

## Odonata

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Odonata – dragonflies and damselflies – are one of the better recorded groups of invertebrates. They are conspicuous and distinctive, making them easier to study and record than many other invertebrate groups. Odonata species use a wide range of freshwater habitats, from large rivers to ditches, and from lakes to small ephemeral pools, but all of these have been affected by hydrological changes, such as drainage and abstraction, pollution and changes in management.<sup>1</sup> In parts of Europe, more than 50% of wetlands have been lost.<sup>2</sup> Three species had become extinct in Britain by the 1960s, and a further 12 are now under threat.<sup>3</sup> Odonata species may also be affected by climate change; a number of species have recently increased their range northwards, and some populations at the edge of ranges have been lost.<sup>3</sup>

Odonata can be used as general indicators of wetland health. Studies<sup>4,5</sup> have found that they are sensitive to changes in condition and levels of disturbance, and that odonata diversity correlates well with overall diversity.

**Outlook:** Odonata conservation is linked to conservation and management of freshwater and wetland habitats. There have been some successes in raising awareness and increasing knowledge of dragonfly and damselfly species: Odonata recording has increased in recent times,<sup>3</sup> a new national atlas of dragonflies was published in 2014, and a ‘State of Dragonflies’ report is expected in 2020. Recorders in Greater Gwent are aiming to produce a local odonata atlas within the next decade. The BDS (British Dragonfly Society) recognises Priority Sites<sup>6</sup> based on the presence of rare species or high species richness, and it is hoped that regular monitoring of key sites could be established.

In terms of habitat, the outlook for odonata is poor. Degradation and loss of wetlands is continuing, more rapidly than for other ecosystems. Climate change is predicted to exacerbate this loss.<sup>3</sup>

**Odonata in Greater Gwent:** There are 28 species of dragonfly and damselfly regularly found in Gwent. Four of these species – Common Clubtail (*Gomphus vulgatissimus*), Small Red Damselfly (*Ceriatagrion tenellum*), Variable Damselfly (*Coenagrion pulchellum*) and Scarce Blue-Tailed Damselfly (*Ischnura pumilio*) – are BDS National Priority Species and are considered individually.

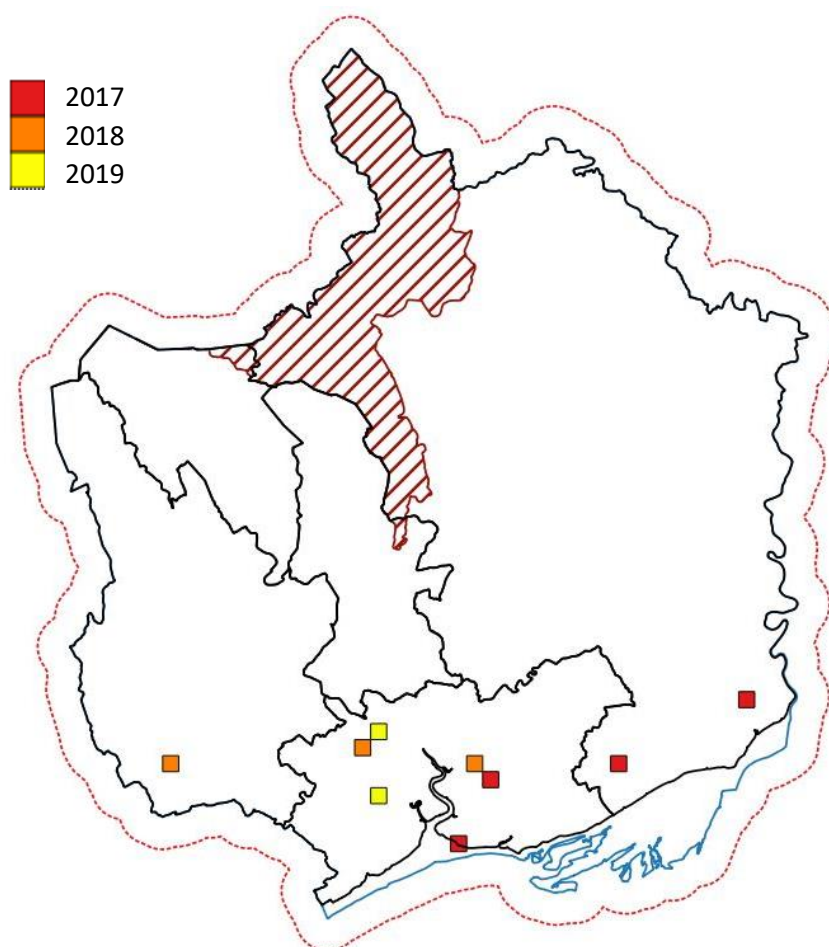
Local Priority Species have also been set by the BDS<sup>6</sup> and by the ‘Guidelines for the Selection of Wildlife Sites in South East Wales’.<sup>7</sup> Recent breeding records for these species would contribute towards allocation of sites as BDS Local Priority Sites or Sites of Importance for Nature Conservation (SINCs). Local Priority Species for VC35 (Monmouthshire) and VC41 (Glamorgan) and the SINC lists A (designatory) and B (contributory) are listed below:

Species	Common Name	BDS Local Priority	SINC List	Greater Gwent Records 1970–2019	Greater Gwent Records 2010–2019
<i>Aeshna grandis</i>	Brown Hawker	VC35	B	17	7
<i>Aeshna juncea</i>	Common Hawker	VC35 & VC41		205	86
<i>Brachytron pratense</i>	Hairy Dragonfly	VC35	A	312	45
<i>Coenagrion mercuriale</i>	Southern Damselfly		A	0	0
<i>Cordulia aenea</i>	Downy Emerald	VC41	A	0	0
<i>Erythromma najas</i>	Red-Eyed Damselfly	VC35 & VC41	A	17	15
<i>Libellula quadrimaculata</i>	Four-Spotted Chaser	VC41		92	42
<i>Orthetrum coerulescens</i>	Keeled Skimmer	VC35	A	52	15
<i>Platycnemis pennipes</i>	White-Legged Damselfly	VC35	A	106	31
<i>Sympetrum danae</i>	Black Darter	VC 35 & VC41	B	105	39
<i>Sympetrum sanguinem</i>	Ruddy Darter		A	90	31

Rarities and vagrants include Vagrant Emperor (*Anax ephippiger*) (two records near Newport in 2013 and 2019), Downy Emerald (*Cordulia aenea*) (one undated unconfirmed record near Caldicot), Red-Veined Darter (*Sympetrum fonscolombii*) (four scattered records, the most recent in 2006) and Yellow-winged Darter (*Sympetrum flaveolum*) (one unconfirmed record from Magor in 1965). Gwent also holds the only British record for Banded Darter (*Sympetrum pedemontanum*), from near Tredegar in 1995.

