

## Reptiles and Amphibians

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Reptiles and amphibians, collectively known as herptiles, are one of the most threatened taxonomic groups, yet we know very little about their status and distribution. The European Red List of Reptiles estimates that a fifth of European reptile species are threatened, with a further 13% considered Near Threatened. This compares with 23% of European amphibian species and is more than either birds or mammals.<sup>1</sup> This is within a context of alarming global decline for both amphibians<sup>2</sup> and reptiles.<sup>3</sup>

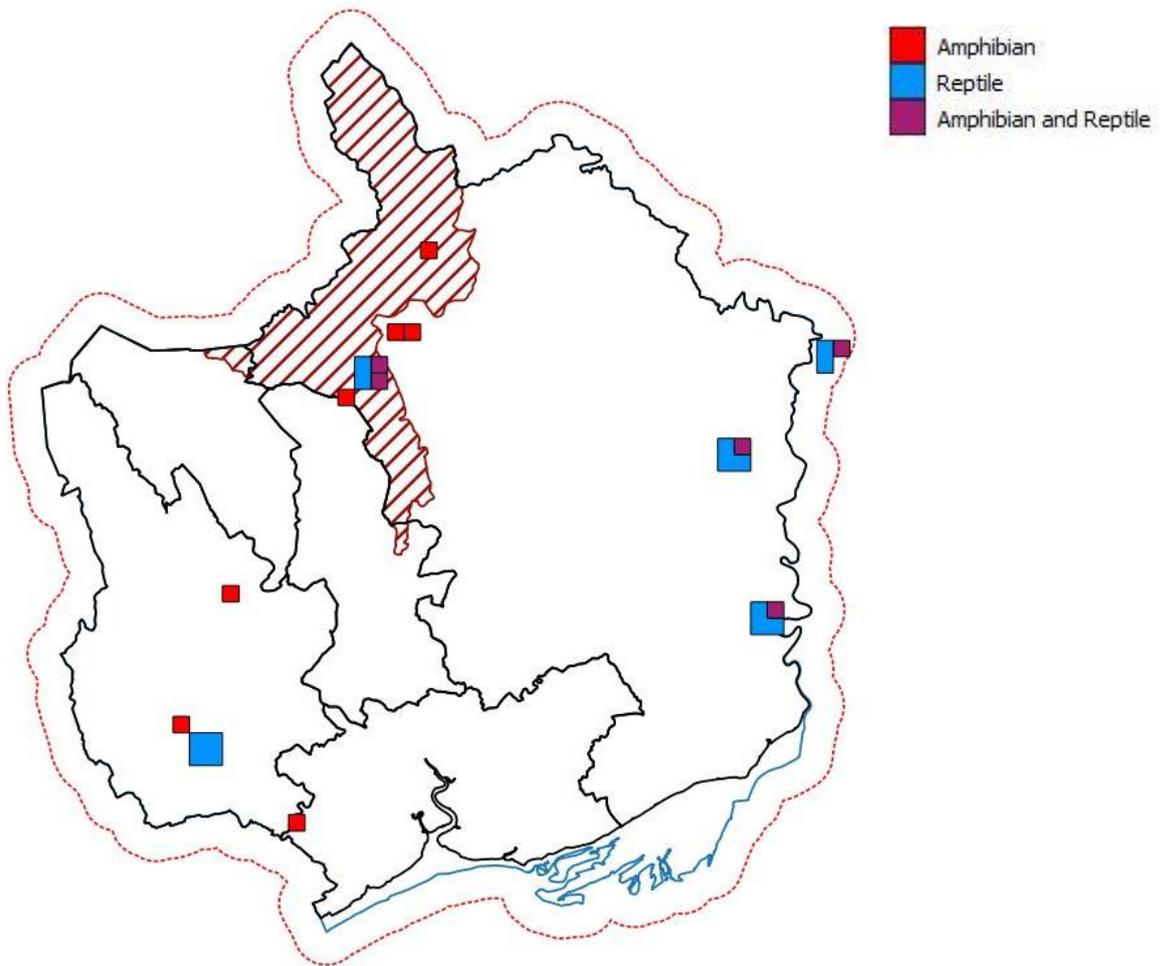
Threats to amphibians and reptiles are similar: habitat loss and degradation, persecution, pollution, disease, introduced invasive species and climate change.<sup>2,3</sup> These factors may interact with one another,<sup>2</sup> making reversing these declines difficult.

In the UK, there are seven native species of amphibian, and six native species of terrestrial reptile. Five herptiles are European Protected Species, and all reptiles are protected from intentional killing and injury through the Wildlife and Countryside Act. It is possible that Britain once had more herptiles, and there are some who would like to reintroduce species such as the Common Tree Frog (*Hyla arborea*).<sup>4</sup>

Herptiles are less well recorded than other groups. Indices for herptiles are absent from the UK 'State of Nature' reports – the first 'State of Nature' report was able to include a trend for just one amphibian<sup>5</sup>, with the latest report able to include two.<sup>6</sup> The National Amphibian and Reptile Recording Scheme (NARRS) focuses on widespread herptiles but only began in 2007, making it comparatively new compared to other schemes. Initial analysis from the first six years of recording indicate that the currently level of recording is sufficient to detect change among widespread amphibians and Common Lizard, but not among Great Crested Newts or other reptiles.<sup>7</sup> There are now additional monitoring schemes in place, such as Make the Adder Count (MTAC). Schemes for monitoring ponds, from the National Pond Surveys (NPS) carried out in the 1980s to the recent PondNet, also contribute amphibian data. Data availability is also improving, with access to national datasets via the UK Records Pool (managed by ARG-UK and ARC) and the Wales Online Amphibian and Reptile Atlas, managed by ARC and the Welsh Local Environmental Record Centres (LERCs).

In Greater Gwent, there are five amphibian and four reptile species. As with the national picture, recording of herptiles is poor compared to other groups. There are just four NARRS reptile squares, and eleven NARRS amphibian squares in Greater Gwent, plus one of each within the buffer zone. All except one only have one year of data. It may be that the cryptic nature of reptiles means that recording is limited to experienced surveyors, but it should be possible to engage more people in pond surveys for amphibians in the future, if resources allow.

