rapidly or risk extinction.

The job of biological recording schemes is to help identify which species are adapting to these changes and which species are declining. Scientists can then investigate the underlying ecological factors that determine the observed changes in species' populations in an effort to improve our understanding of how to work towards conserving these species.

Insect populations, including dragonflies, are quick to respond to environmental changes as a result of their short life cycles and the fact they rely on external temperatures to regulate their metabolisms. This makes them particularly sensitive to changes in climate.

The rapid rate of environmental change in the UK is putting pressure on UK biological recording schemes to provide up to date data on the distribution of insect species which can change dramatically on an annual base.

This job is even more problematic if a species is not well known, elusive or under-recorded. . .

Male White-legged Damselfly



White-legged Damselfly: Species Profile

Scientific name *Platycnemis pennipes*

Length 36mm

Identification Males are pale blue while females are a pale creamy colour; both have limited black abdomen markings and pale brown wing spots.

Similar species Other blue and black Damselflies, such as Common Blue and Azure Damselfly, may appear similar on first glance. However, White-legged Damselfly can be separated from these species because of its weaker black abdomen markings and its paler coloration and wing spots.

Habitat Associated with slow flowing rivers and streams, but can also be found on ponds and lakes.

Distribution Wales and England; as far north as Derbyshire and as far west as Powys.

Flight period May to September.

Conservation status While this is not a common species historic records would suggest it has a relatively substantial range across England and Wales, particularly along river systems. However, this species is notably under recorded; either as a result of recorders not targeting its primary habitats (rivers are generally less species rich than still water habitats so not as popular) or because they are misidentified as more common species. In recent years multiple County Dragonfly Recorders have raised concern the species seems to be disappearing from previous strongholds. As a result, this project was launched to improve our understanding of the species current status in the Britain.

Female White-legged Damselfly



Project Aims

Aim 1 Provide an up to date account of the distribution of White-legged Damselflies in the UK.

Objective 1 Raise the profile of the species; educate members of the public on how to find, identify, record and report sightings of the species.

Aim 2 Determine whether White-legged Damselfly habitat use has or is changing.

Objective 2 Ask recorders to collect basic habitat information and compare the results with previous/historic accounts of the species associated habitat.

Aim 3 Establish whether there is a need for conservation action to safeguard the species.

Objective 3 Use newly collected data to identify whether there has been significant population loss or range restriction of the species in the UK.

Montgomery Canal, Shropshire. An example of typical White-legged Damselfly habitat.



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2019 Results

The White-legged Damselfly Investigation was piloted in 2018 and launched in 2019. In this report we examine the first years of data collection against the existing historic data.

Number of sightings in 2019*: **1016+**

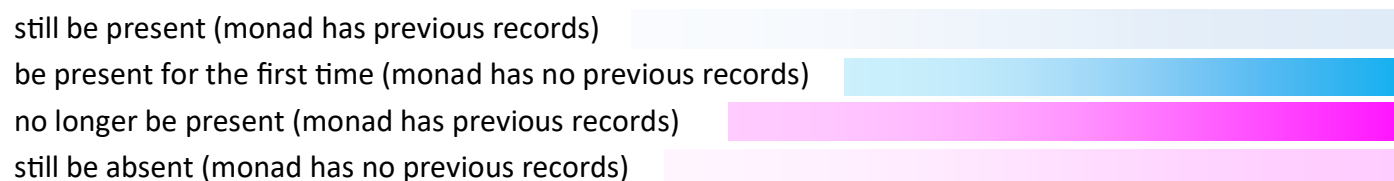
Number of recorders who reported sightings in 2019**: **90+**

*This is a minimum as many recorders did not provide an exact count.

**This is a minimum as some records were reported by recording groups

Presence/absence of White-legged Damselflies during monad visits in 2019

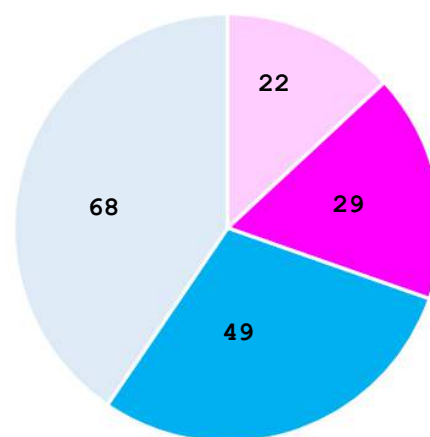
Number of monads where White-legged Damselflies were found to ...



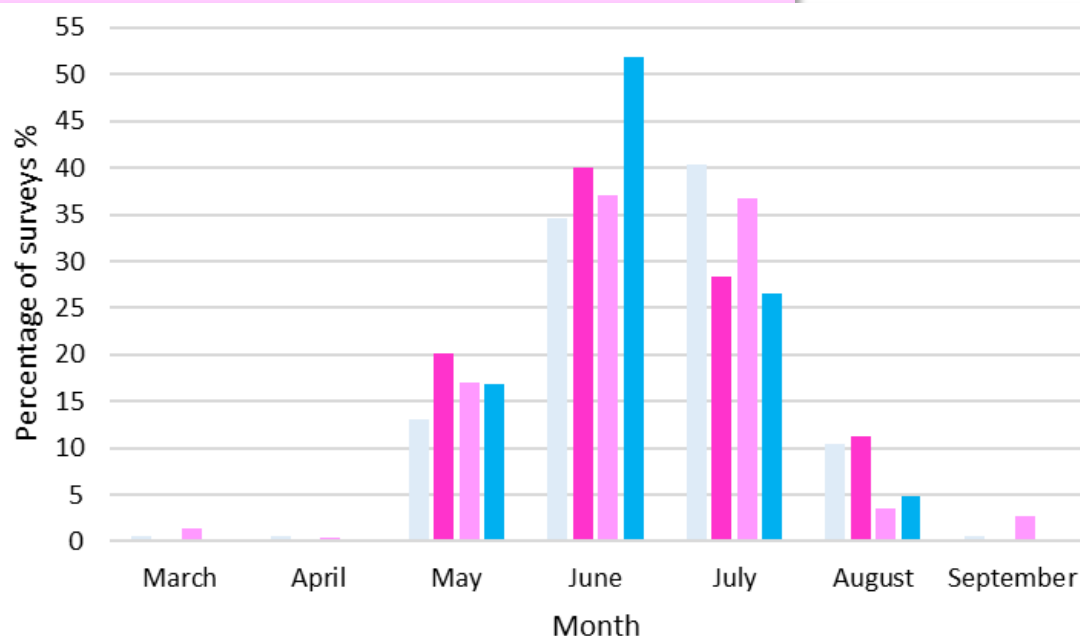
Percentage of surveys where White-legged Damselfly were present sorted by month

The flight period of the White-legged Damselfly in 2019 appears relatively similar to those of previous years (1998 being the anomaly).

This provides a guide for recorders on the best time of year to go looking for White-legged Damselfly.



168 monads (1km OS grid squares) contributed to the project in 2019



White-legged Damselfly Distribution Maps

Maps are split either by county or river system.

For each map brief observations are made regarding the spread of existing records. These records are used to identify counties/areas that are a 'priority'.

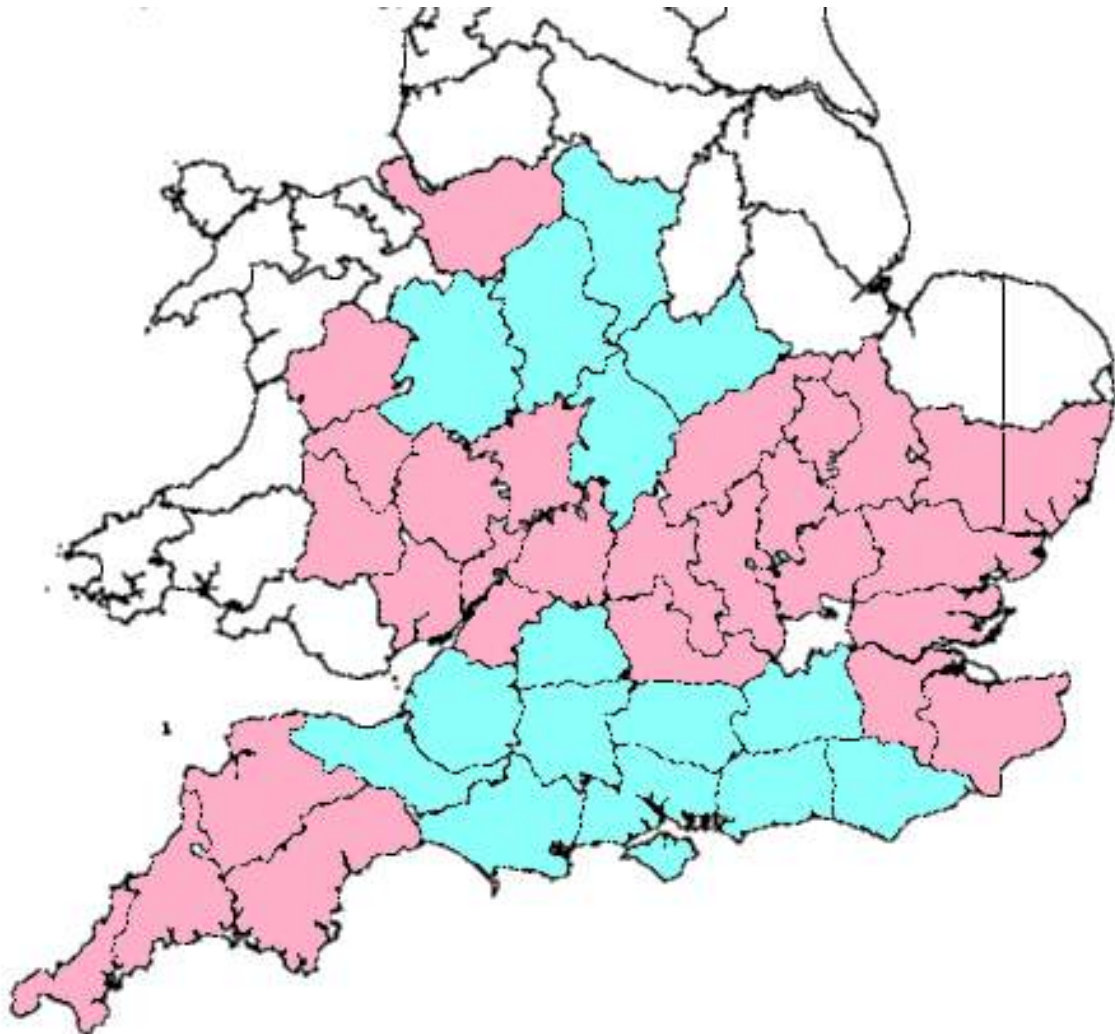
Priority

Counties/ areas are identified as a priority for recording activity if Country Dragonfly Recorders have raised concerns about the local population, recent data indicates potential population decline, or a lack of recent data makes it difficult to ascertain the distribution of White-legged Damselflies.

Further recording needed

Counties/areas that are not priority may have substantial recent records of White-legged Damselflies meaning there is little concern regarding their populations, or they may never have supported significant populations in the first place. However, further data collection is still encouraged.

During future survey seasons recorders are urged to target river sections that have old White-legged Damselfly records to see if the species is still present. They should also keep an eye out in other monads containing suitable habitat.



White-legged Damselfly Distribution Maps

Comparing the distribution with White-legged Damselfly sightings in the 2018 pilot year and 2019 with the location (monads; 1km OS grid squares) of historic records.

WHITE-LEGGED DAMSELFLY INVESTIGATION DATA (2018 PILOT YEAR AND 2019)

MONAD GAIN

White-legged Damselflies present in 2019. First sightings for monad.



CONTINUED PRESENCE 2019

White-legged Damselflies present in 2019. Monad has historic sightings.



CONTINUED PRESENCE 2018

White-legged Damselflies present in 2018. Monad has historic sightings



LOSS

White-legged Damselflies not present in either 2018 or 2019.

Only

Surveyed in one year not both. Monad has historic records.



White-legged Damselflies not present in both 2018 and 2019.

Monad has historic records.



ABSENT

White-legged Damselflies not present in either 2018 or 2019.

Surveyed in one year not both. Monad has no historic records.



White-legged Damselflies not present in both 2018 and 2019.

Monad has no historic records.



MONADS WITH PRE 2018 RECORDS

2010-2017



2000-2009



1960-1999



1940-1959



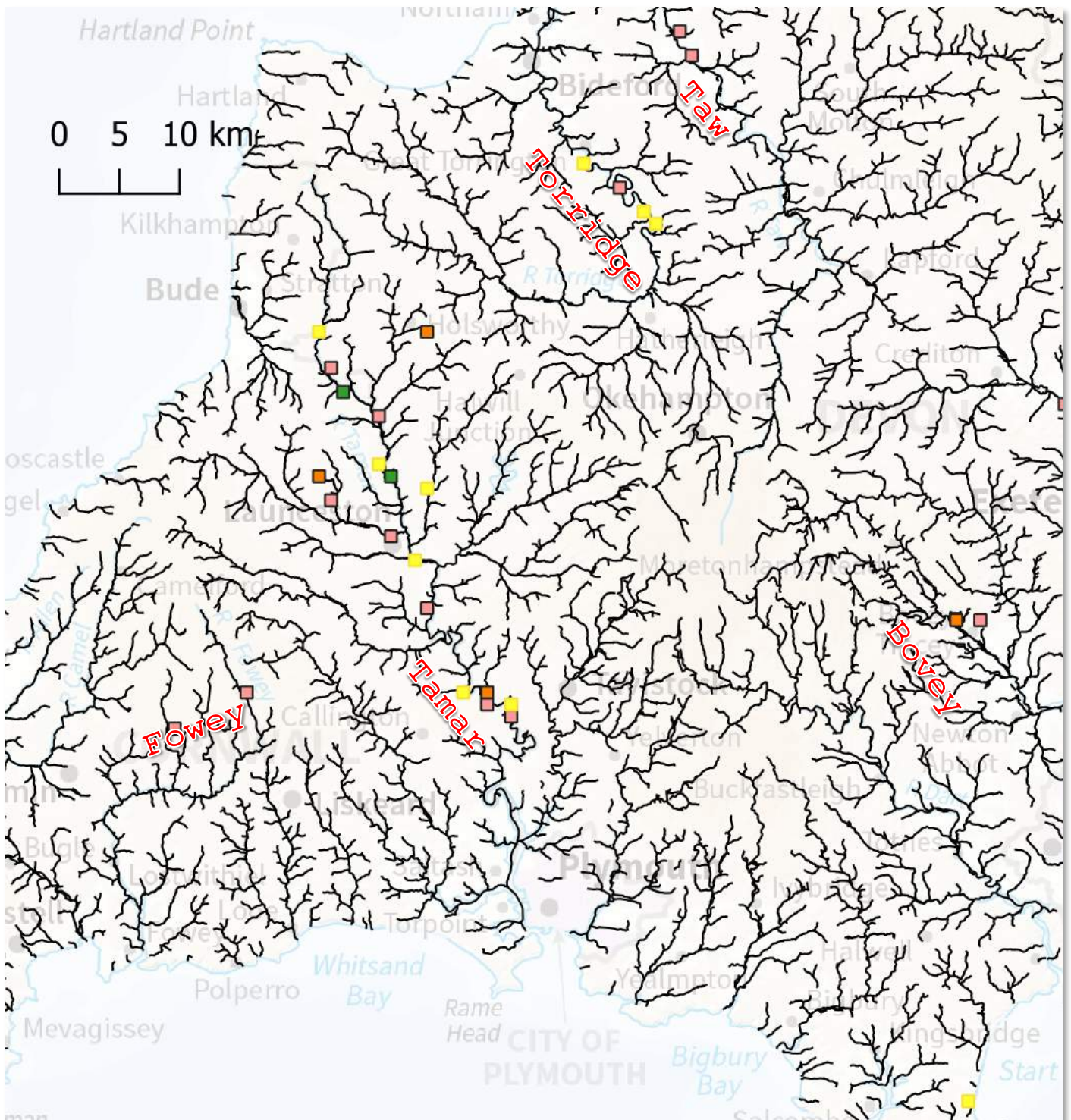
Cornwall and West Devon

River Tamar Historic records exist down the river to Gunnislake.