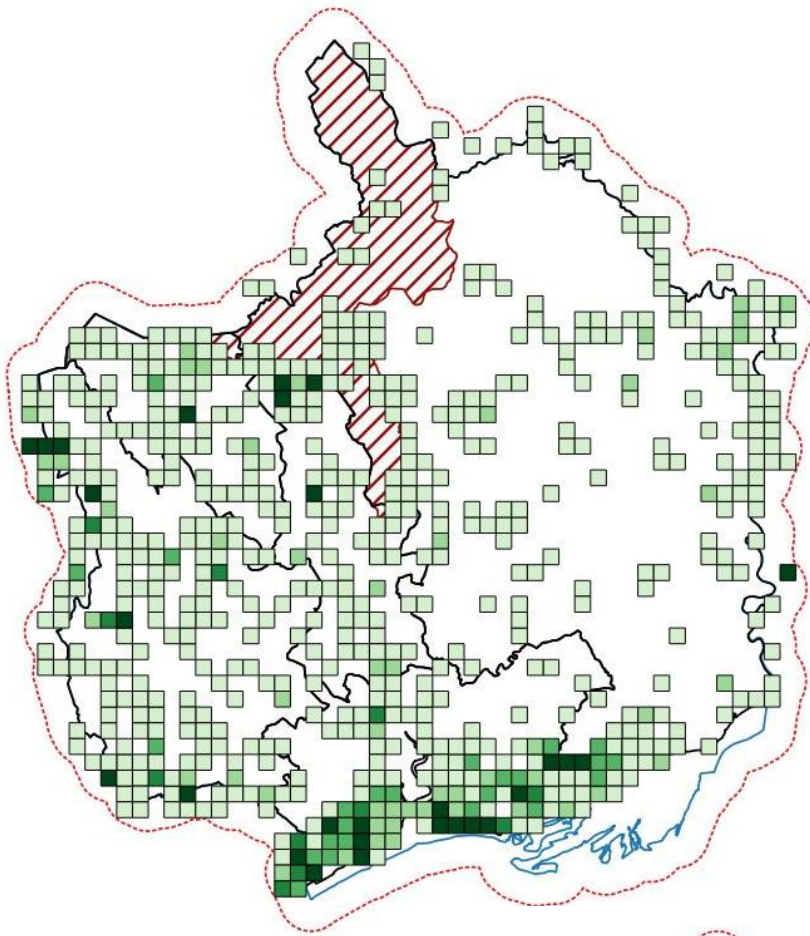
Worthy of mention is a recent colonist, the Small Red-Eyed Damselfly (*Erythromma viridulum*), which was first recorded in the south-east of the UK in 1999. It was first recorded in Gwent in 2017 and appears to be spreading westwards across the Gwent Levels.

*Records of Small Red-eyed Damselfly by year*

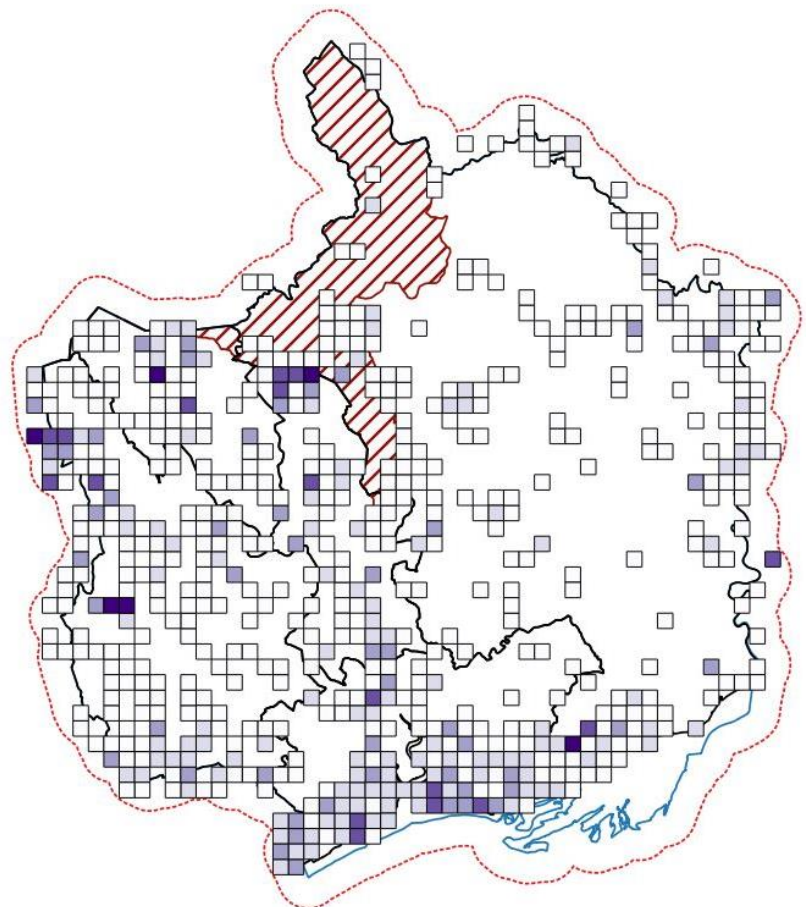
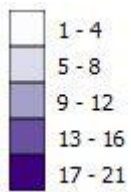


**Greater Gwent distribution:** Greater Gwent has several areas of importance for dragonflies and damselflies. The Gwent Levels SSSIs (Sites of Special Scientific Interest) in particular represent a large, well recorded area with a high species richness. The post-industrial uplands, such as Garn Lakes and Merthyr Common, also show pockets of high species richness. Odonata recording is often limited to known sites rather than the wider countryside; Central Monmouthshire is very under recorded, as are parts of Newport. The Gloucester hotspot is the result of centring of older records, although the Park Nature Reserve just to the north (not included due to being an incomplete square) has high species richness for Odonata.