*NARRS squares coverage for amphibians (monads) and reptiles (tetrads)*



## Adder *Vipera berus* (Linnaeus, 1758)

**Protection:** Wildlife & Countryside Act (1981 as amended) Schedule 5 (Section 9(5) only)

**Conservation status:** UK BAP Priority Species, Environment (Wales) Act Section 7 Species. Red List<sup>1</sup>: LEAST CONCERN (Europe)

**Data availability:** Poor (181 records)

**Context:** Adders are Britain's only venomous reptile but are shy creatures and very difficult to survey: the NARRS only detected Adders in 7% of survey squares.<sup>7</sup> Because of this, and the variation in recording effort, a population estimate and measures of conservation status have only recently become possible.<sup>8</sup> By comparing recent and historic records, the reduction in English Adder range has been estimated at 39% by comparing pre-2006 (historic) records with those from 2006 to 2011. More than three quarters of vice-counties analysed had lost more than 30% of occupied monads.<sup>8</sup> Initial results from the MTAC programme has shown that this decline is particularly significant in smaller populations with less than ten individuals.<sup>9</sup>

**Outlook:** Adders appear to be particularly vulnerable to inbreeding depression caused by habitat fragmentation,<sup>9</sup> as well as disturbance, persecution and poor habitat management.<sup>8,9,10</sup> In some cases, habitat management for conservation of other species has a negative impact on Adders.<sup>8</sup>

This is of serious concern, as site managers responding to a questionnaire in England reported that 28% of adder sites were 'isolated', and where a population estimate was possible, 33% supported less than ten individuals.<sup>10</sup> At current rates of decline, small (<10 individuals) Adder populations are predicted to become extinct within 10–15 years, leaving Adders restricted to a small number of larger sites.

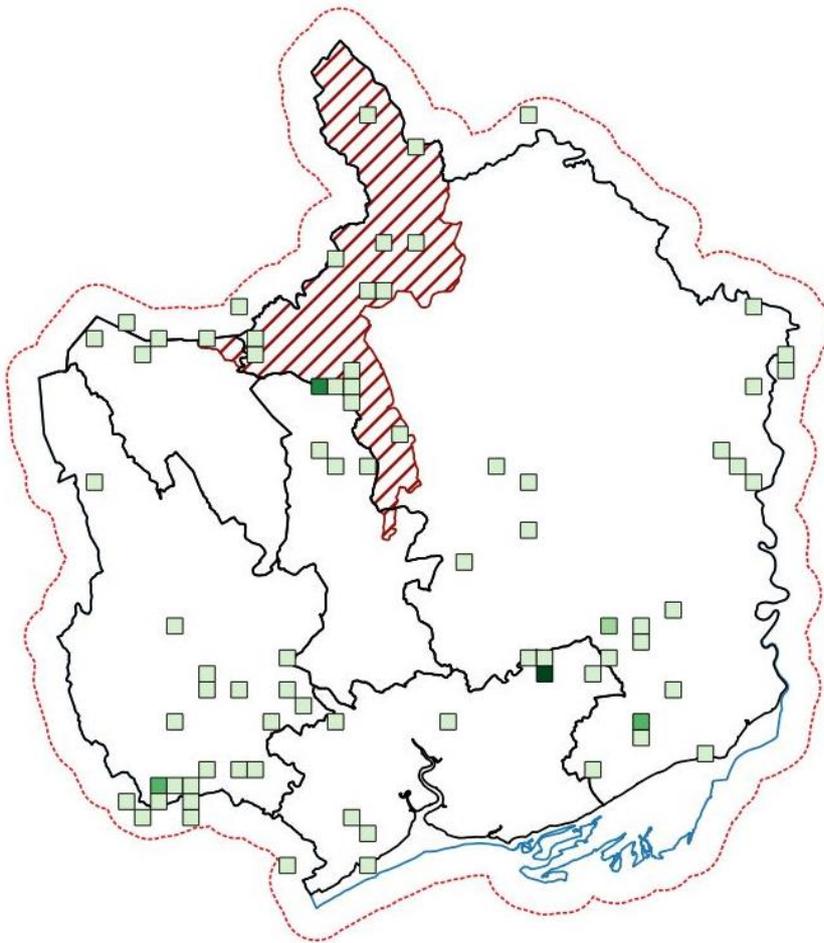
For Greater Gwent, only the population at Wentwood has recorded more than ten individuals.

**Greater Gwent range:** Distribution of Adder records across Greater Gwent is very fragmented. Hotspots of higher numbers of more recent records occur at just four locations: Wentwood, The Blorenge, Minnets and Wernddu. Although there are scattered recent records in several other locations, the numbers of records are much lower – usually less than five records throughout the study period.

Note that the patchy distribution may also be a result of recording effort and the cryptic nature of Adders. Only Wentwood and Wernddu/Caerphilly Common appear to have been subject to regular recording.