River Torridge White-legged Damselflies were observed in the 2000s on the stretch between Little Torrington (on the west bank) and Dolton (on the west bank).

Random sightings have also been reported on/ near the **River Taw** (in the 70s), **River Fowey** (in the 80s) and **River Bovey** (2015).

This county is a priority due to the lack of up to date records.



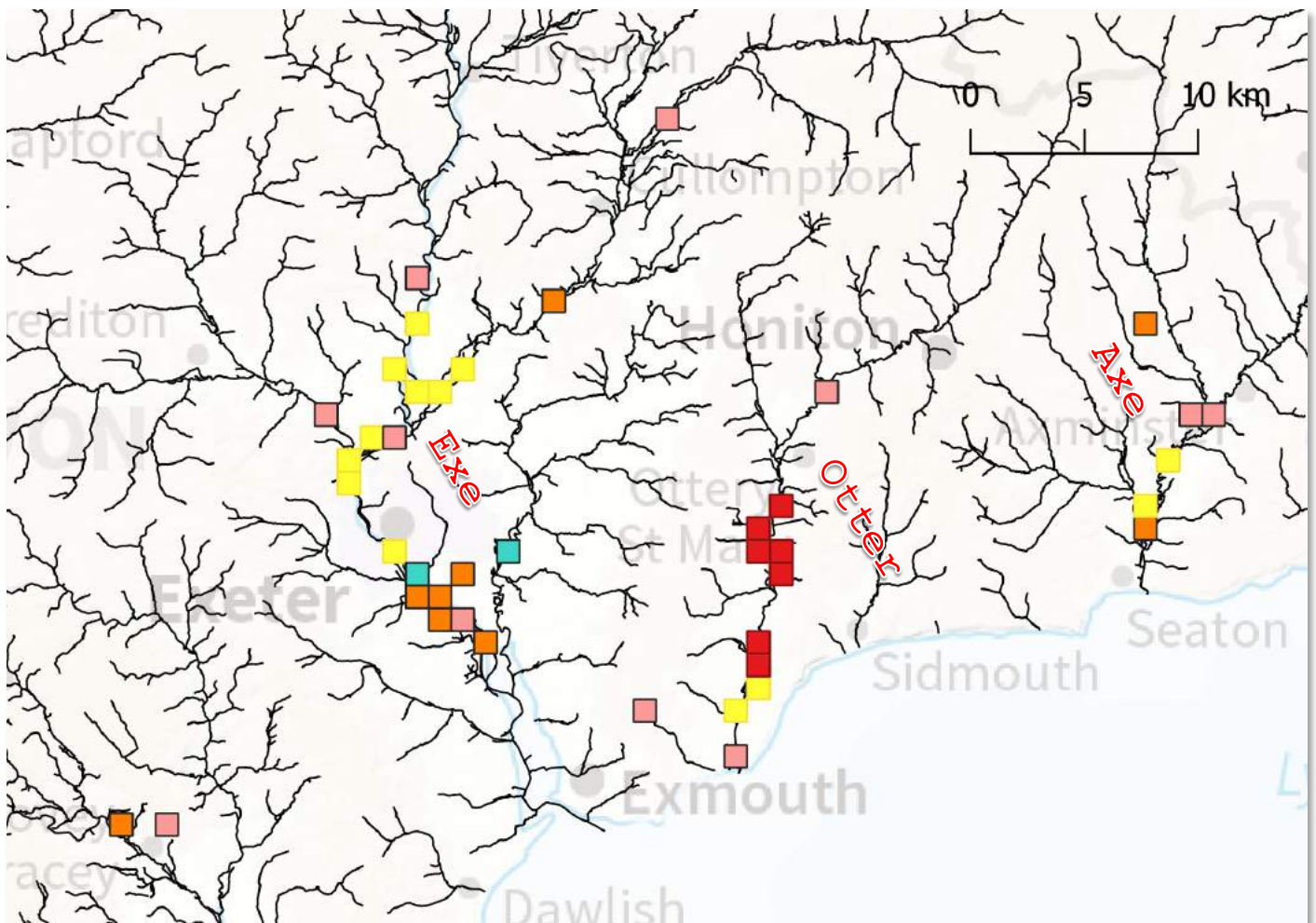
South Devon

River Exe There were multiple sightings of White-legged Damselfly from the River Exe over the past couple of decades and occasional sightings from its tributaries. A few were sighted in south Exeter, and egg laying was observed on the River Cyst at Cyst Saint Mary, in 2018.

River Otter Unfortunately none of the monads on the River Otter that were visited in 2018 produced White-legged Damselfly sightings suggesting the species is no longer present.

River Axe This river has a scattering of historic records of White-legged Damselfly over the past 40 years.

This county is a priority as the species is showing signs of decline on its waterways.

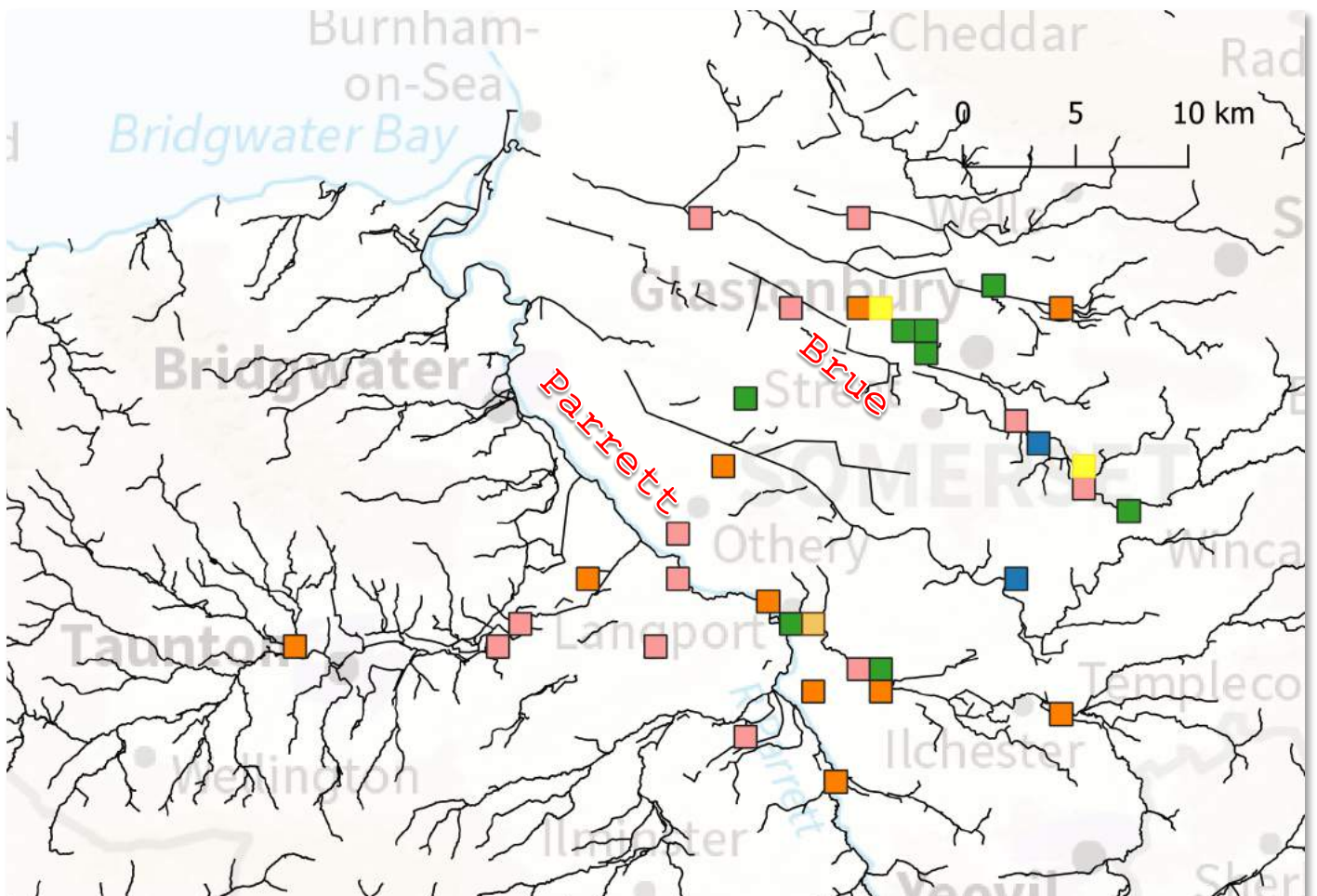


South Somerset

River Parrett White-legged Damselfly appears to be faring well along the River Parrett and its tributaries as there have been reports from multiple monads since 2010.

River Brue The species also seems to still be prevalent around the River Brue and its surrounding wetlands, particularly near Glastonbury.

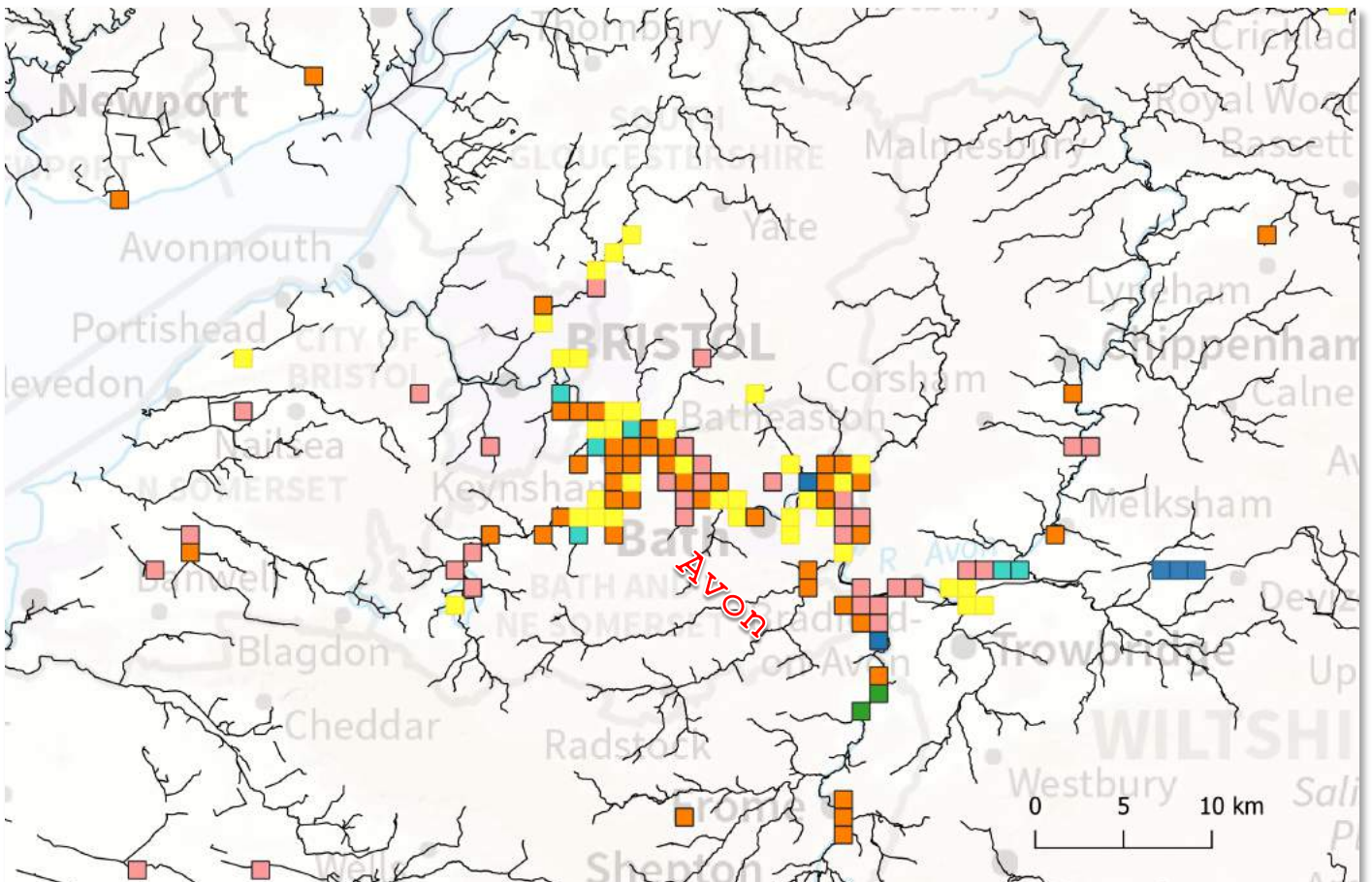
There are no imminent concerns for this species in this section of the county. However, it would be useful to improve our understanding of its distribution; as it is likely to be more common than current data suggests.



North Somerset, South Gloucestershire and Wiltshire

River Avon Since 2010 there have been widespread reports of White-legged Damselfly within the River Avon catchment, including scattered reports during the Investigation.

There is little concern for the species in this section of the country.



Dorset, Hampshire and Isle of Wight

River Stour The River Stour has been surveyed well since 2010 and White-legged Damselfly has been reported all the way up to the West Brook tributary.

River Avon The River Avon has only produced a few records on its tributaries.