*Odonata records (maximum  
set to  $\geq 100$ )*

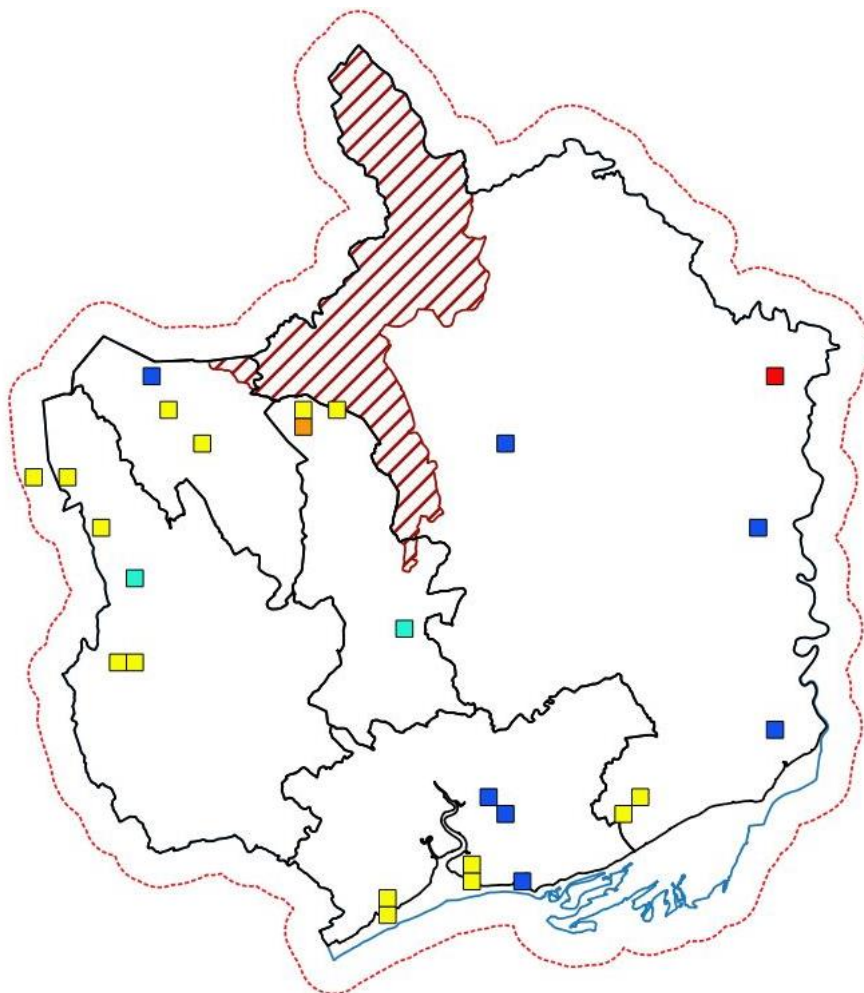
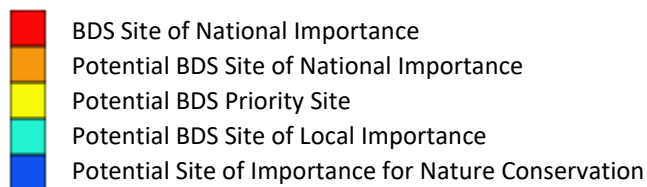


*Odonata species richness*



Key sites: Important sites for dragonflies are designated on the basis of overall species diversity and the presence of National and Local Priority Species. BDS and the *Guidelines for the Selection of Wildlife Sites in South East Wales* have different criteria: any site meeting BDS criteria will also qualify as a SINC. Analysing the species diversity and abundance and breeding records of Priority Species from 2010 onwards shows 23 sites that could qualify as BDS sites or SINC; most are already designated at SINC level or higher, although 5 have no protected status. (Note that some sites, such as Newport Wetlands NNR (National Nature Reserve), incorporate more than one square).

#### *Potential Key Sites for Odonata in Greater Gwent*



Local Authority	Site name	Protection	Designation	Qualification Criteria	Number of species
BGCBC	Central Valley		Potential BDS Priority Site	High Diversity	13
BGCBC	Circuit Wales Site	SINC	SINC	High Diversity	9
BGCBC	Rhyd y Blew	part SINC	Potential BDS Priority Site	High Diversity and abundance of Black Darter	15
CCBC	Cwmllydrew Meadows	SINC	Potential BDS Priority Site	High Diversity	14
CCBC	Gelli-gaer Common	SINC	Potential BDS Priority Site	High Diversity, Breeding records for Common Hawker	14
CCBC	Parc Cwm Darren	SINC	Potential BDS Local Importance	Abundance of Common Hawker	5
CCBC	Parc Penallta	Country Park	Potential BDS Priority Site	High Diversity, Breeding records for Common Hawker	16
MCC	Cleddon Bog	SSSI	SINC	High Diversity	9
MCC	Clytha	SAC	Potential BDS Local Importance	Abundance of White-legged Damselfly	3
MCC	Magor Marsh	SSSI	Potential BDS Priority Site	High Diversity	13
MCC	Mathern Mill		SINC	High Diversity	10
MCC	River Wye	SAC	BDS National Importance	Abundance and Breeding records for Common Clubtail, Breeding records for White-legged Damselfly	10
MCC	Unknown		Potential BDS Priority Site	High Diversity	13
MTCBC	Merthyr Common	SINC	Potential BDS Priority Site	High Diversity	14
NCC	Glan Llyn		SINC	High Diversity	10
NCC	Lliswerry Pond	SINC	SINC	High Diversity	9

NCC	Newport Wetlands	NNR	Potential BDS Priority Site	High Diversity, Abundance and Breeding records for Hairy Dragonfly	13
NCC	Peterstone Lakes	SSSI	Potential BDS Priority Site	High Diversity, Abundance and Breeding records for Common Hawker	17
TCBC	Canada Tips	SINC/SSSI	SINC	High Diversity	11
TCBC	Garn Lakes	LNR (Local Nature Reserve)	Potential BDS National Importance	Abundance of Scarce Blue-tailed Damselfly	12
TCBC	Garn yr Erw	SINC	Potential BDS Priority Site	High Diversity	14
TCBC	Sebastopol	SINC	Potential BDS Local Importance	Abundance of Red-eyed Damselfly	8



## Small Red Damselfly *Ceriagrion tenellum* (de Villers, 1789)

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**Protection:** none

**Conservation status:** Red List: LEAST CONCERN (UK)<sup>3</sup>

**Data availability:** Poor (12 records)

**Context:** The Small Red Damselfly has a limited distribution but is not considered Vulnerable as its range is thought to be increasing.<sup>3</sup> It is still listed as a Nationally Important species by the British Dragonfly Society.<sup>6</sup> It is found on heathland bogs in South and West England and Wales. There are only 12 records within Greater Gwent and the 2km buffer.