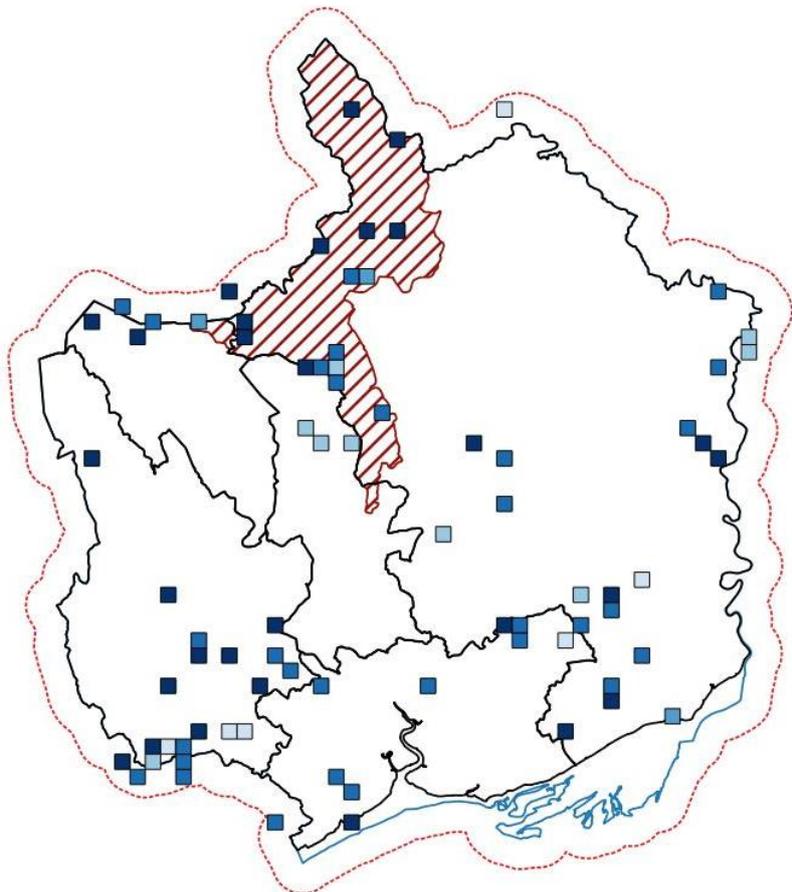


Gary Welsby

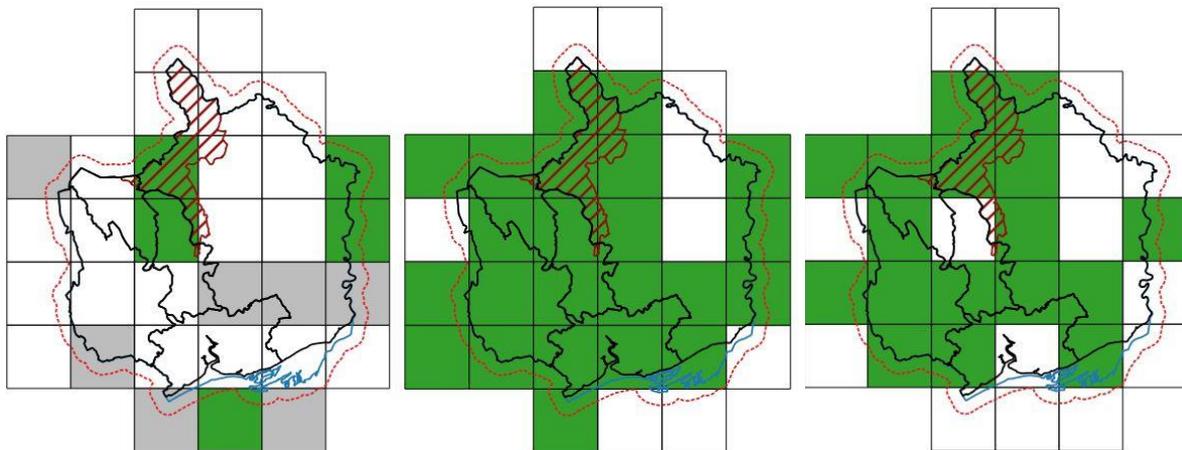


*Density of Adder records  
(max density 27  
records/km<sup>2</sup>)*

*Adder records by date*



**Trends:** Although it is likely that Adders are under-recorded, it appears that the range of Adders in Greater Gwent is reducing: scattered areas have no recent records. Of more concern is that many of the sites where there are Adders have few records, and mostly of low numbers. Of 123 records where abundance was noted, just 16 (13%) were for more than 5 individuals. Of these, only one is within the most recent decade. The five NARRS squares within the study area recorded no Adders.



Adder presence (green) from the National Common Reptile Survey (1990).<sup>11</sup> Grey indicates surveyed squares where no records were found.

Adder presence (green) from 1970 to 2019, from local records centres and NBN Atlas.

Adder presence (green) from 2010 to 2019, from local records centres and NBN Atlas.

Comparison with the findings of the National Common Reptile Survey<sup>11</sup> shows an increase in Adder recording. The survey, carried out through questionnaires sent to local recorders in 1990, returned  $\leq 10$  records for VC35. There were positive records for just 5 hectads (16%) although one may be the result of records from the English side of the Severn Estuary. There are records within 23 (72%) hectads from the last 50 years, but just 17 (53%) having records from the most recent decade. This demonstrates that our recording of Adders has certainly improved. However, this should be treated with caution, as each hectad may only contain small numbers of records.

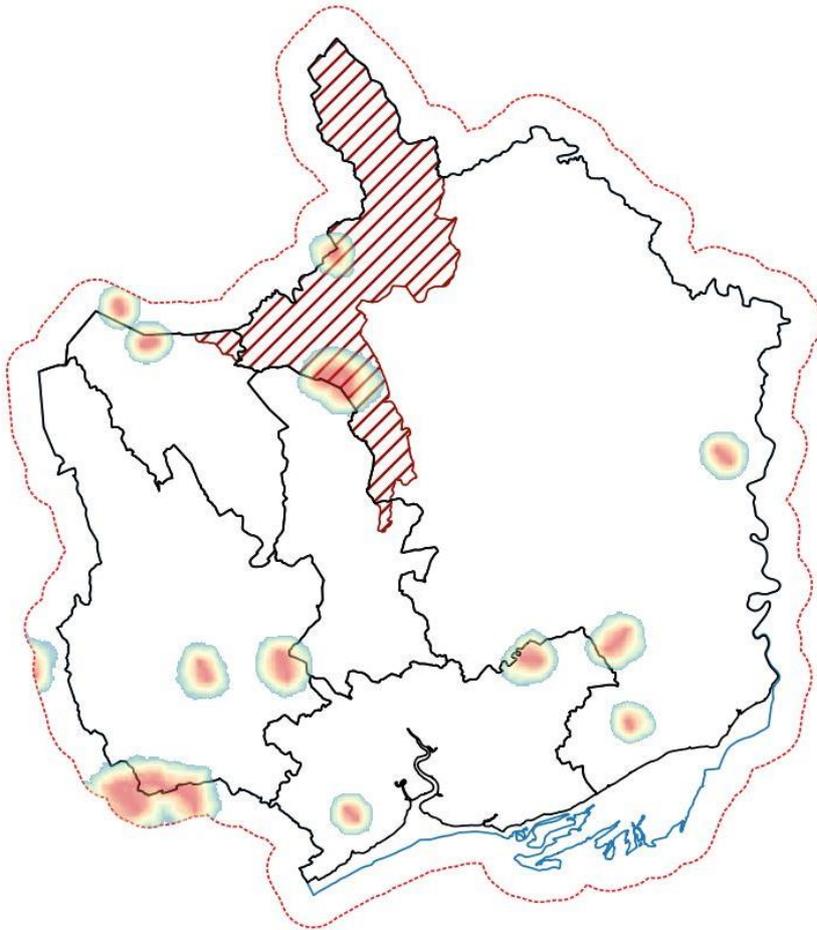
**Adder habitat patches:** The Amphibian and Reptile Trust have produced least-cost corridors around known Adder populations, giving 12 areas of focus within (or partly within) the study area. The Cilfynydd area is not included as it does not extend into Greater Gwent. Statistics for each are given below. Records without abundance are assumed to be single individuals.