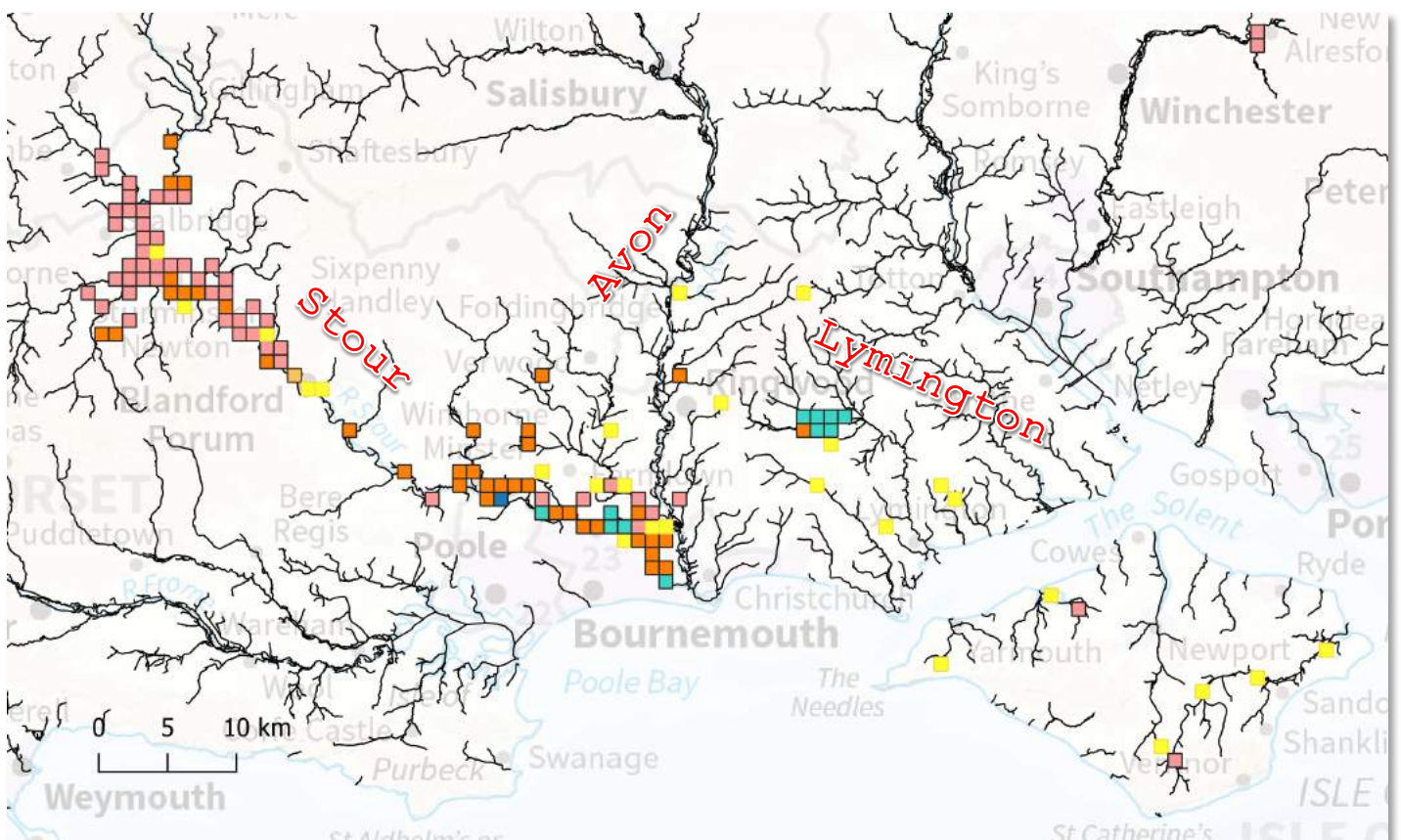
Lymington River A healthy population appears to exist on the tributaries of the Lymington River in the New Forest, as good numbers were reported in 2018.

Isle of Wight The most recent White-legged Damselfly records from the Isle of Wight date from the 2000s and are sparse.

Dorset is not a primary concern as the Stour population seems stable; however, surveys outside this core distribution would be beneficial.

Hampshire, while not a priority county, would benefit from further survey work as historic records are sparse apart from a localised population in the New Forest.

White-legged Damselfly have never been highly abundant on the Isle of Wight and the island is not a priority; however recorders should keep an eye out in suitable habitat.



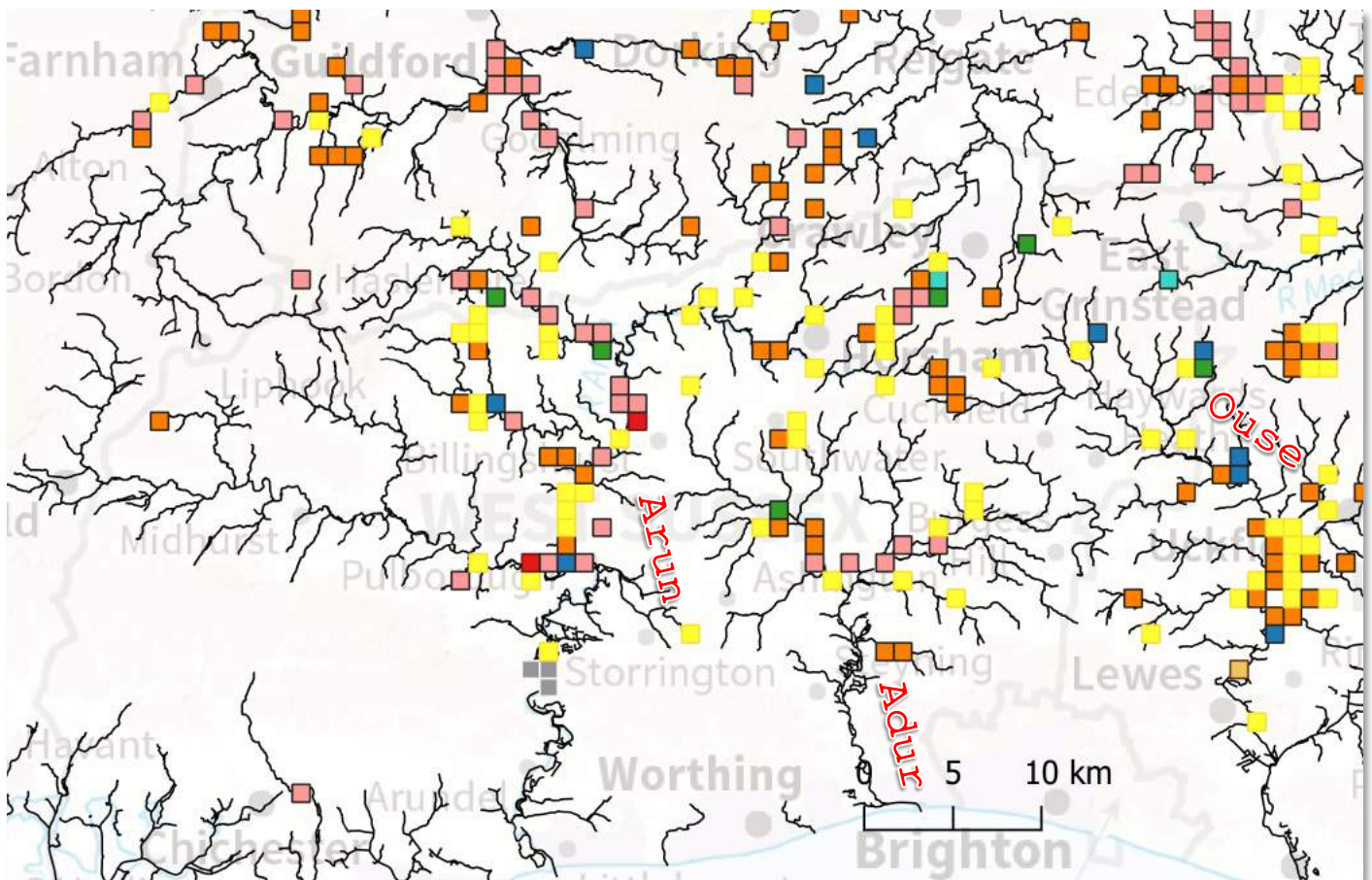
West Sussex

River Arun There has been a steady stream of reports from the River Arun and its tributaries over the years, from Pulborough to Horsham. Monads surveyed in 2018 and 2019 mostly produced positive results: either a continued presence of White-legged Damselflies or the first reports of the species for that monad.

River Adur The tributaries of the River Adur have multiple records since 2010 and White-legged Damselflies were reported in a novel monad in 2019.

Upper River Ouse Multiple monads produced positive results within the tributaries of the upper reaches of the Ouse in 2018 and 2019.

From looking at the existing data the species seems to generally be doing well on the river systems of West Sussex .



East Sussex

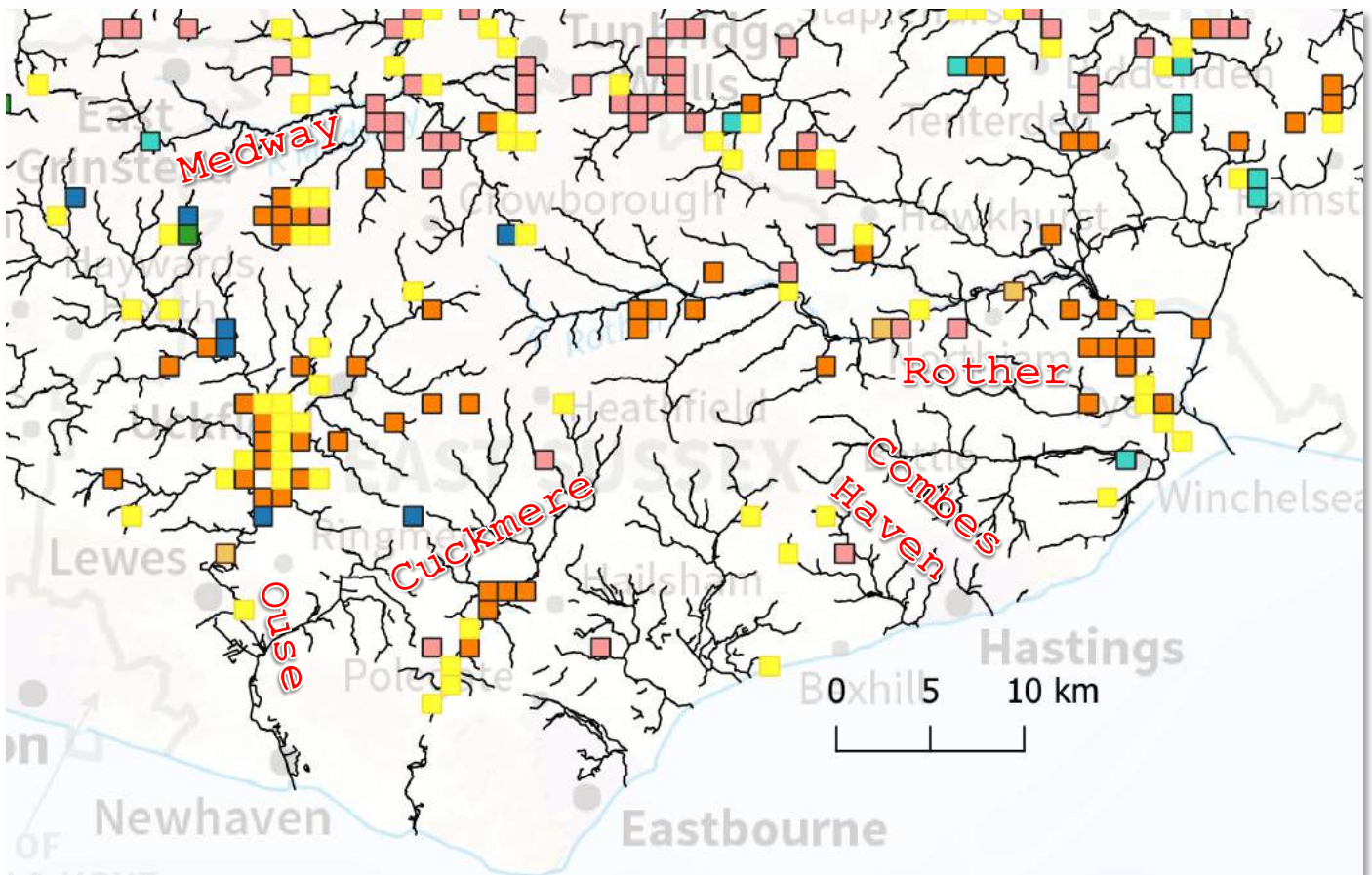
River Ouse The White-legged Damselfly has been relatively well reported on the River Ouse since 2000. Monad surveys in 2019 all reported the presence of the species.

Cuckmere River In the 2010s there were a number of sightings between Arlington and Lullington.

River Rother Sightings since 2010 are clustered on small tributaries near Holmhurst and downstream on small tributaries near Peamarsh.

Upper River Medway The records for the East Sussex section of the River Medway are mostly dated prior to 10 years ago and the catchment needs to be revisited. There have also been occasional sightings in the **Combes Haven** area.

The river systems of East Sussex have less comprehensive records since 2010 than West Sussex. While there is no current concern for the species in this county further survey work would be useful to update our distribution maps.

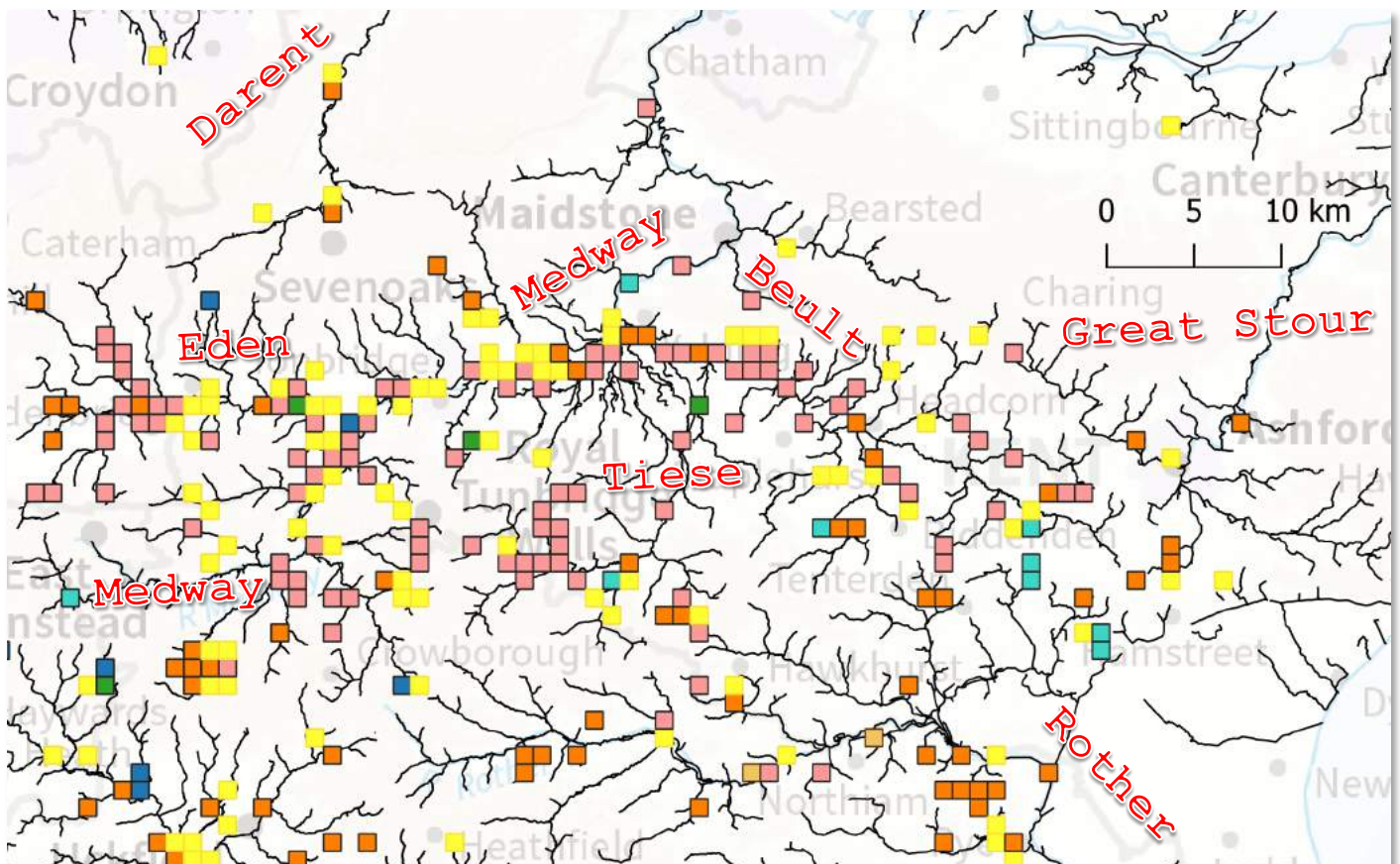


Kent

River Medway, Beult, Eden and Teise White-legged Damselfly has been reported along considerably stretches of these rivers and their tributaries. However, most records are dated prior to 2010 and White-legged Damselfly distribution may have changed significantly since then. The monad visits conducted in 2019 all produced positive results.