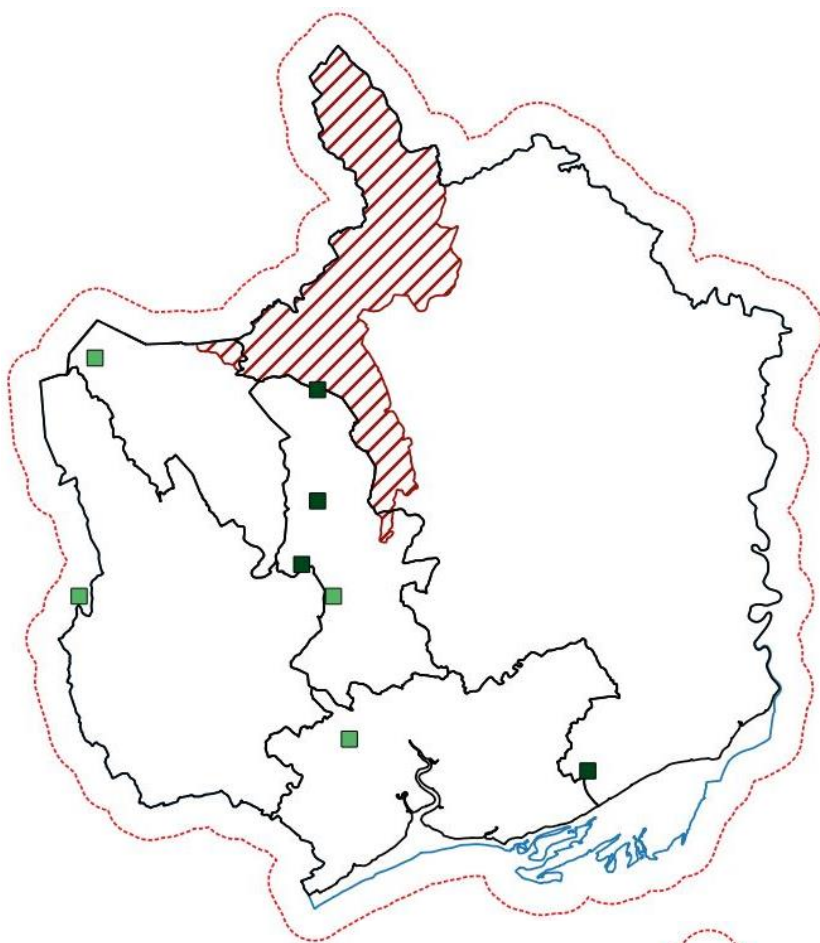


*Andy Karran*

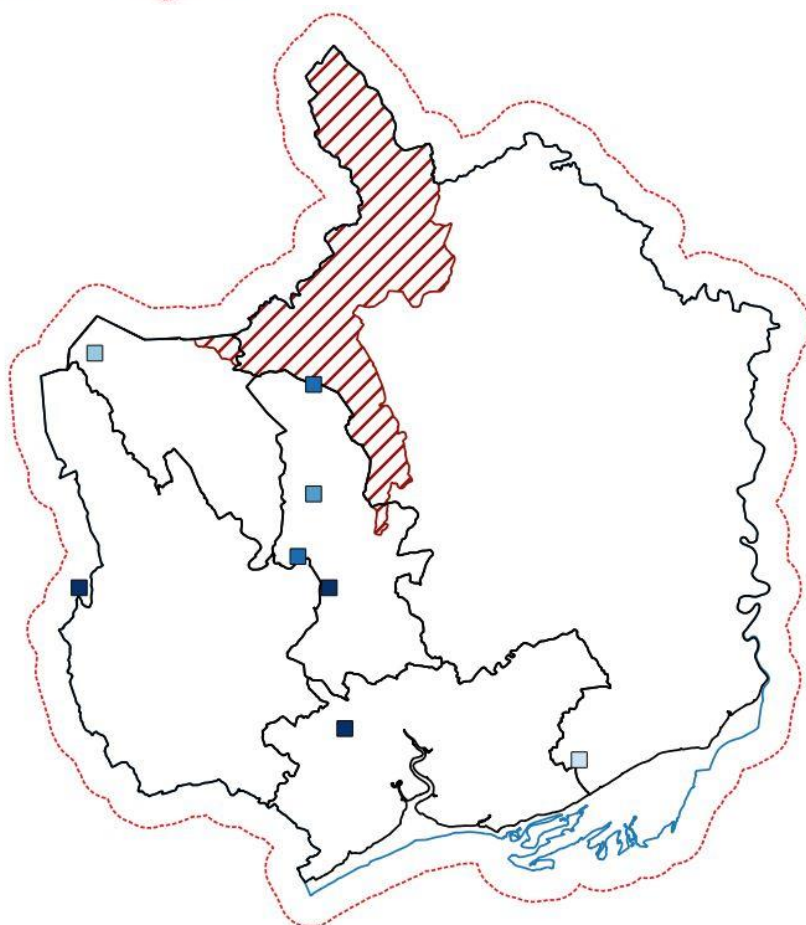
**Outlook:** Despite an improving national status, there is considerable uncertainty about the status of Small Red Damselfly within Gwent. Targeted surveys have failed to find new records and there is ongoing investigation as to the validity of historic records.<sup>8</sup> Its wet heathland habitat is also threatened by loss, fragmentation, drainage and lack of management.<sup>9</sup>

**Greater Gwent range:** Small Red Damselfly records are only found within 8 1km squares, and only 3 records are from the last decade. Records are scattered across Gwent, mainly in the west of the study area. It is likely that some of these records are errors, as this species is easily confused with the Large Red Damselfly (*Pyrrhosoma nymphula*) and some of the sites do not correspond to the usual habitat for Small Red Damselfly.

*Small Red Damselfly record density (Maximum density 2 records/km<sup>2</sup>)*



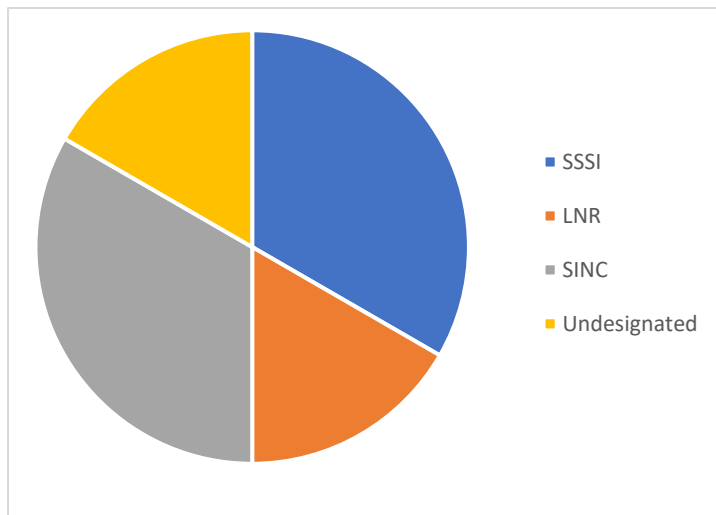
*Most recent records for Small Red Damselfly by decade*



**Population trends:** Trends cannot be inferred from such a small number of records for the area. At the UK level, experts believe that the Small Red Damselfly is increasing its range,<sup>3</sup> but this is not reflected locally in the current data for Greater Gwent.