Name	LA	Approximate area (ha)	Records (1970–2019)	Average abundance	Recent records (2010–2019)	Average abundance
Mynydd Llangynidr	BG/Powys (BBNP)	600	1	1	0	0
Rassau	BG	650	4	1.3	2	1
Sugarloaf	M (BBNP)	650	3	1	2	1
Bloreng	M/T (BBNP)	1700	28	1	1	1
Beacon Hill	M	750	2	1	1	1
Wentwood (west)	M/N	900	31	4.1	1	1
Wentwood (east)	M	1050	8	1.5	1	1
Minnetts	M	600	18	1.6	1*	1*
St Brides	N	550	2	1	0	0
Crosskeys	C	1100	2	1	1	1
Mynydd Islwyn	C	950	2	1	1	1
Wernddu <sup>+</sup>	C/Cardiff	4100	29	1.4	15	1.5

\*uncertain record

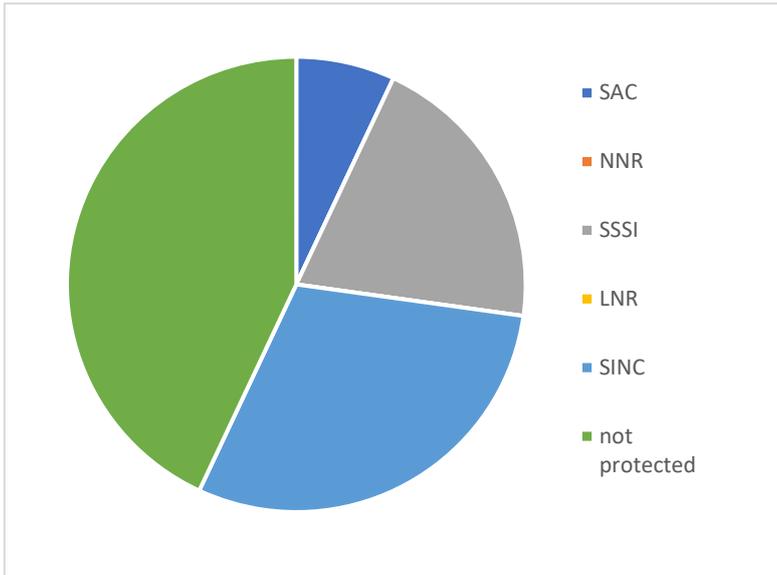
<sup>+</sup>Note that this area extends considerably beyond the study area, where there may be additional records.

*Least-cost corridors for  
Adder within the study area  
(courtesy of ARC)*

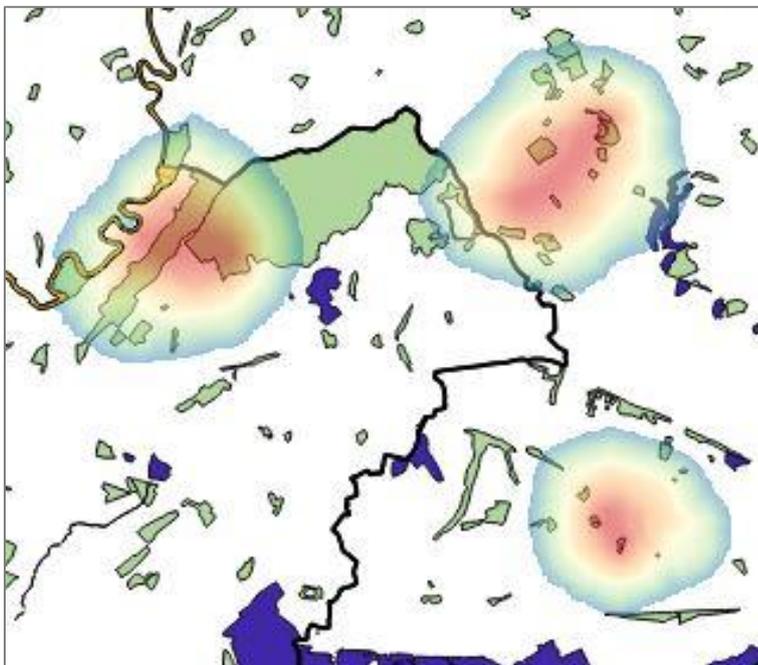


**Protection:** Around 57% of Adder records are from protected sites: the Usk Bat Sites and Sugarloaf Woodlands SACs, The Blorenge SSSI and parts of the Gwent Levels SSSIs, and many SINCs sites. It is important to note that these are unlikely to be designated for their Adder (or indeed any reptile interest). The ‘Wildlife Sites Guidelines’ suggest that any site supporting a ‘good’ population of Adders should be considered for designation.<sup>12</sup> However, measuring population is difficult and requires considerable survey effort.

When the focus areas are considered, it is apparent that very little of the Adder’s potential range is protected. The Blorenge, St Brides and Mynydd Llangynidr focus areas fall mostly within large SSSIs, but the remainder contain small areas of SINC habitats, as shown below.



*Adder records from protected sites*



*Protected sites within the Adder focus areas at Wentwood (east and west) and Minnetts. SSSIs are shown in blue, SINC sites shown in green.*

## Common (Viviparous) Lizard *Zootoca vivipara* (Jacquin, 1787)

**Protection:** Wildlife & Countryside Act (1981 as amended) Schedule 5(Section 9(5) only)

**Conservation status:** UK BAP Priority Species, Environment (Wales) Act Section 7 Species. Red List<sup>1</sup>: LEAST CONCERN (Europe)

**Data availability:** Moderate (417 records)

**Context:** Common Lizards were added to the UK BAP list in 2007 due to population declines,<sup>13</sup> although research on status and population trends appears limited. Bowles<sup>14</sup> reported that lizards were 'disappearing fast' from the lowlands of Scotland in the 1990s, suggesting that pesticide use may be a factor. In general terms, reptiles across Europe are threatened by habitat loss, invasive species, persecution and climate change,<sup>11</sup> and Common Lizards are unlikely to be an exception.