Grear Stour, Darent and Rother There are not as many records for these rivers and their tributaries, and they have only had a few monads with positive sightings since 2010 (mostly on the Rother).

This county is a priority due to the lack of recent data.



Surrey

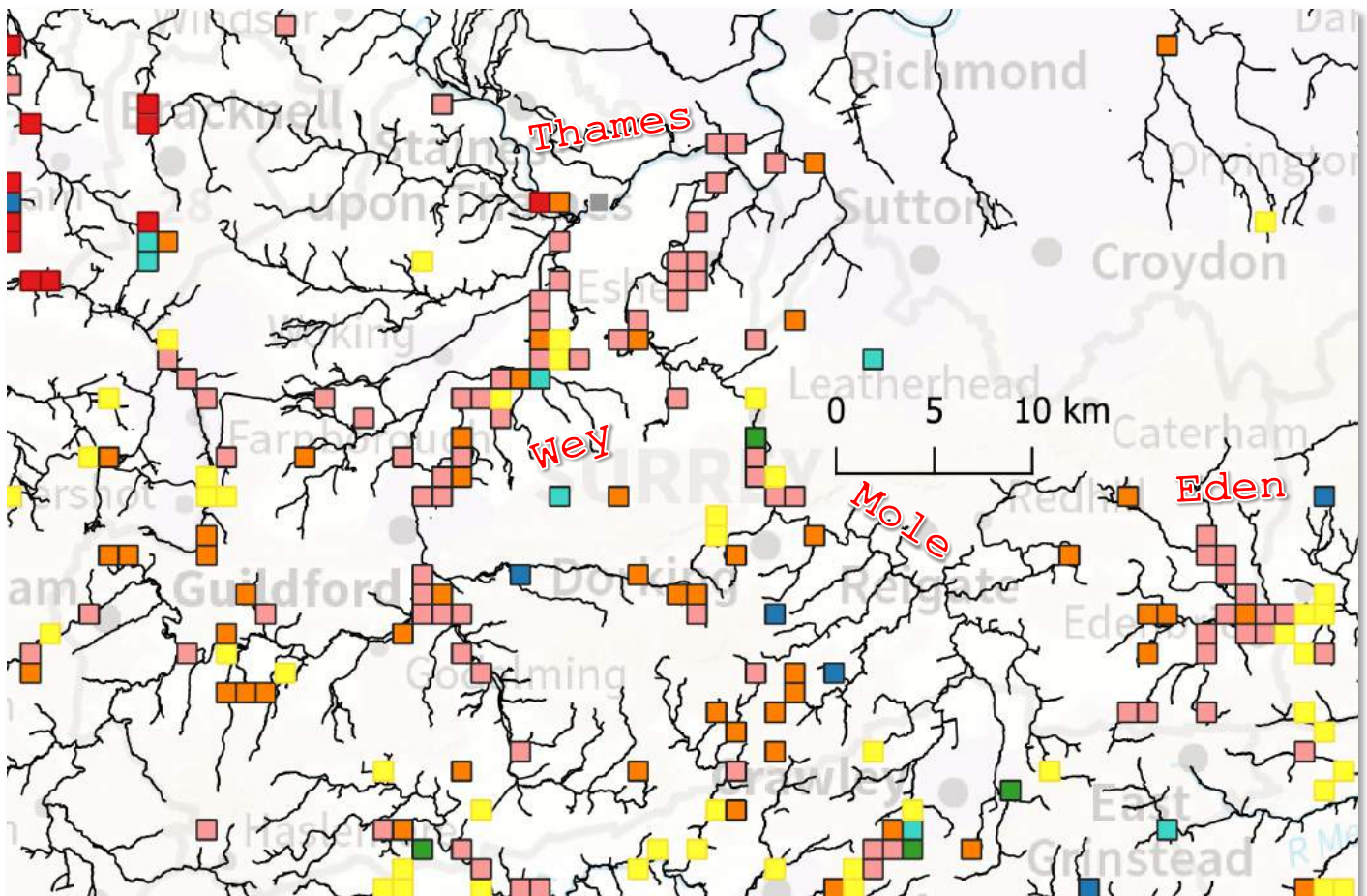
River Eden There have been multiple reports from the Surrey section of the Eden since 2010.

River Wey There have been sparse records from this catchment since 2010; monad visits during the Investigation (2018-2019) mostly reported the presence of the White-legged Damselfly.

River Mole The Mole has sparse White-legged Damselfly records; sightings from 2018-2019 mostly came from the higher tributaries.

River Thames The two monads visited during the Investigation did not produce sightings.

Overall, White-legged Damselfly sightings since 2010 have been scattered but widespread in this county. While the White-legged Damselfly is not at imminent risk of disappearing from this county any time soon survey work is needed to revisit historic sites to see if there has been any change in distribution.

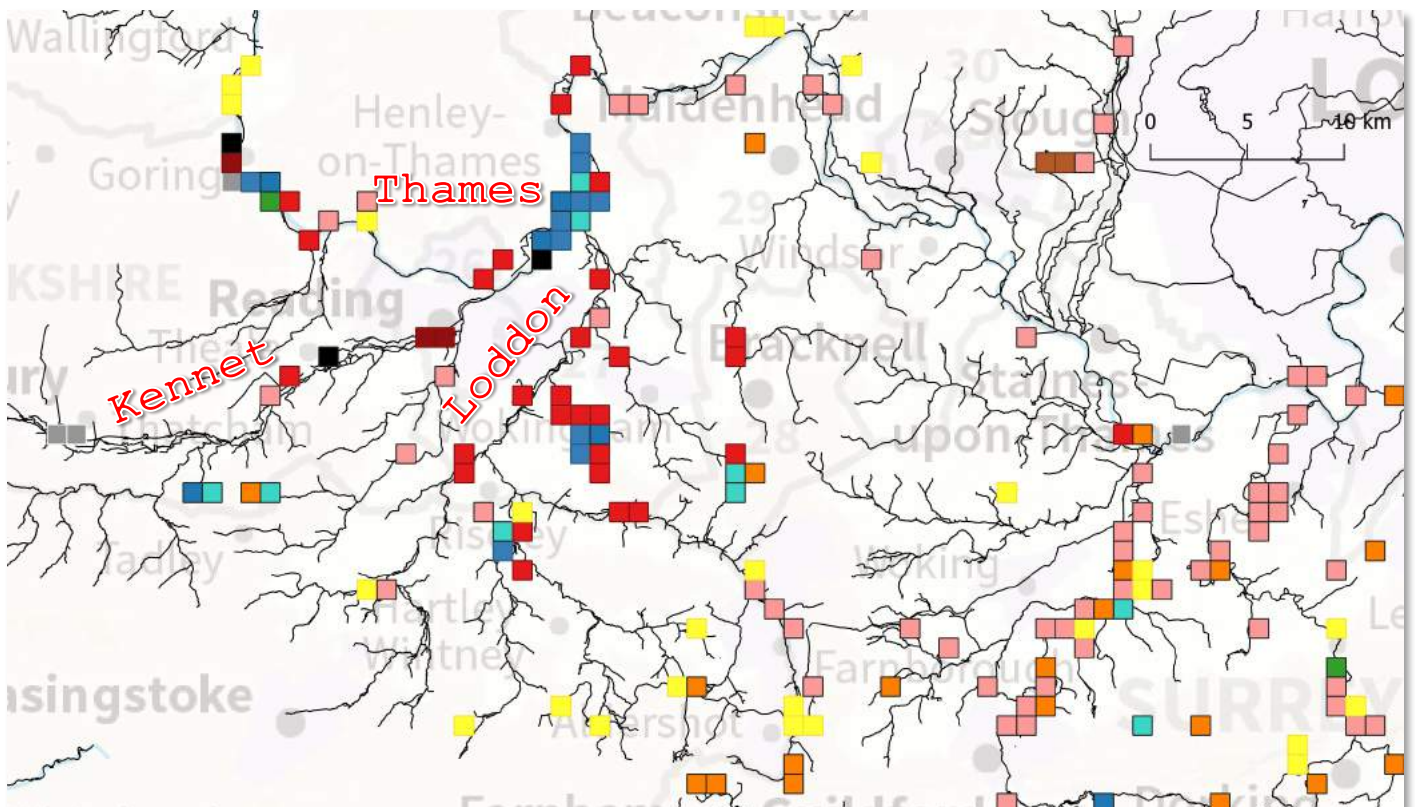


Berkshire

River Thames (Goring to Staines-upon-Thames) Results from the Investigation (2018-2019) so far have been mixed; White-legged Damselflies were found to be prevalent just south of Goring and around Shiplake.

River Loddon and Kennet Results from both these river systems are troubling as multiple monads with historical records reported an absence of White-legged Damselflies during 2018-2019.

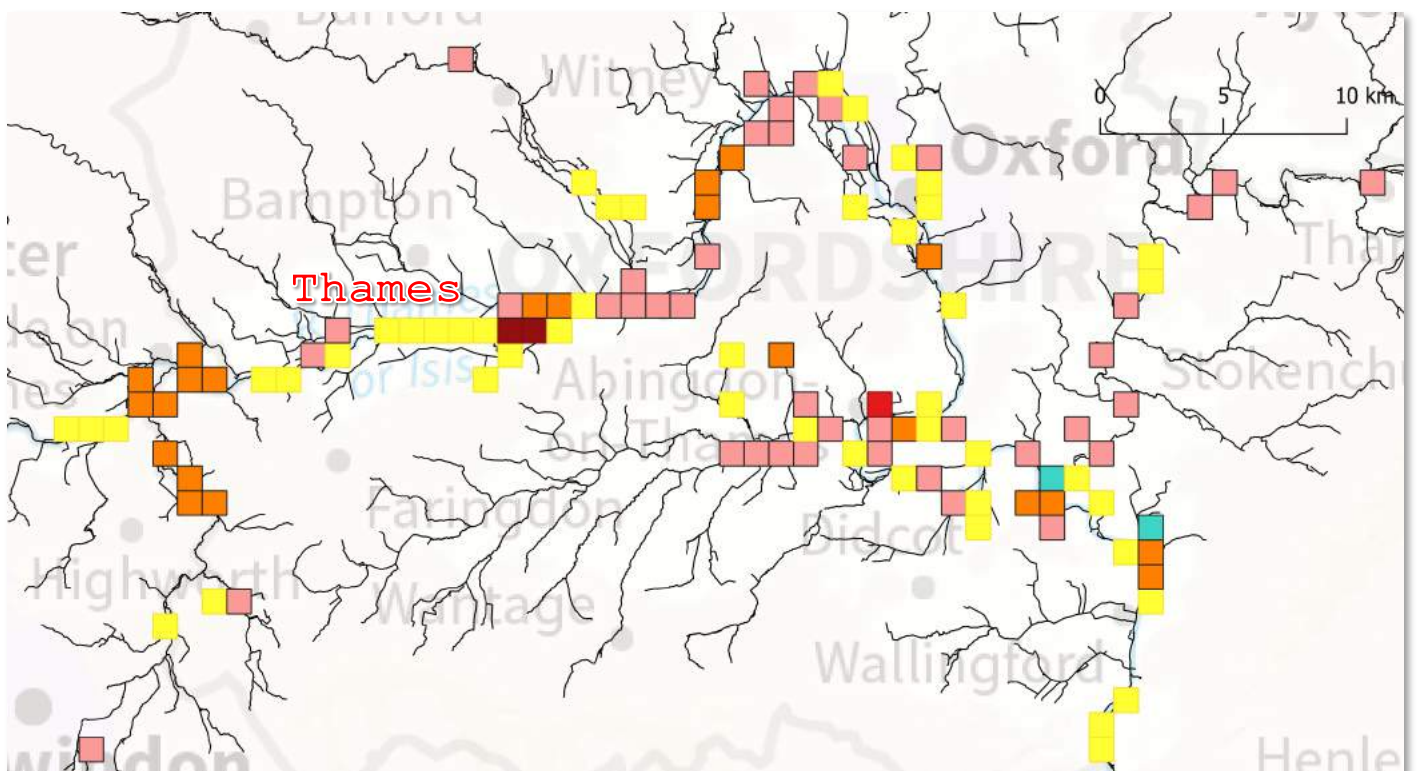
Current data would suggest the distribution of White-legged Damselflies in this county is unstable making this county a priority.



South Oxfordshire

River Thames Since 2010 there have been a scattering of sightings on the Thames and its tributaries in Oxfordshire. Results from the Investigation (2018-2019) are mixed so far with losses near Chimney and sightings downstream of Dorchester.

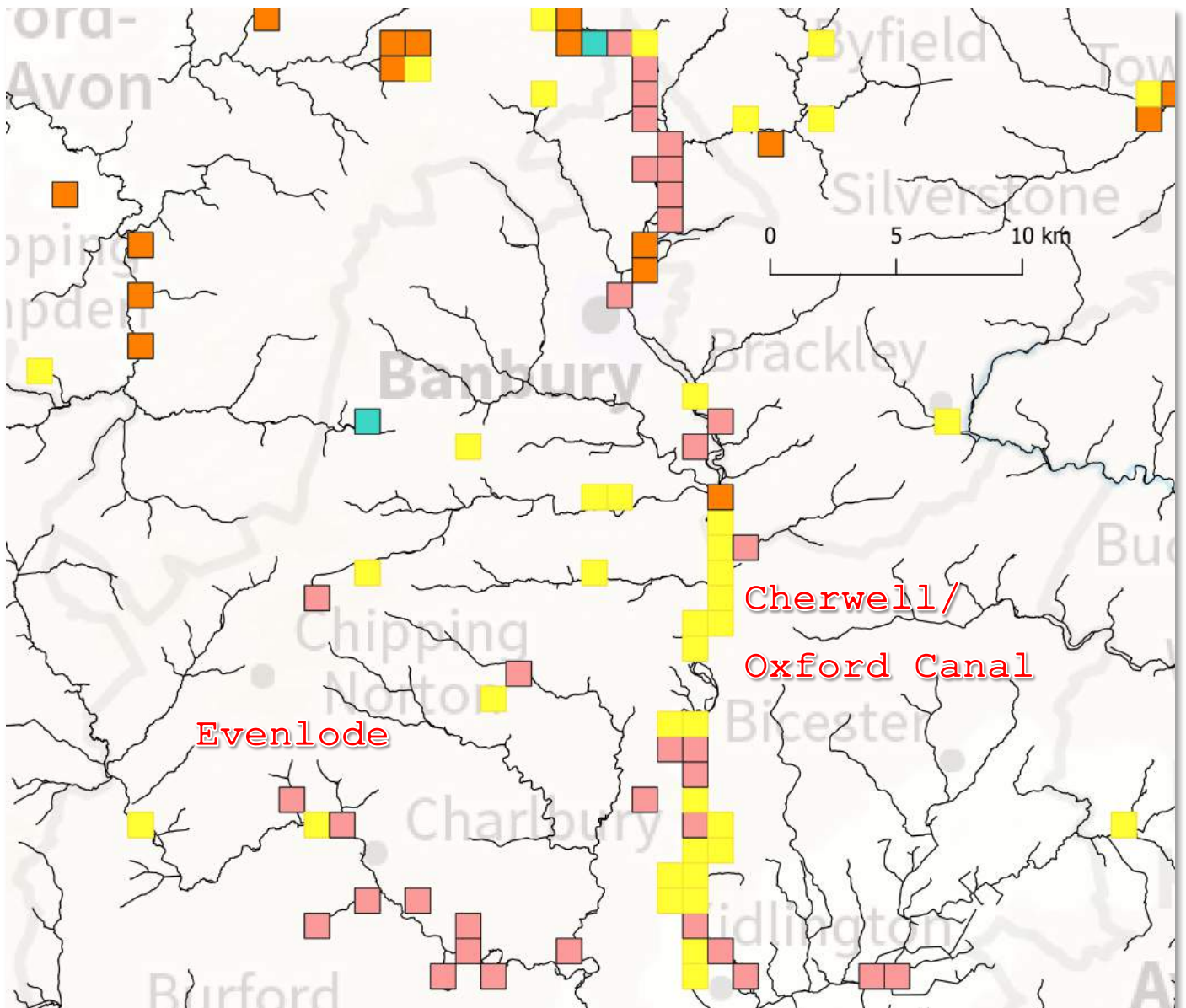
The river systems of South Oxfordshire are a priority for surveying due to the lack of recent records.