**Records on Protected Sites:** Over 80% of Greater Gwent records occur on protected sites, with records found on SSSIs on the Gwent Levels and the Bloreng, Tirpentwys LNR and at SINC's such as The British and Coed Gwaun y ffeiriad grasslands.

*Small Red Damselfly records from protected sites*



## Variable Damselfly *Coenagrion pulchellum* (Vander Linden, 1825)

**Protection:** none

**Conservation status:** Red List: NEAR THREATENED (UK)<sup>3</sup>

**Greater Gwent data availability:** Poor (37 records)

**Context:** The Variable Damselfly is included in the Odonata Red List for Great Britain due to its very limited distribution. It is found in ponds, canals and ditches, and the Greater Gwent population is concentrated on the Gwent Levels. There are only 37 records within the study area.

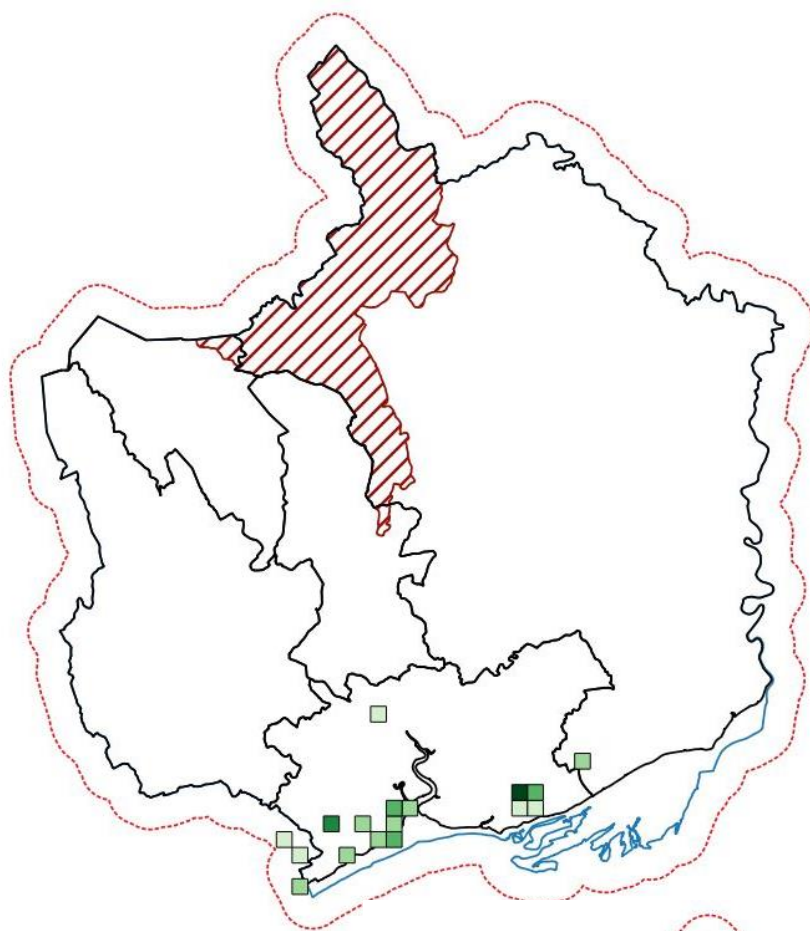


Pete Hadfield

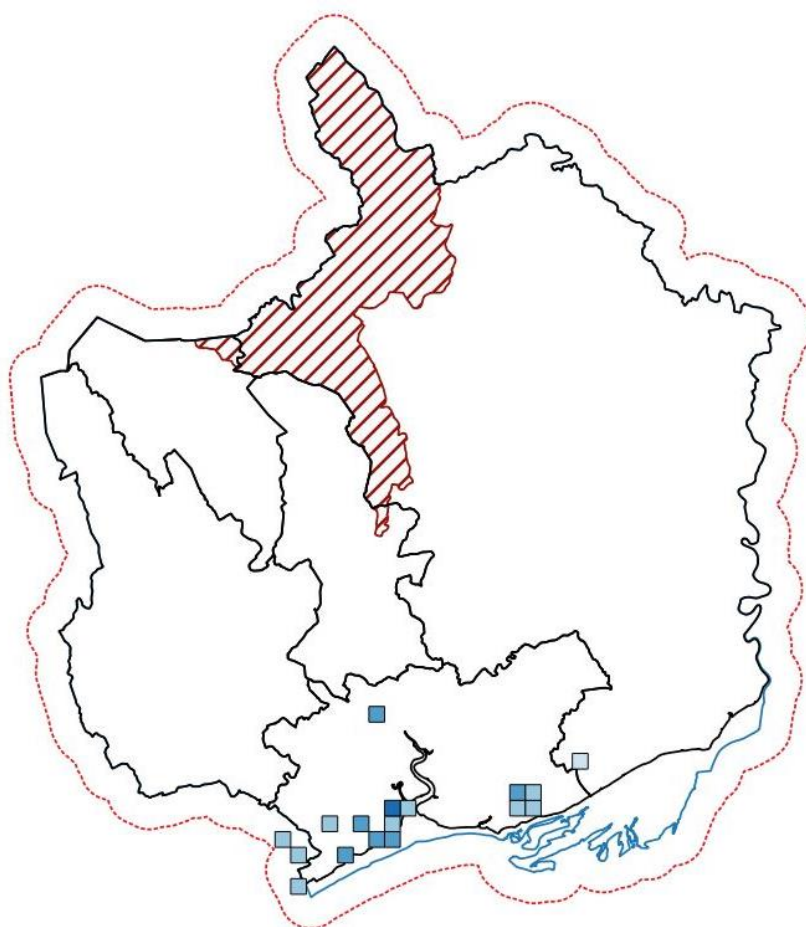
**Outlook:** There is a lack of recent records for Variable Damselfly in Greater Gwent. However, the absence of records could be the result of limited recording. It is important to note that the Variable Damselfly is easily confused with other, more common, *Coenagrion* species, therefore records are only likely to come from experienced surveyors and dedicated surveys, rather than ad hoc sightings. On a positive note, there are as yet unconfirmed records for the species in 2020,<sup>8</sup> so Variable Damselfly are still present, although possibly in low numbers. Further survey work across the Gwent Levels would be required to give more certainty around this species' status.