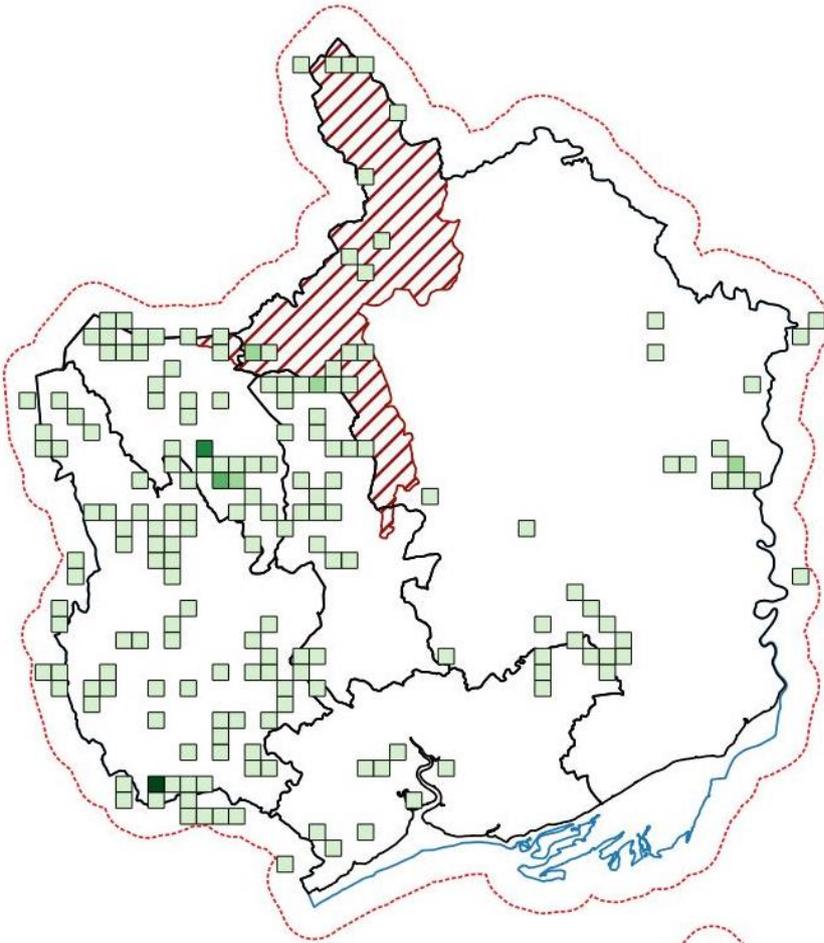
The latest NARRS results for 2007–2012<sup>7</sup> indicate an occupancy rate of 35% for Common Lizards across the UK, and 27% in the Wales and Central region.

**Outlook:** The outlook for Common Lizard in Greater Gwent is not clear.

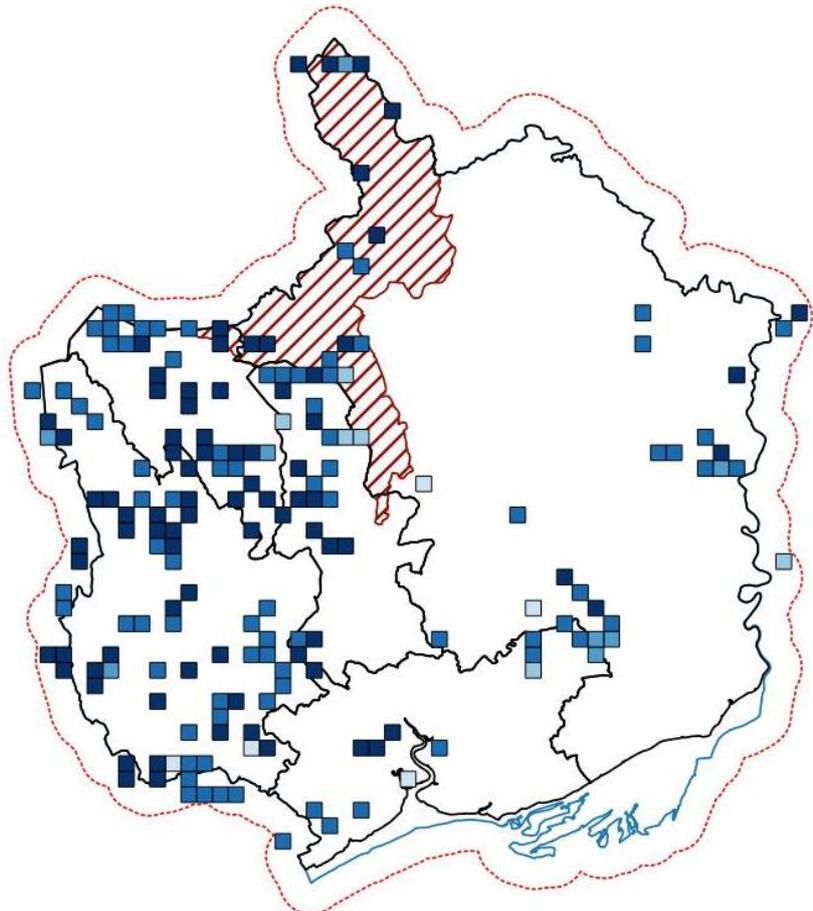
**Greater Gwent range:** Common Lizard records are mainly distributed across the north and west of the study area, in Caerphilly, Blaenau Gwent and northern Torfaen. Recording hotspots occur at Silent Valley SSSI/LNR, Hafod y Dafal, Caerphilly Mountain, with the Monmouthshire and Newport records loosely clustered around Beacon Hill and Wentwood. There are recent records for most areas.

It is not clear whether the lack of records in the east and south of the study area is due to lack of suitable habitat and actual absence of Common Lizards, or under recording.