North Oxfordshire

River Cherwell, Oxford Canal and Evenlode Most of the records from these river systems are from before 2010.

As with South Oxfordshire the river systems of North Oxfordshire are a priority for surveying due to the lack of recent records.



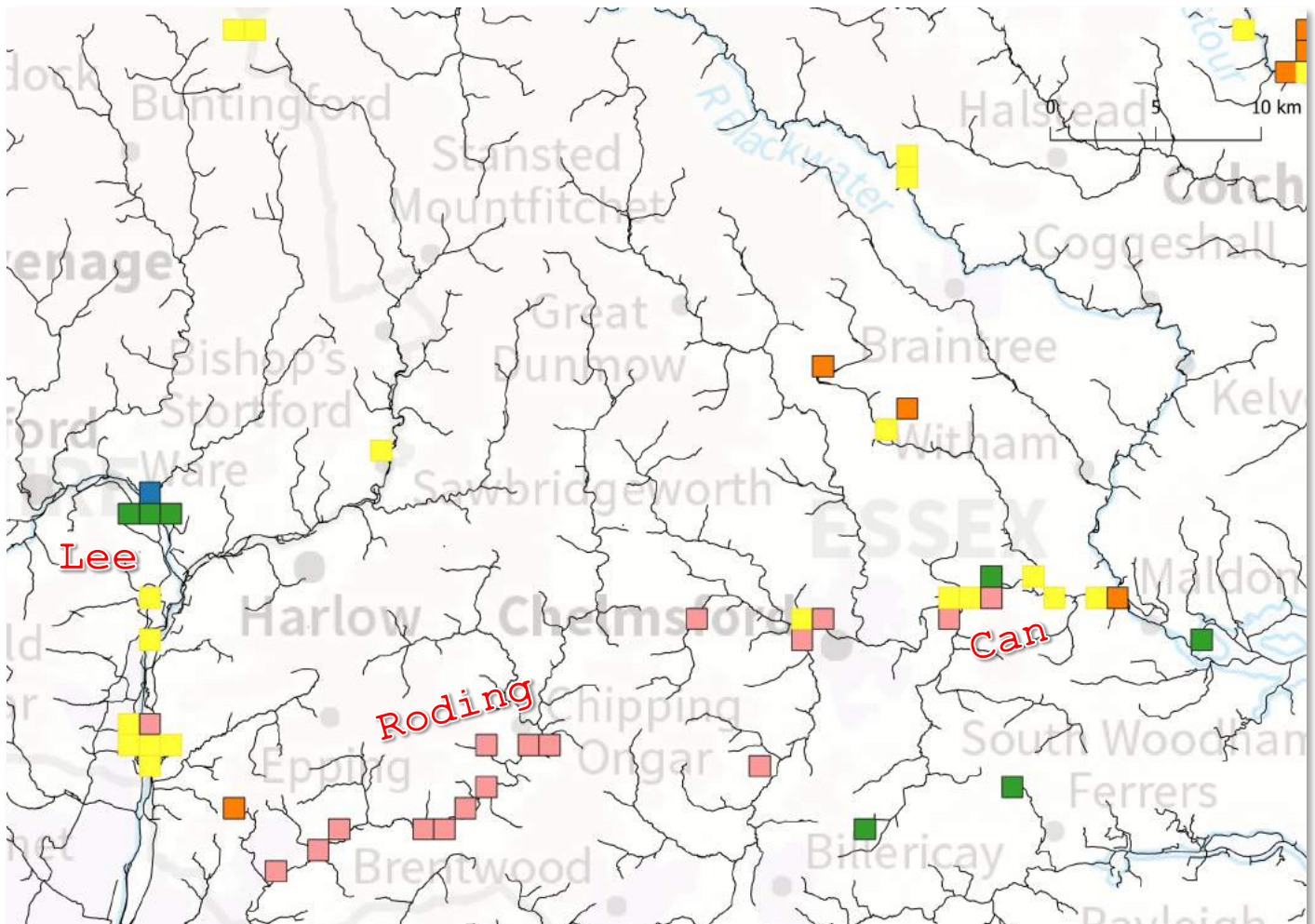
Essex and Hertfordshire

River Lee White-legged Damselfly were found within multiple monads just south of Ware during the Investigation.

River Roding Most of the records for this river date from the 80s and 90s.

River Can One monad has been visited so far on this river during the Investigation which provided sightings. Surveys need to be extended to historic monads further upstream.

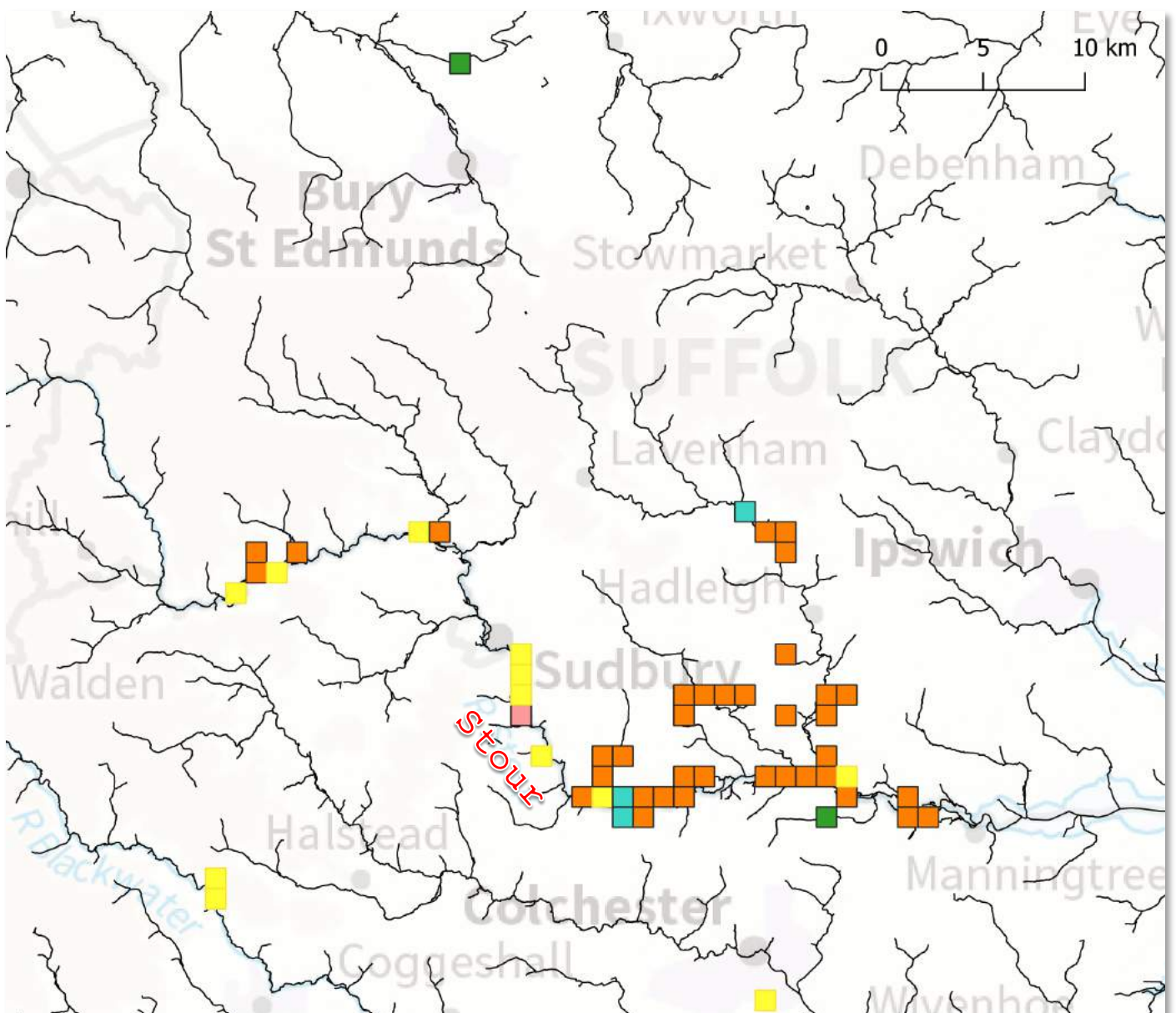
These counties are a priority due to the last of recent records; this could be a result of species decline or under recording.



Suffolk

River Stour This remains the main hotspot for White-legged Damselflies in Suffolk.

Although there have been relatively numerous sightings of White-legged Damselfly reported from the Stour since 2010 there have been reports that the species has declined in recent years. As a result this county is a priority.



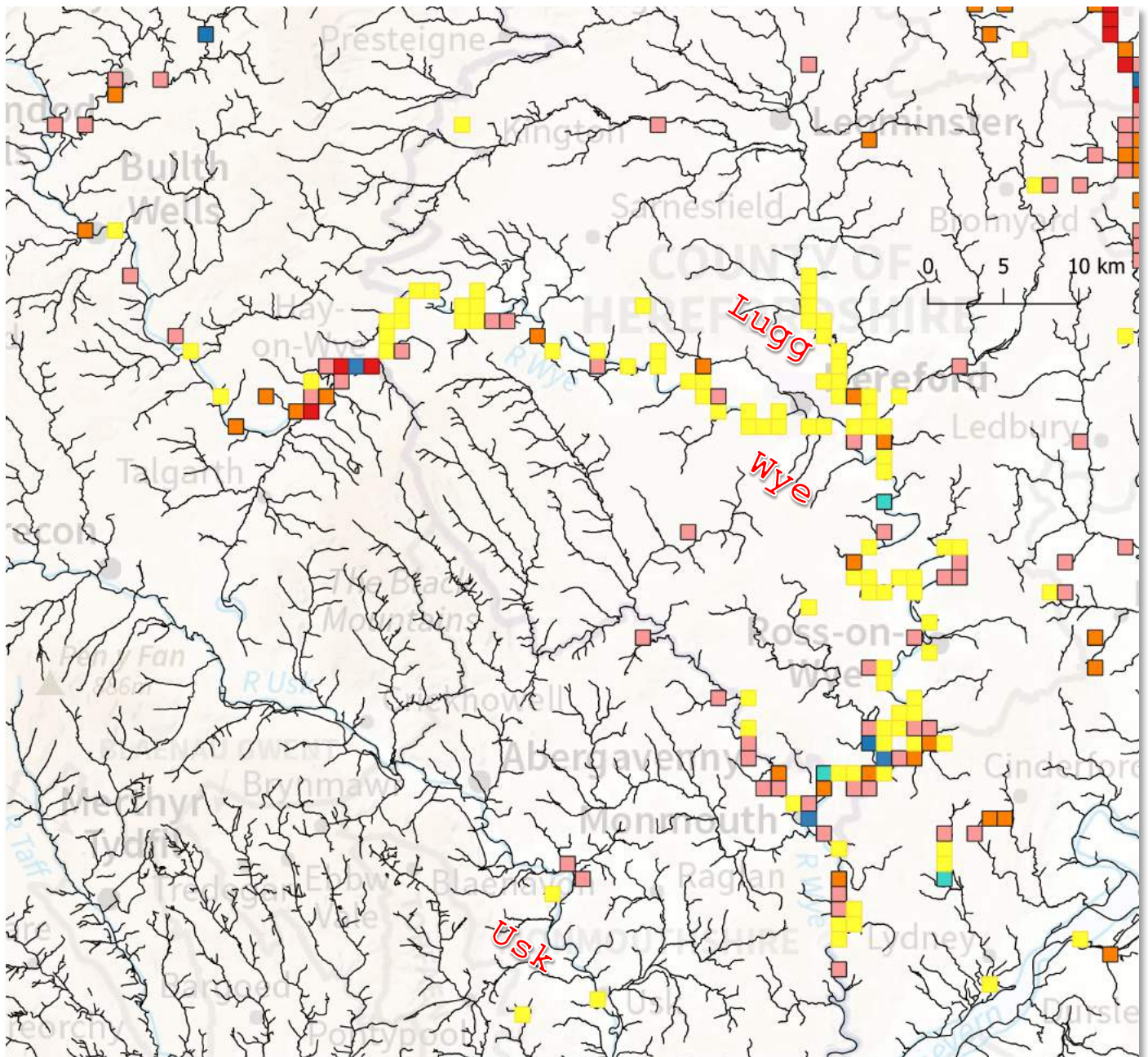
Herefordshire, Breconshire, Radnorshire Monmouthshire (Powys)

River Usk A few reports have come from this river and its tributaries but all sightings are from before 2010.

River Wye White-legged Damselflies are still present around Monmouth and up to Lower Lydbrook; there is also a scattering of recent records (post 2010) all the way up to Llandrindod Wells.

River Lugg There are dense records of White-legged Damselflies along the lower Lugg from the 2000s.