**Greater Gwent range:** Variable Damselfly records are only found within 17 1km squares within Greater Gwent. The majority of records are from the Gwent Levels, the only record outside the Levels, at Gwastad Mawr, is unconfirmed. There is a hotspot near Whitson, but these records date from the 1980s and 1990s. The most recent records are from the eastern end of the St Brides Wentloog Levels and date from 2007.

Record density for Variable  
Damselfly (maximum 5  
records/km<sup>2</sup>)



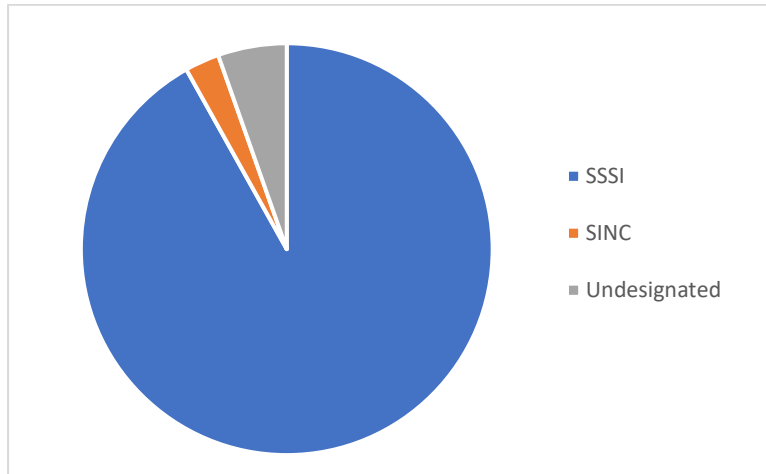
Most recent Variable  
Damselfly records by date



**Population trends:** Trends cannot be inferred from such a small number of records for the area. There have been no new confirmed records of Variable Damselfly since 2007, but potential new records in 2020<sup>8</sup> provide some hope for the continuing presence of the species in Greater Gwent.

**Protection:** Over 90% of Greater Gwent records occur on the Gwent Levels SSSIs, with one unconfirmed record on a SINC at Gwastad Mawr.

*Variable Damselfly records from protected sites*



## Common Clubtail Dragonfly *Gomphus vulgatissimus* (Linnaeus, 1758)

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**Protection:** none

**Conservation status:** Red List: NEAR THREATENED (UK)<sup>3</sup>

**Data availability:** Poor (94 records)

**Context:** The Common Clubtail is included in the Odonata Red List for Great Britain due to its very limited distribution. It is only found on a few lowland rivers, including the Wye. The British Dragonfly Society started the Clubtail Count in 2017 in response to reports from local dragonfly recorders suggesting possible declines.<sup>10</sup>



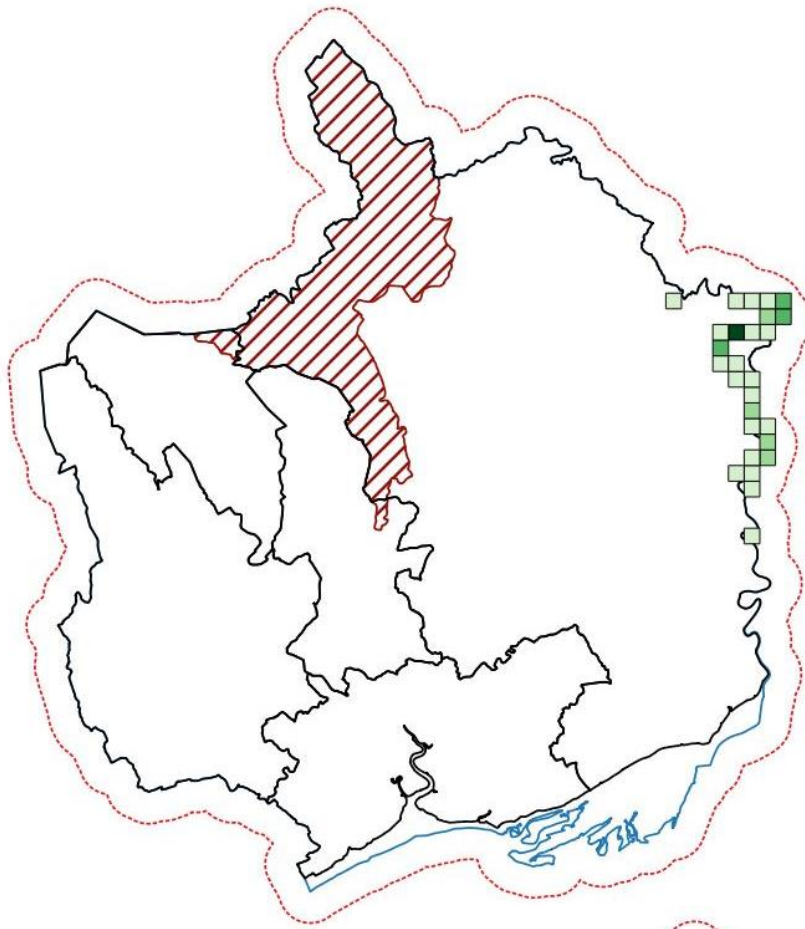
*Andy Karran*

**Outlook:** The limited distribution of Common Clubtail makes it vulnerable. Potential threats are linked to river management, such as pollution and recreational use.<sup>10</sup> Most waterbodies within the Wye catchment are achieving Good or Moderate status within the Water Framework Directive, but rural diffuse pollution is an issue.<sup>11</sup> The number and quality of Clubtail Count records means that the Wye could qualify as a British Dragonfly Society National Priority Site,<sup>6</sup> although further work would be needed to determine the extent of any designation.