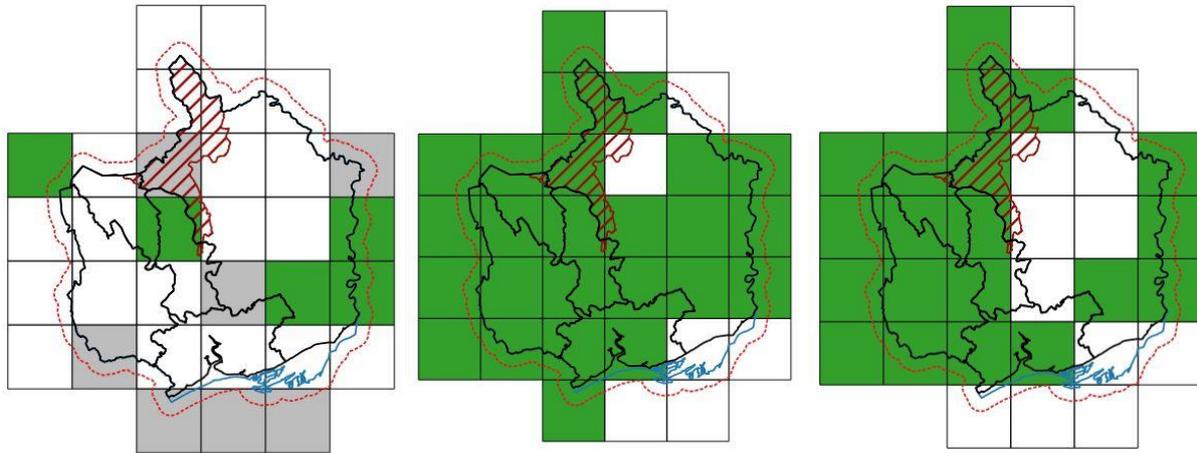
Density of Common Lizard records (max density 31 records/km<sup>2</sup>)



Common Lizard records by date



**Trends:** It is not possible to give trends for Common Lizards. Two of the five NARRS sites within the study area have recorded Common Lizards. A large number of records are recent: 42% of records are from the last decade, meaning that recording of lizards is increasing.

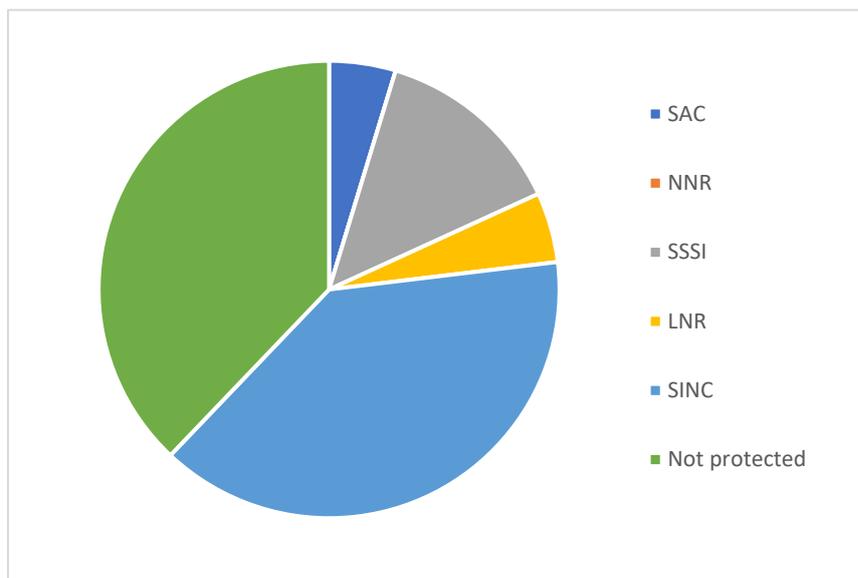


<p>Common Lizard presence (green) from the National Common Reptile Survey (1990).<sup>11</sup> Grey indicates surveyed squares where no records were found.</p>	<p>Common Lizard presence (green) from 1970 to 2019, from local records centres and NBN Atlas.</p>	<p>Common Lizard presence (green) from 2010 to 2019, from local records centres and NBN Atlas.</p>
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Comparison with the findings of the National Common Reptile Survey<sup>11</sup> shows a significant increase in Common Lizard recording. The survey, carried out through questionnaires sent to local recorders in 1990, returned  $\leq 10$  records for VC35. There were positive records for just 5 hectads (16%), whereas now there are records within 25 (78%) hectads from the last 50 years, with 20 (63%) having records from the most recent decade. This demonstrates a considerable increase in recording, although the recent absence from central Monmouthshire could be cause for concern. Further survey work would be needed to ascertain whether this is caused by reduced recording effort or loss of populations.

**Protection:** Around 62% of Common Lizard records are from protected sites: the Usk Bat Sites and Aberbargoed Grasslands SACs, The Blorenge and Silent Valley SSSIs, as well as LNRs in Blaenau Gwent and Torfaen and many SINC sites, particularly the large upland SINC sites. It is important to note that these are unlikely to be designated for their Common Lizard (or indeed any reptile interest). The 'Wildlife Sites Guidelines' suggest that any site supporting a 'good' population of Common Lizards should be considered for designation.<sup>12</sup> However, measuring population is difficult and requires considerable survey effort.

*Common Lizard records from protected sites*



## Common Toad *Bufo bufo* (Linnaeus, 1758)

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**Protection:** Wildlife & Countryside Act (1981 as amended) Schedule 5(Section 9(5) only)

**Conservation status:** UK BAP Priority Species, Environment (Wales) Act Section 7 Species. Red List<sup>1</sup>: LEAST CONCERN (Europe)

**Data availability:** Moderate (417 records)

**Context:** Despite being categorised as Least Concern in the European Red List<sup>1</sup>, Common Toads are experiencing serious declines in the UK. Declines can be dated back as far as post-war agricultural intensification<sup>15</sup> and are attributed to disease, climate change, invasive species, habitat change from loss, damage or management change, and traffic mortality.<sup>16</sup>