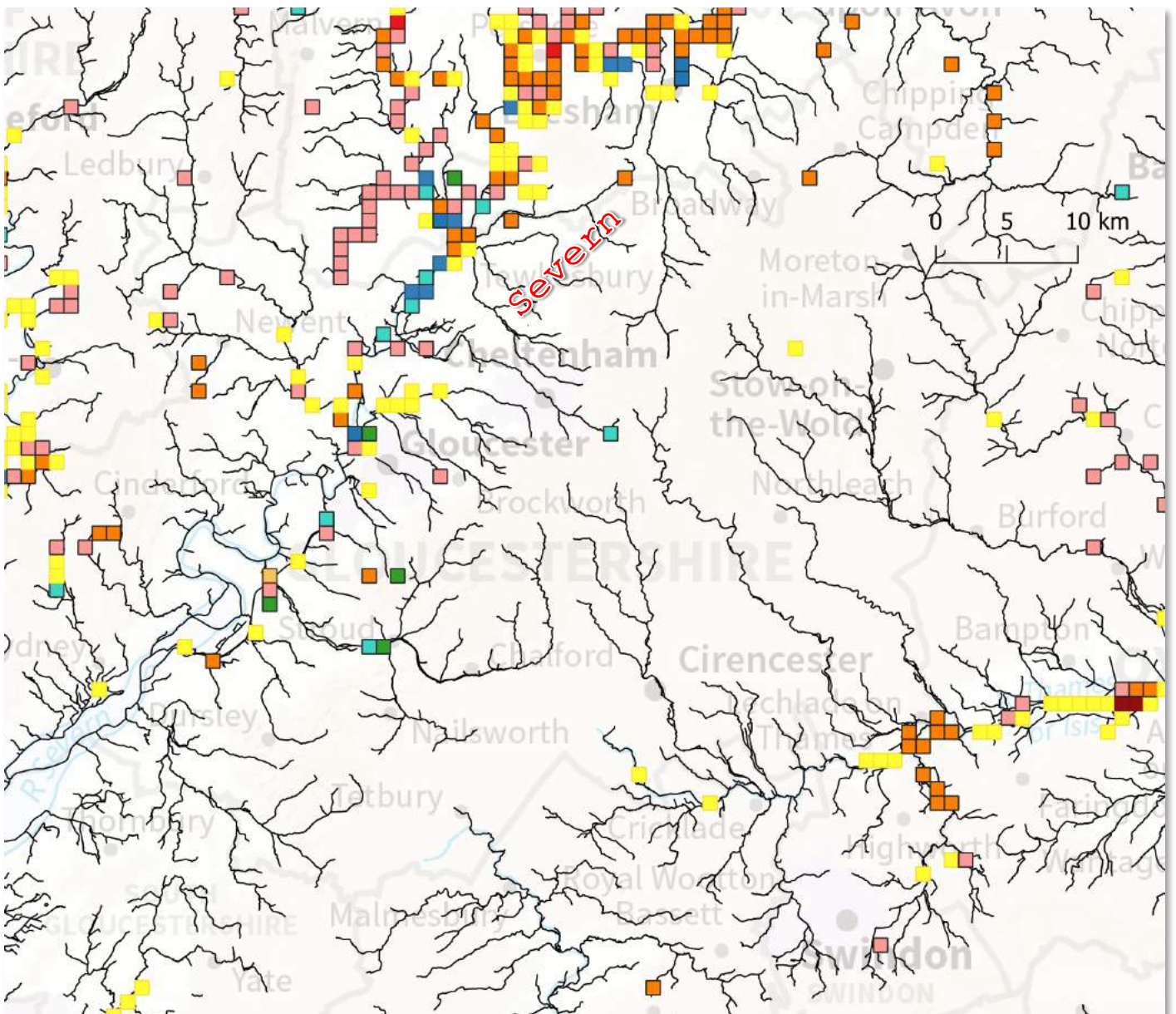
These counties have predominantly pre 2000 records making them a priority for survey work.



Gloucestershire

River Severn A large proportion of this county's records are related the Severn at its tributaries. Recent records have been few and scattered though thankfully all monad visits produced sightings during the 2018-2019.

Gloucestershire is a priority as existing records are noticeably sparse. Significant survey work is required to determine whether this is because the species is predominantly absent from the county's wetlands or because the species has been historically under recorded.



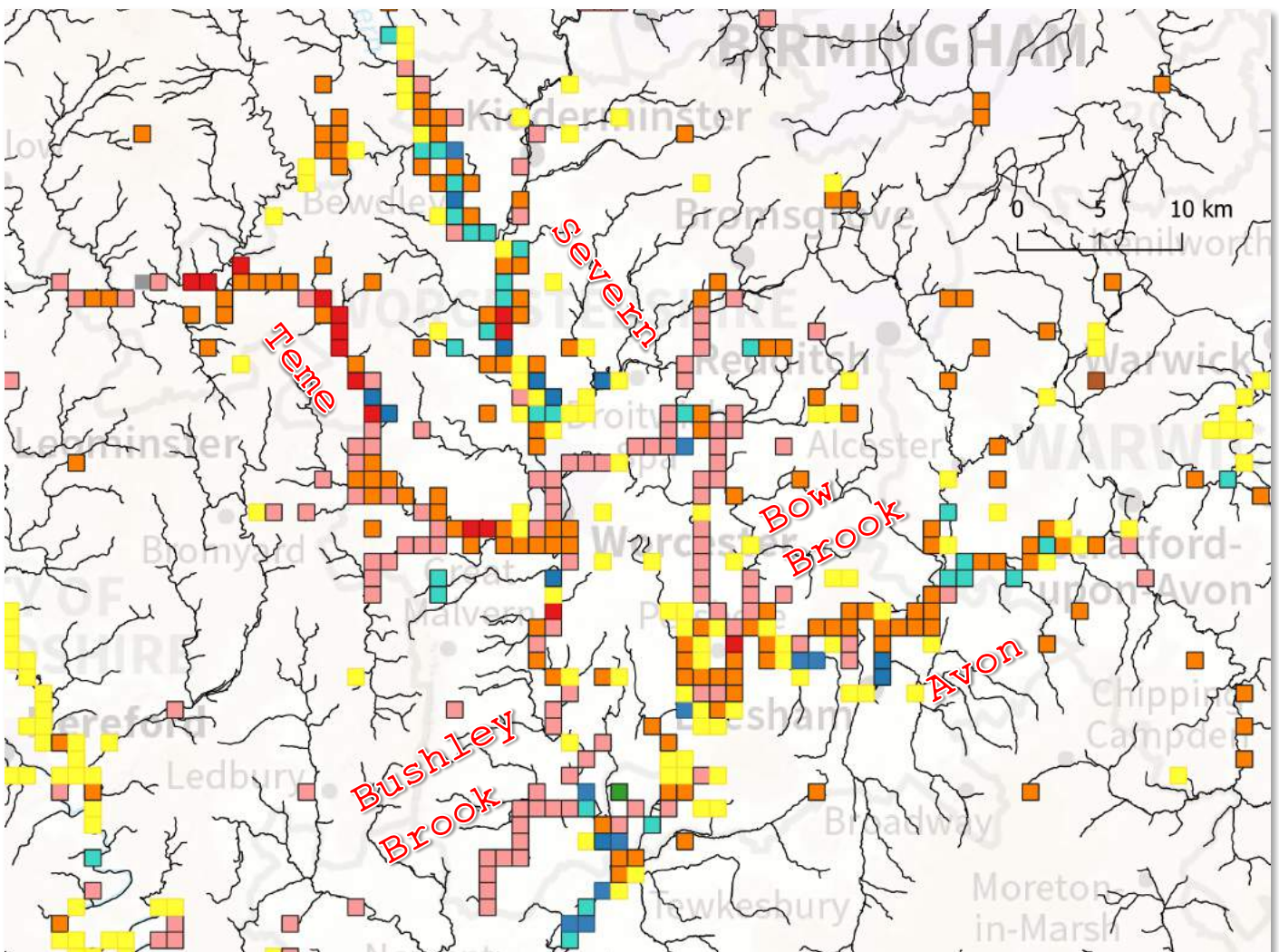
Worcestershire

River Severn Sightings have come from all along the Severn in Worcestershire over the past two years of the Investigation suggesting the species is still widespread. There have been a scattering of report from its tributary rivers since 2010 also.

River Avon 10 monads visited during the Investigation produced sightings and the river has had a significant number of White-legged Damselfly sightings reported since 2010.

River Teme Many monads produce sightings between 2010-2017; however, most of the monads surveyed during the Investigation reported White-legged Damselfly as absent.

The results from the first two years of the Investigation are worrying due to the apparent absence of White-legged Damselfly on the Teme. As a result this county is a priority.



Shropshire and Montgomeryshire

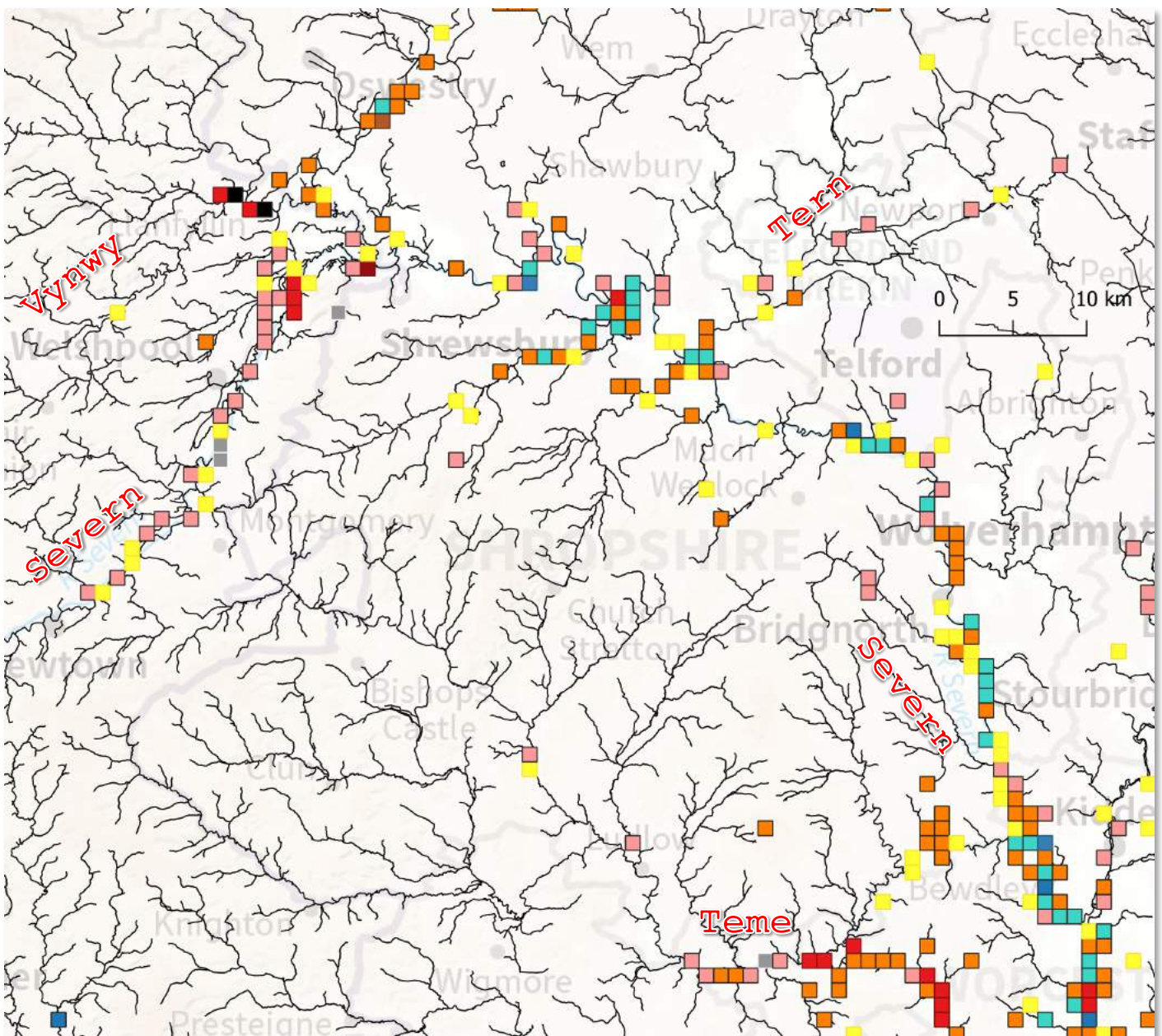
River Tern Most of this rivers most recent records come from its lower reaches; its higher tributaries have sparse historic records from before 2010.

River Severn As with the Severn in Worcestershire, there have been records from all along the Severn in Shropshire during the Investigation. However, from the Shropshire border there has, so far, only been negative results during monad visits in 2018-2019.

River Vynwy No White-legged Damselflies have so far been found on this river during the Investigation although it has multiple monads with historic records.

There is little concern for the White-legged Damselfly in Shropshire as they have been widely reported on the Severn from 2018-2019. However, we currently lack up to date information on the populations of the River Tern and the Telford area.

Montgomeryshire is more of a priority as it has limited recent records.

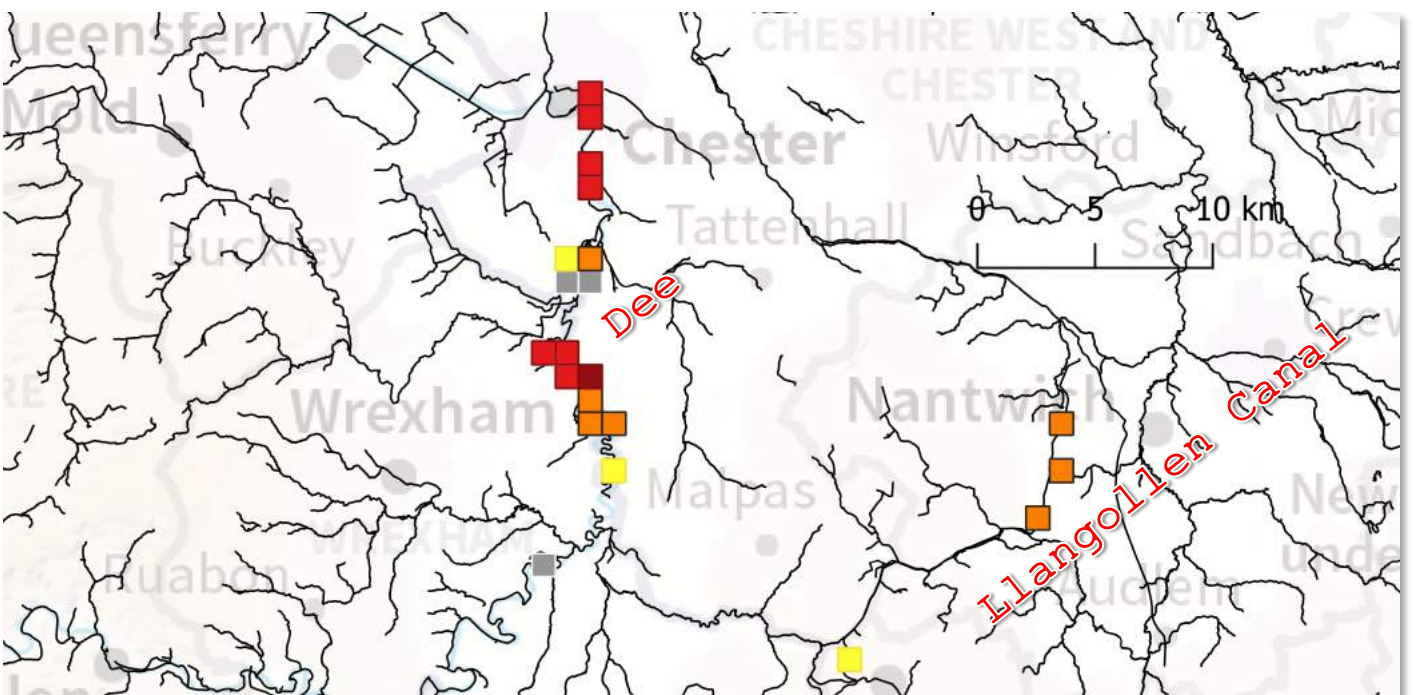


Cheshire

River Dee No White-legged Damselfly were found during 2018-2019 surveys.