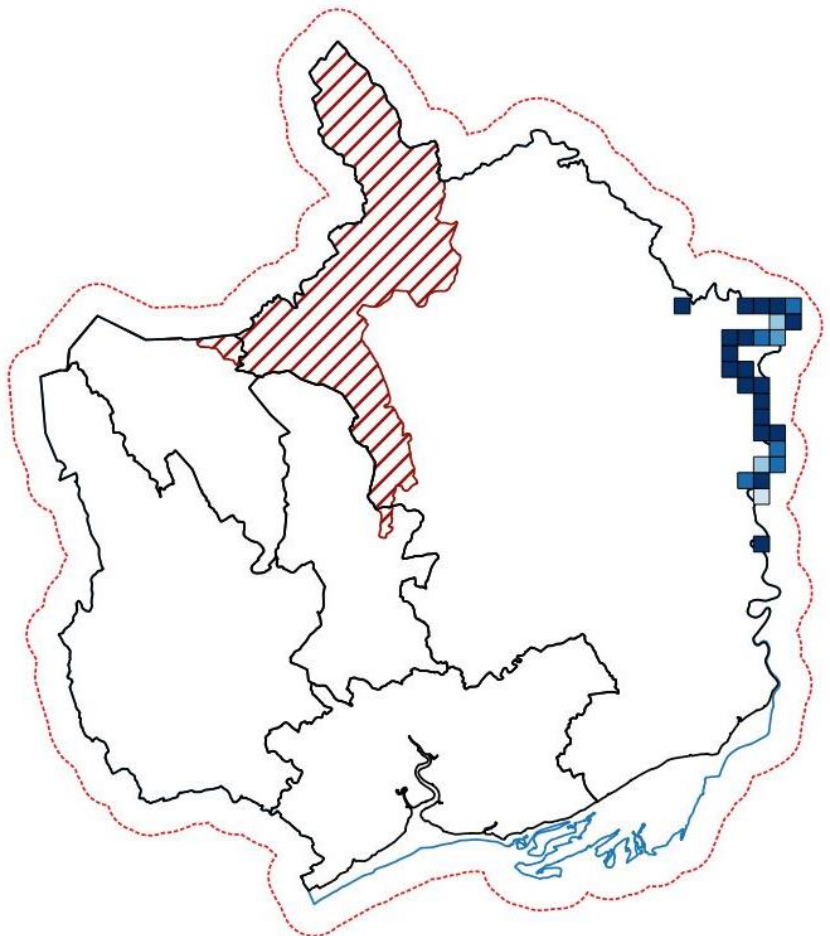
**Greater Gwent range:** Common Clubtail records are only found within 27 1km study area squares (not including squares that extend beyond the 2km buffer) almost exclusively along the River Wye in the northeast of the study area. There is 1 record on the Monnow tributary. The population continues northwards beyond the study area. There are recent records (2010–2019) at the extremes of the range, although it should be noted that there are very few historic records for this species, and 56% of records are from the last five years due to a recent increase in recording.



*Record density for Common  
Clubtail (maximum 13  
records/km<sup>2</sup>)*



*Most recent Common  
Clubtail records by decade*



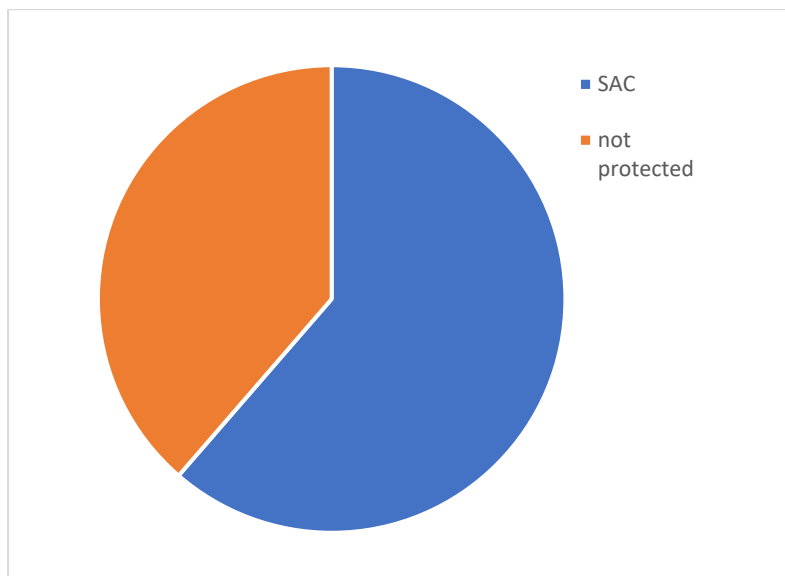


**Population trends:** It is too soon to draw any conclusions from the Clubtail Count, although initial results appear to show a positive picture. Clubtail count statistics<sup>10</sup> from within Greater Gwent and the 2km buffer are given below.

	Total monads surveyed	Monads with Clubtails found	Monads with Clubtails absent
2017	7	5	2
2018	14	11	3
2019	12	11	1

**Protection:** Because of the high association with the River Wye, 61% of Greater Gwent records are within SACs – either the River Wye SAC or the Wye Valley Woodlands SAC. Note that this figure is probably an underrepresentation, as lower resolution grid references are placed in the centre of the square, which may cause the record to appear outside of designated areas.

*Common Clubtail records from protected sites*



## Scarce Blue-Tailed Damselfly *Ischnura pumilio* (Charpentier, 1825)

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**Protection:** none

**Conservation Status:** Red List: NEAR THREATENED (UK)<sup>3</sup>

**Data Availability:** Poor (80 records)

**Context:** The Scarce Blue-Tailed Damselfly is included in the Odonata Red List for Great Britain due to its very limited distribution, although it is relatively more common in Wales and the south-west of England. It is found in shallow pools and slow flowing water, such as bogs and seepages, often in early successional habitats with a degree of disturbance. There are just 40 records within Greater Gwent and an additional 40 within the 2km buffer, but only 7 records within the last decade.