*Andy Karren*

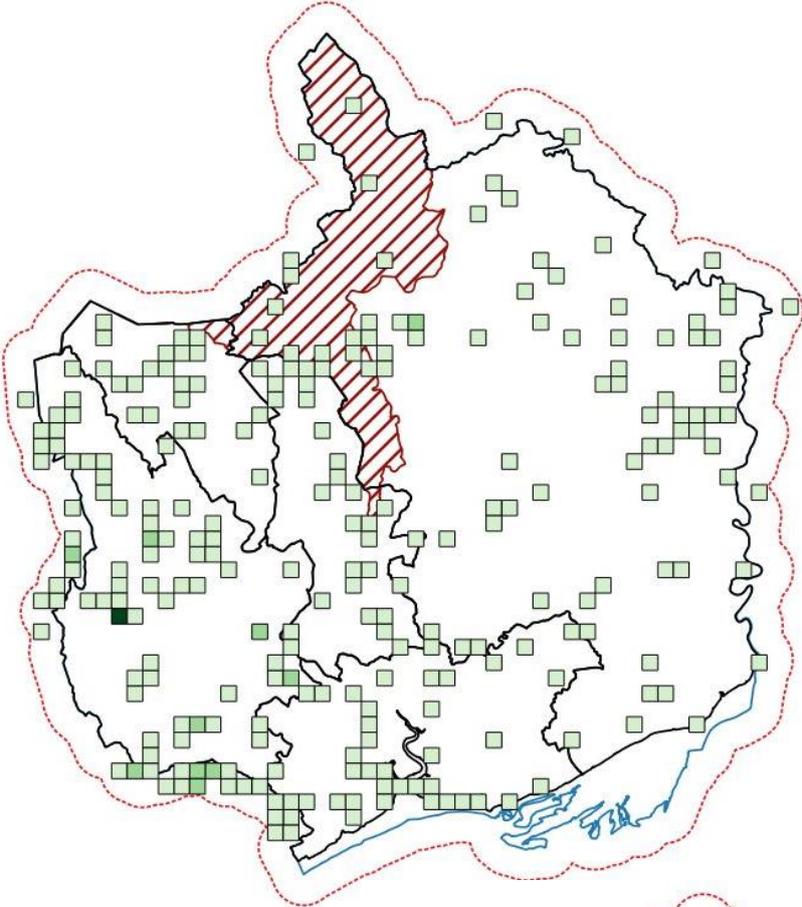
Recent research based on the numbers of toads at crossing patrols found that toad numbers had declined every decade since the 1980s, albeit to a lesser extent in western regions. The authors argue that if this decline were to continue, the population would reduce by 30% in a decade, justifying a 'Vulnerable' classification using the International Union for Conservation of Nature (IUCN) criteria.<sup>17</sup>

The latest NARRS results for 2007–2012<sup>7</sup> indicate an occupancy rate of 33% for Common Toads across the UK, and 35% in the Wales and Central region.

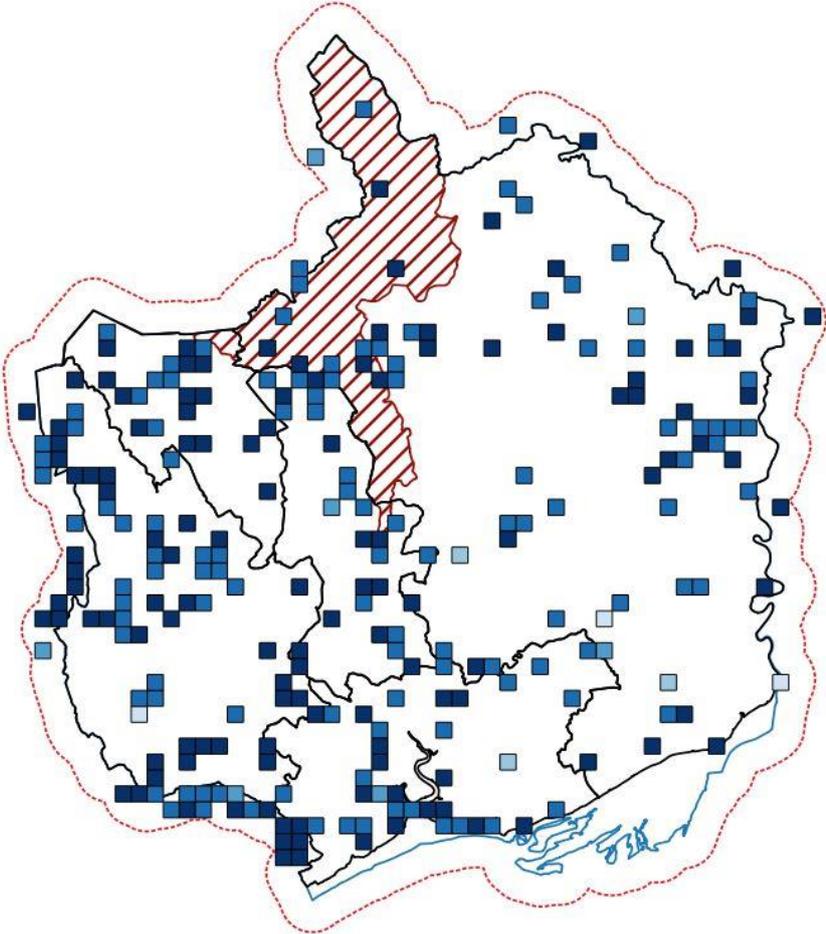
**Outlook:** The outlook for Common Toad is not clear.

**Greater Gwent range:** Common Toad records are quite thinly spread for a species that is considered common and widespread, although most records are relatively recent. There appear to be fewer records in central and south Monmouthshire, east Newport and south Caerphilly. The hotspot at Tredomen is the result of increased survey effort due to roadworks, otherwise record distribution may be a factor of either habitat suitability or recording effort or both.

Density of Common Toad records (max density 44 records/km<sup>2</sup>)



Common Toad records by date



**Trends:** It is not possible to give trends for Common Toads. Two of the thirteen NARRS sites within the study area have recorded Common Toads. Numbers of toads at crossing patrols can be a good indicator of population trends<sup>17</sup>, but there is only one active patrol in Greater Gwent, with no associated records (see below). The UK trend is one of long-term and continued decline.<sup>1</sup>

**Road mortality:** One conservation initiative is the Toad Crossing Patrol, managed by Froglife, where volunteers help toads to cross roads safely during the breeding season. There are three toad crossing patrols registered with Froglife in Greater Gwent, at Llanelly Hill (active), Usk and Caerleon (both inactive), and one just outside the study, at Lisvane Reservoir (inactive). Apart from Lisvane, none of the crossings have any records of numbers of toads.