Llangollen Canal Three monads have produced sightings since 2010.

This county is a priority as the early results of the Investigation would indicate potential population loss on the Dee.

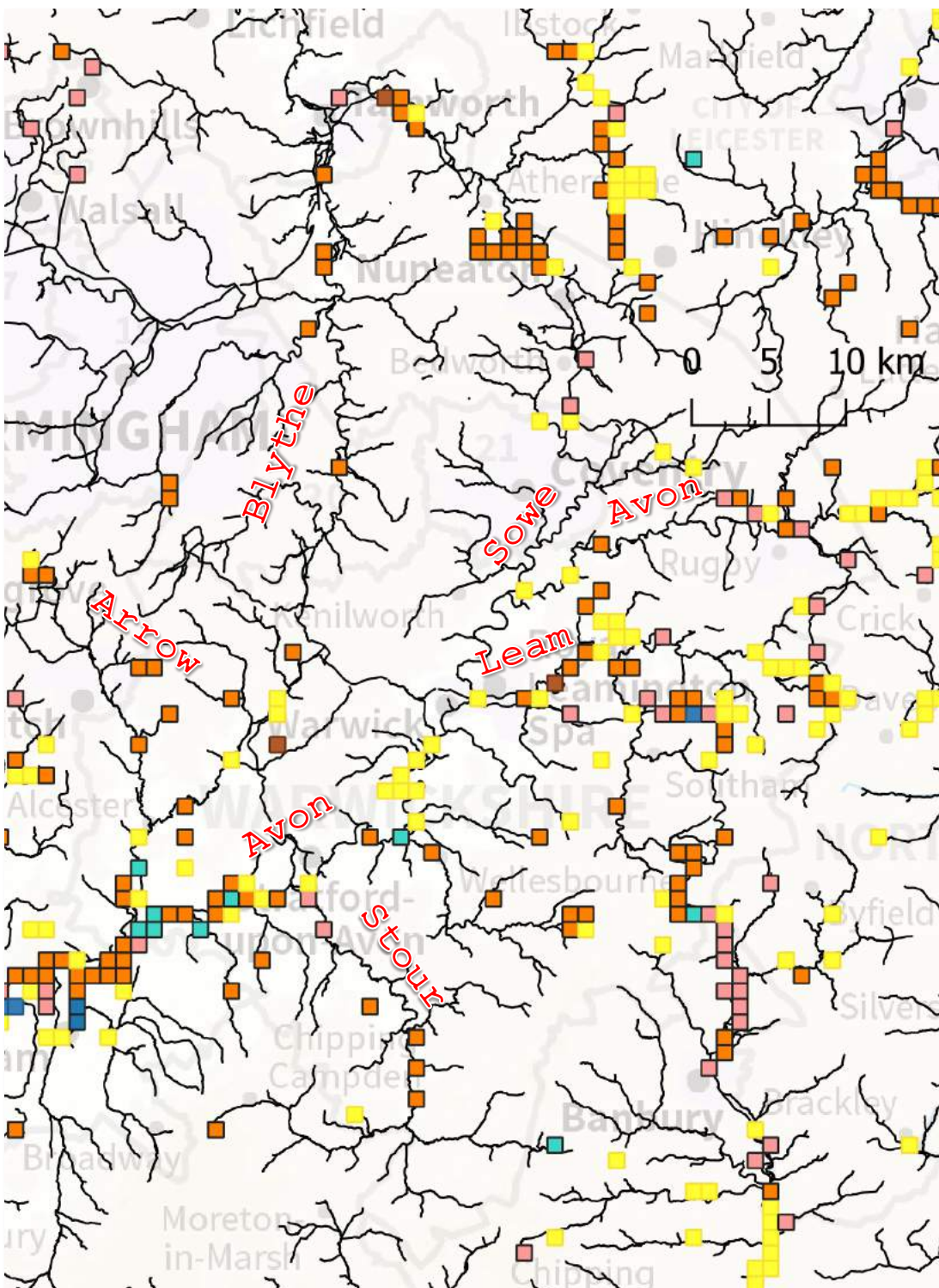


Warwickshire

River Avon From the west border to Stratford-upon-Avon White-legged Damselfly were sighted on a number of monads in 2018. However, there is a lack of recent records further upstream and on its tributaries. Tributaries, such as the **Sowe**, all have had sparse White-legged Damselfly sightings since 2010.

River Arrow A scattering of White-legged Damselfly sightings have been reported along the Arrow, and its tributaries, such as the **River Blythe**, since 2010, all the way up to the northern border..

Generally, White-legged Damselfly in Warwickshire seem to be widespread but further survey work is needed to update our distribution map for the county.

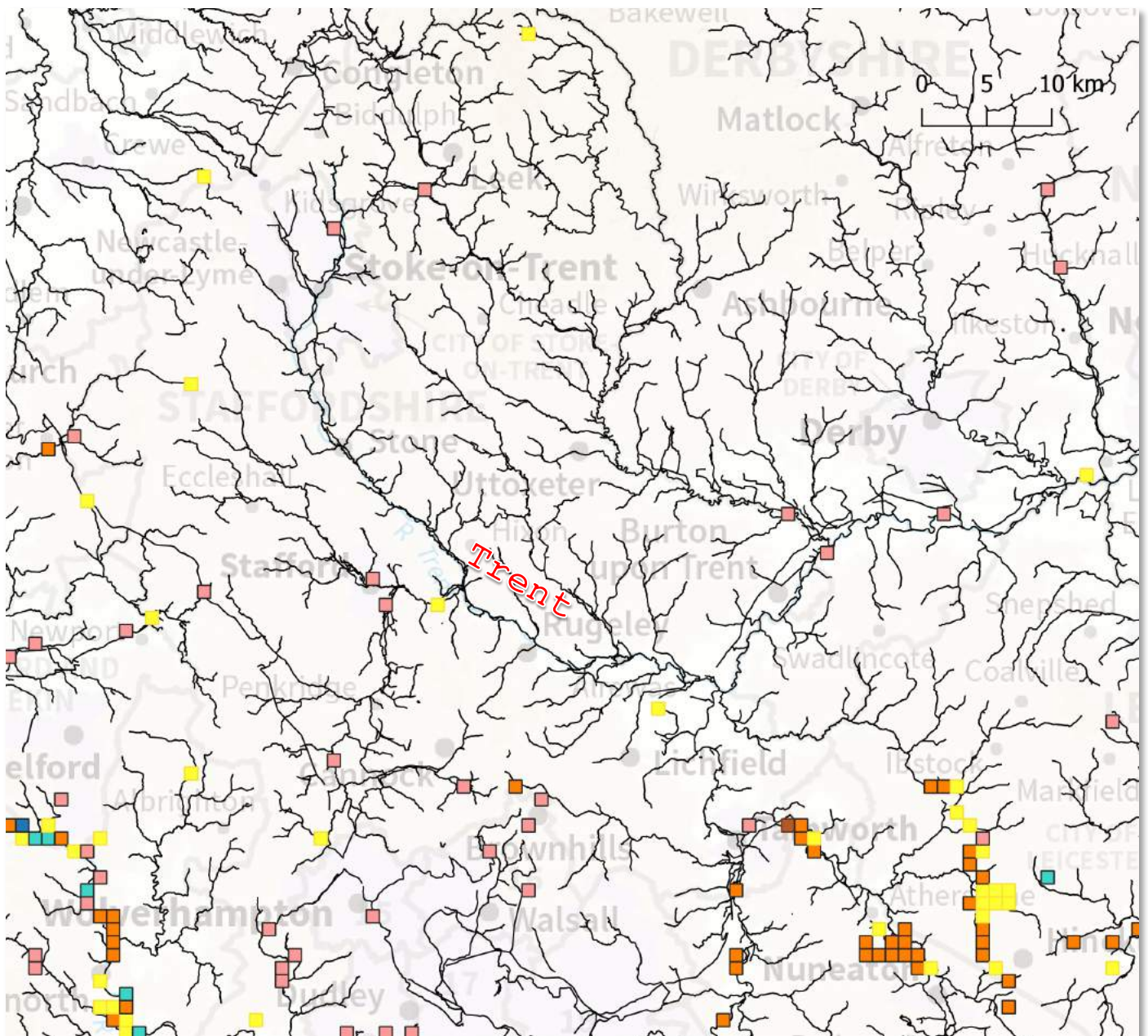


Derbyshire and Staffordshire

Derbyshire There are a few old records from rivers such as the **Trent** but no recent evidence of substantial populations

Staffordshire Similarly there are sparse dated records from throughout the county but no recent evidence of large breeding populations.

As neither county is within the core range of the White-legged Damselfly they are not a priority for recording effort. However, records should keep an eye out for the species as, like many other insect species, increase its range north as a result of climate change.



Leicestershire

River Welland White-legged Damselfly have been well recorded on the Welland since 2010; particularly from Stamford to Grettton (located on the east bank).

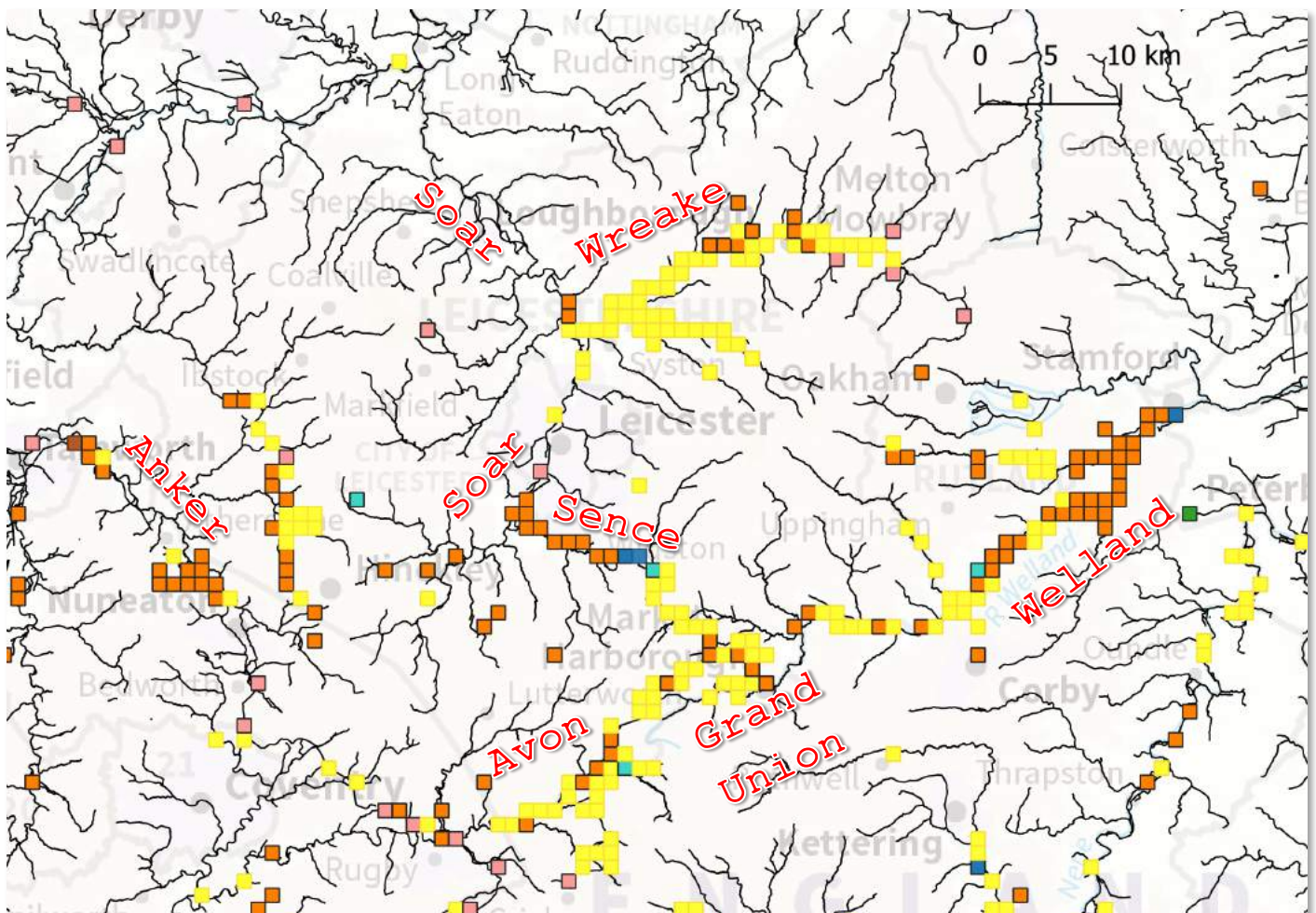
River Wreake, Grand Union Canal This river and its tributaries produced numerous records of White-legged Damselflies during the 2000s; sightings have been fewer since 2010.

Grand Union Canal White-legged Damselfly sightings have been reported widely since 2010, particularly south-east of Wigton.

River Soar and Anker A few sightings have come from the higher tributaries of these river systems since 2010.

River Sence The lower reaches of the Sence have produced the dense records since 2010.

Overall White-legged Damselfly appear widespread in this county; although survey work is needed to provide an updated distribution map there is no immanent concern for the species.



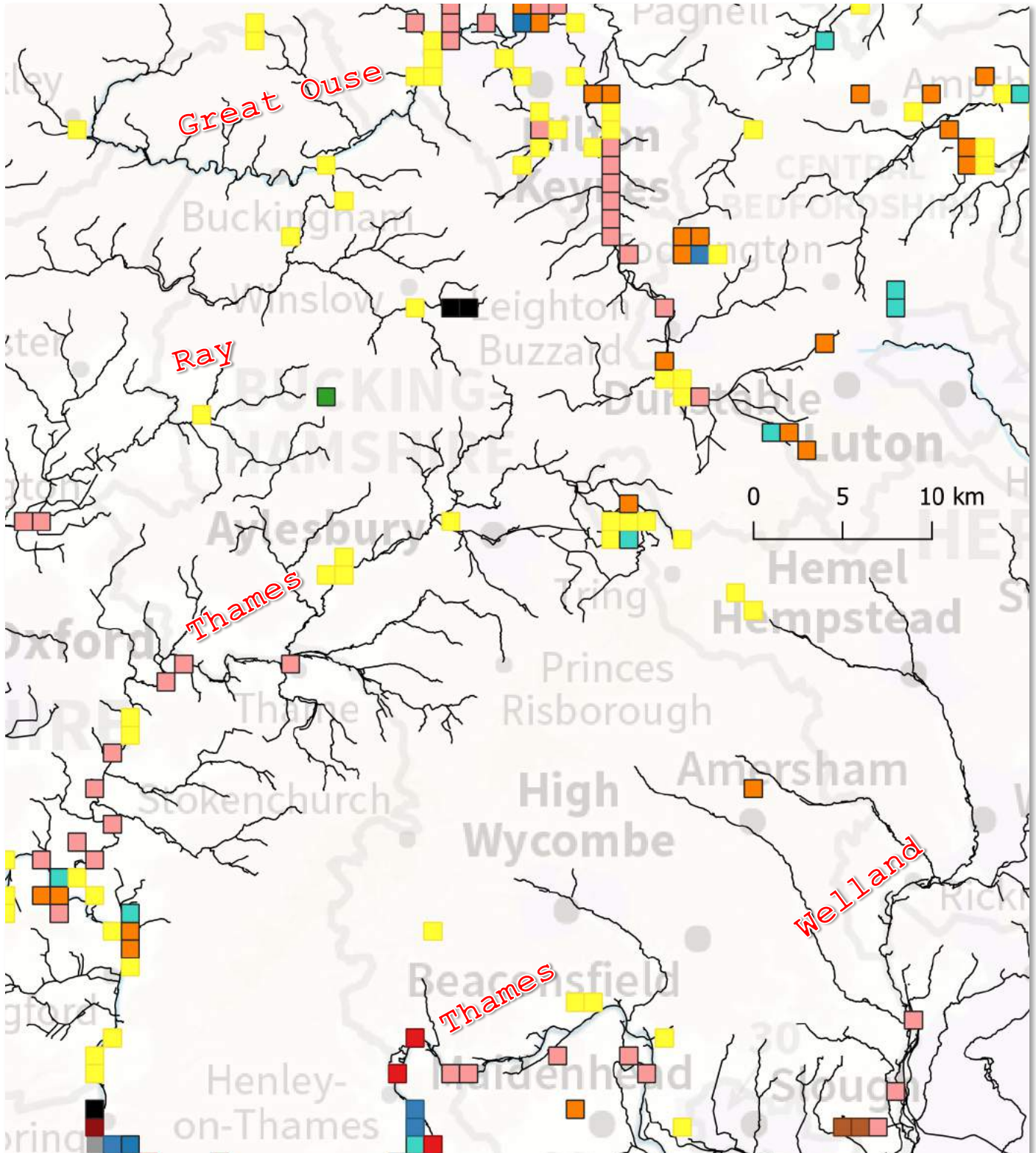
Buckinghamshire

Great Ouse A few monads produced sightings on this river systems in Buckinghamshire during the 2000s.