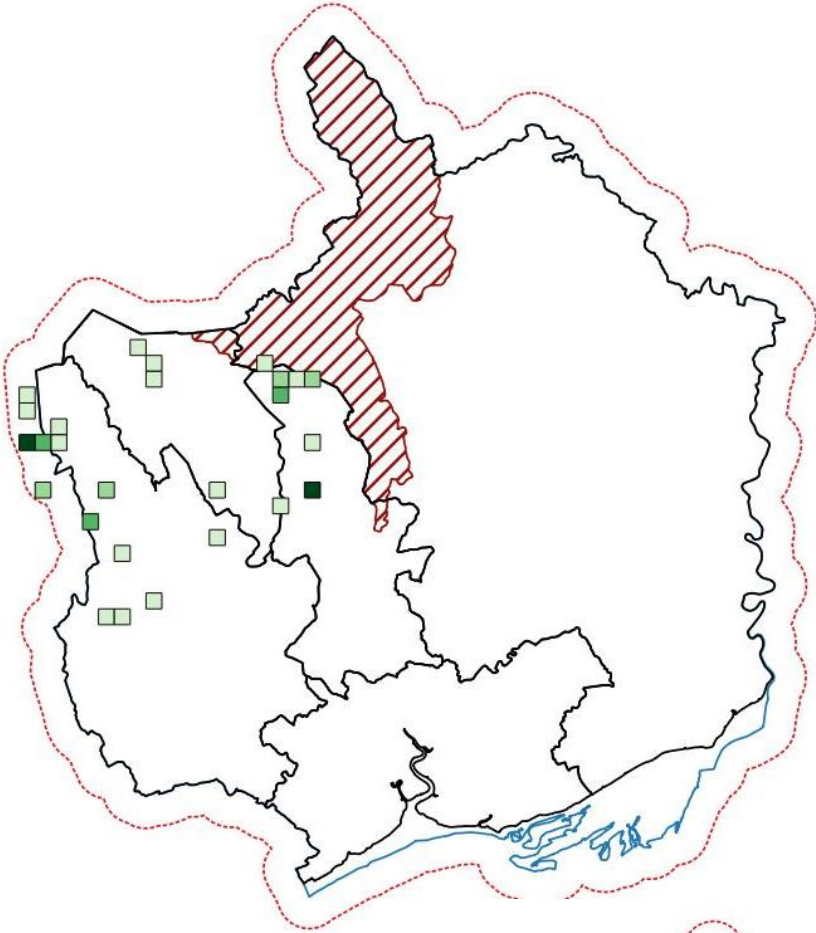


*Andy Karran*

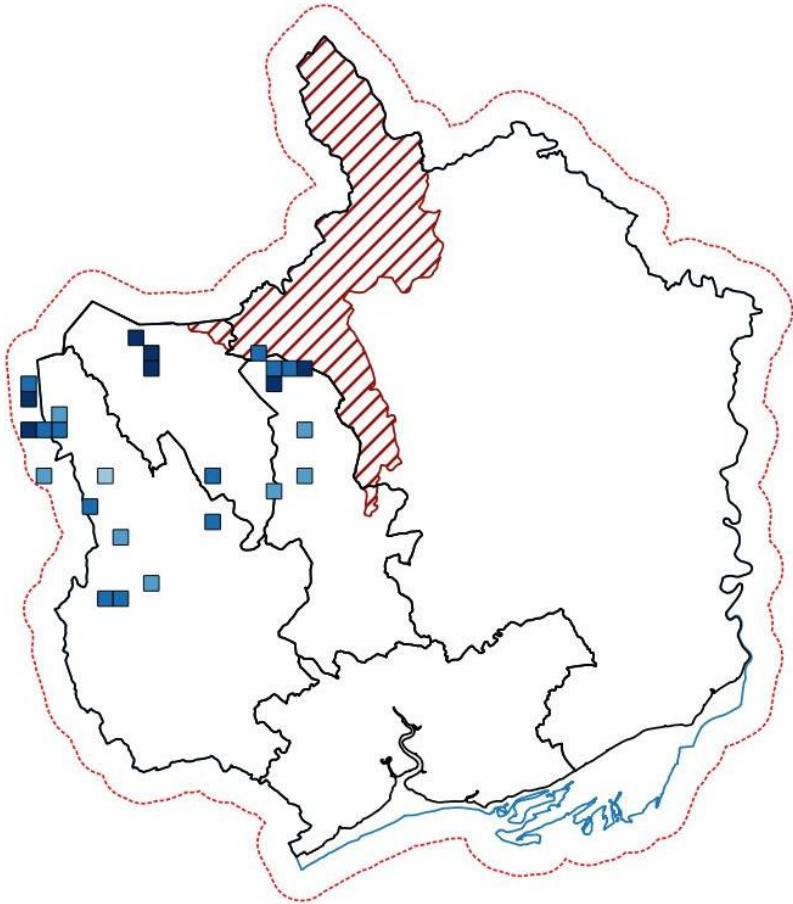
**Outlook:** The limited distribution and specific habitat requirements of the Scarce Blue-tailed Damselfly make it very vulnerable. Habitat loss is most likely due to succession and disturbance, and the fragmented nature of the population restricts colonisation opportunities. More survey work would be needed to confirm breeding to confer BDS Priority Site status on sites like Garn Lakes and Merthyr Common.

**Greater Gwent range:** Scarce Blue-Tailed Damselfly records are only found within 26 1km squares, including those within 2km of the Greater Gwent boundary. Records are limited to the north and west of the region, with hotspots (higher numbers of more recent records) occurring at Garn Lakes LNR and Garn-yr-Erw SINC in Torfaen and at Cefn Gelligaer SINC and Merthyr Common Central candidate SINC<sup>12</sup> on the Caerphilly and Merthyr Tydfil border. Although they are important sites for the species, they would not qualify as British Dragonfly Society Priority Sites<sup>6</sup> because of a lack of breeding records.

*Scarce Blue-tailed  
Damselfly record density  
(Maximum density 6  
records/km<sup>2</sup>)*



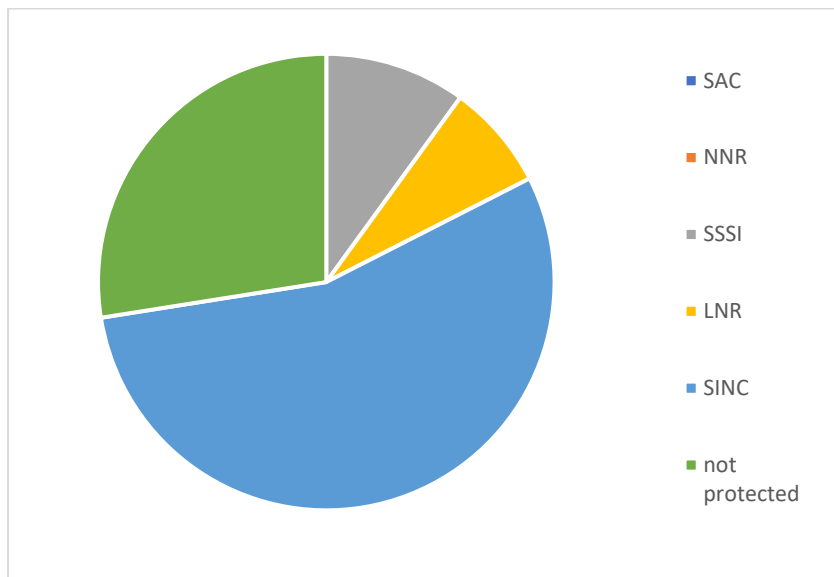
*Most recent Scarce Blue-Tailed  
Damselfly records by decade*



**Population trends:** Trends for Scarce Blue-tailed Damselfly cannot be inferred from such a small number of records for the area. Regular monitoring of sites, particularly potential Priority Sites, would be needed to confirm and monitor breeding presence.

**Protection:** Over 70% of Greater Gwent records occur on protected sites, with the majority on Sites of Importance for Nature Conservation, such as Garn yr Erw and Cefn Gelligaer. SSSI records are from the Bloreng, and LNR records are from Garn Lakes.

*Scarce Blue-tailed Damselfly records from protected sites*



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