River Thames Only a couple of monads have produced sightings on the River Thames in Buckinghamshire since 2010.

River Ray and Welland These river systems only have a few monads with historic records.

The historic data would give the impression that White-legged Damselfly are in decline in Buckinghamshire making this county a priority for future recording.



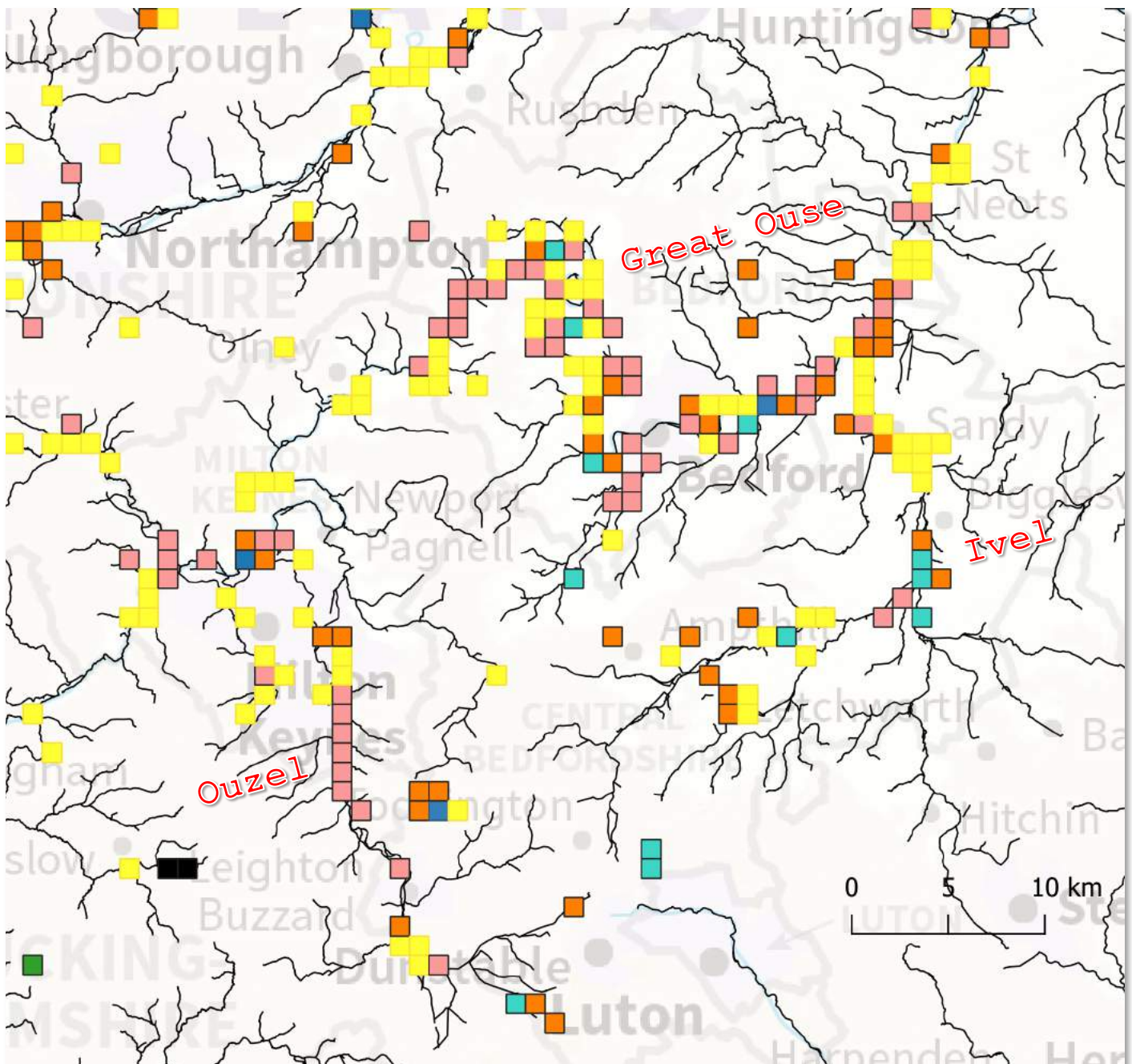
Bedfordshire

Great Ouse There have been sparse records along the Great Ouse in recent years; all monads visited during the Investigation (2018-2019) produced sightings.

River Ivel Similarly the Ivel, and its tributaries, have had sparse records in recent years and all monads visited during the Investigation produced sightings.

River Ouzel/ Grand Union Canal Records along this river system are predominantly from 2000 .

Recent sightings (post 2010) have been widespread but sparse around Bedfordshire; this county is a priority for future recording effort to improve our understanding of White-legged Damselflies distribution.



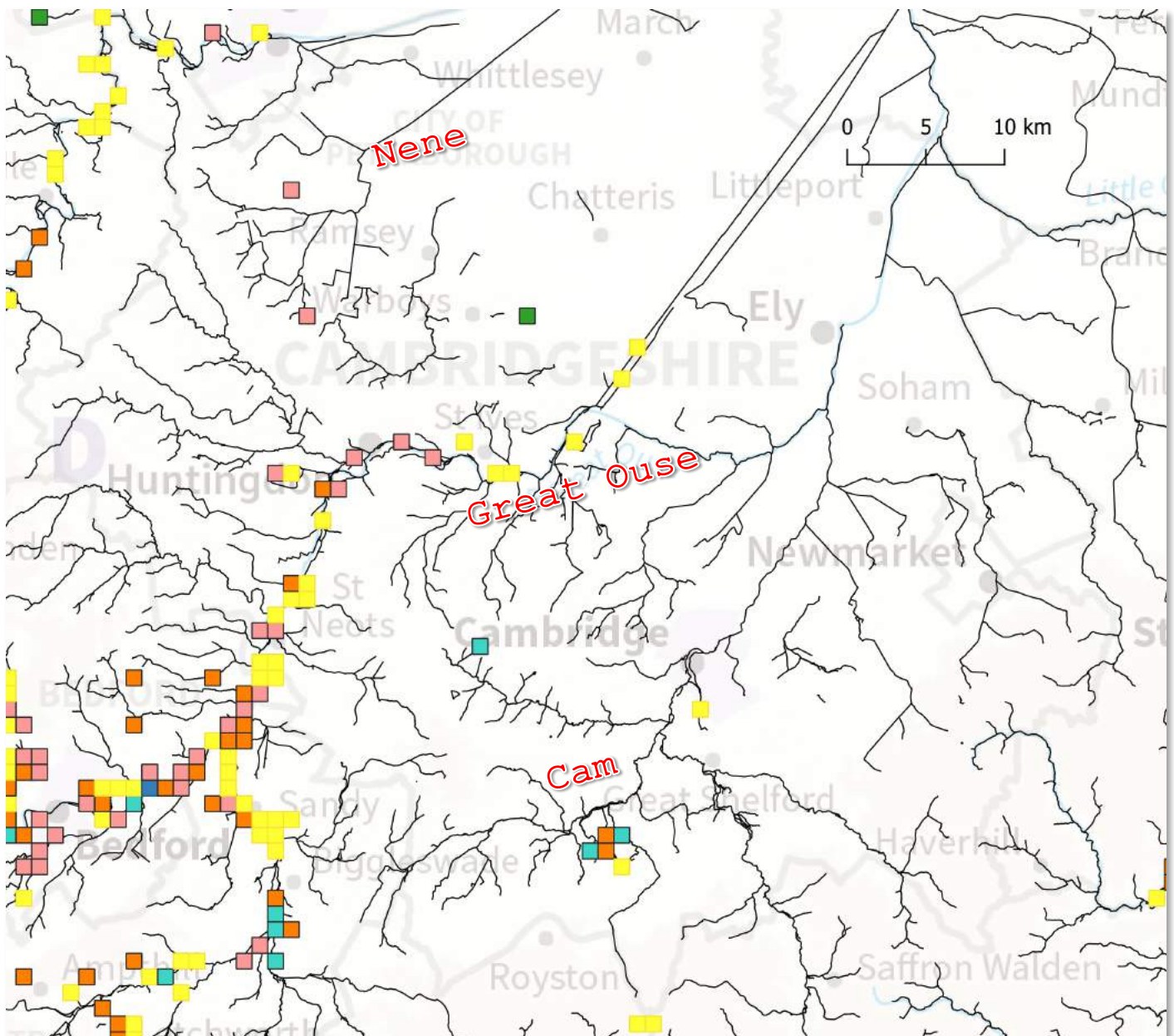
Cambridgeshire

Great Ouse Records for this river system are few and far, and also limited to the upper reaches near the west county border.

River Cam Few records exist for this river system apart from cluster near Melbourn.

River Nene Only a couple of old pre 2000 results exist for this river system in the higher tributaries.

This county is a priority due to the lack of recent records.

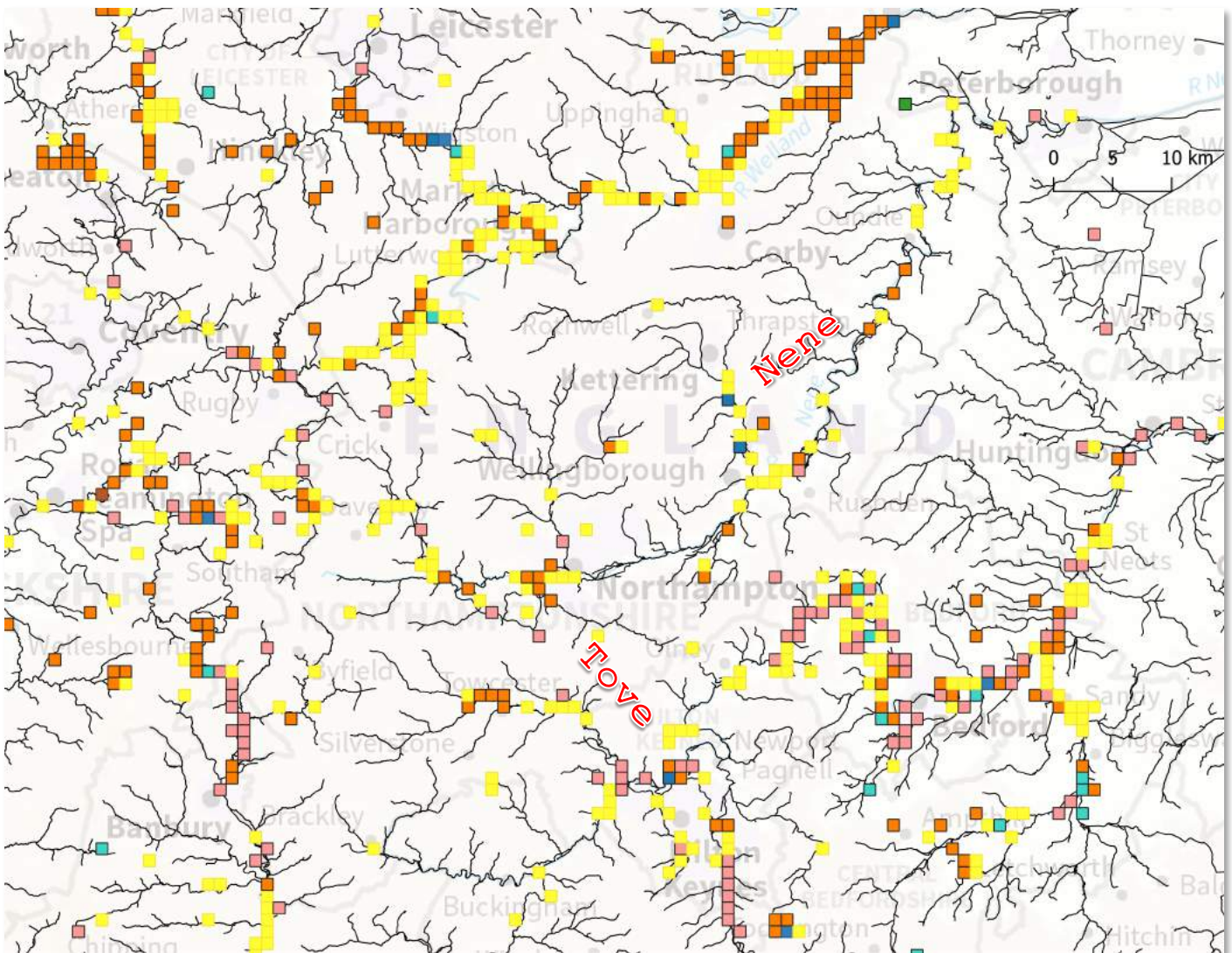


Northamptonshire

River Nene This river system is responsible for most of the records for this county. Records from 2010 onwards are sparse; although all monad visits during the Investigation (2018-2019) produced sightings.

River Tove Recent records (post 2010) are clustered round Towcester.

This county is a priority due to the lack of recent records.



Get Involved

After reviewing the existing White-legged Damselfly data for the UK it is clear a widespread survey effort is required before we will be able to create up to date distribution maps for this species.

Survey effort need to focus on revisit monads with historic records in order to determine if there has been a change in distribution. In addition, records should look out for White-legged Damselflies in new monads if they contain suitable habitat.

If you live within one of the counties/areas listed in the report we would be very grateful if you could keep an eye out for White-legged Damselfly at your local wetlands and report you sightings to the BDS recording scheme. You can do this by visiting the 'Recording' section of the BDS website.

You can go one step further by carrying our targeted surveys searching for White-legged Damselflies in historic monads.

If you would like to find out more about White-legged Damselflies, their habitat, and how to take part, please visit the **White-legged Damselfly Investigation project page** which can be found in **Other Projects** in the **Recording** section of the website.

www.british-dragonflies.org.uk

Ovipositing White-legged Damselflies