Analysis of records where road crossings or road mortalities are mentioned gave three hotspots:

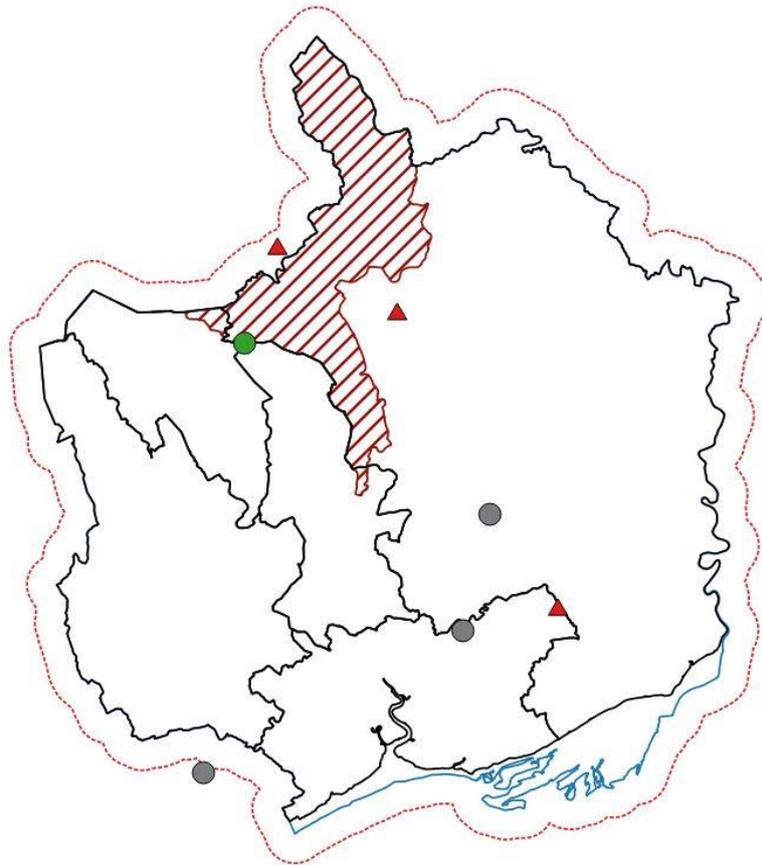
- Llangenny: 2 records in two consecutive years (2007–2008), one for approximately 20 casualties.
- Wentwood Reservoir: 7 records of toad counts from 1972–1997, varying from 23 to 400. Unclear how many were casualties.
- Skirrid Fach: 9 records of single casualties from 2014–2016.

It is possible that these records are too dated to direct any mitigation actions. Populations may have already been lost or adapted to use other routes or other terrestrial habitats. If recording were increased, more hotspots could potentially be identified.

It is important to note that although Toad Crossing Patrols helped over 100,000 toads in 2019<sup>18</sup>, numbers of toads at many patrolled crossings are still declining.<sup>17</sup> This is thought to be because toad crossing patrols generally only operate in spring when toads are migrating to ponds and miss the less predictable dispersal of adults and juveniles in the summer. In addition, other factors such as habitat management may also be affecting individual populations.<sup>16</sup>

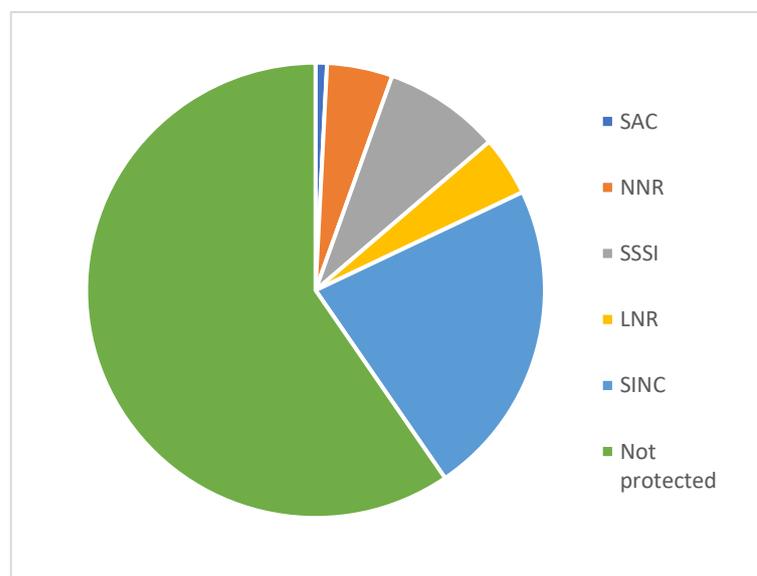
*Toad Patrol Crossings (data from Froglife<sup>19</sup>) and road crossing hotspots*

- Active toad patrol
- Inactive toad patrol
- ▲ Toad crossing record hotspot



**Protection:** Around 40% of Common Toad records are from protected sites: Newport Wetlands NNR, and the Gwent Levels SSSIs, and Beaufort Ponds LNR. Records from SINC are small numbers of records from a large number of different sites. There are at least 60 pond SINC, some of which have toad records, such as Pen y Fan Pond, Tredomen Pond and Coity Pond. The ‘Wildlife Sites Guidelines’ suggest that any site supporting an ‘exceptional’ (>500 adults) population of Common Toads should be considered for designation, and toads can also be a contributing factor where ponds are designated for their amphibian assemblages.<sup>12</sup> It is important to note that toads, like other amphibians, require terrestrial habitat for foraging and hibernation, in addition to their breeding pond.

*Common Toad records from protected sites*



## Grass Snake *Natrix helvetica* (Lacépède, 1789)

**Protection:** Wildlife & Countryside Act (1981 as amended) Schedule 5 (Section 9(5) only)

**Conservation status:** UK BAP Priority Species, Environment (Wales) Act Section 7 Species. Red List<sup>1</sup>: LEAST CONCERN (Europe)

**Data availability:** Moderate (372 records)

**Context:** Grass snakes were added to the UK BAP list in 2007, due to population declines<sup>13</sup>, although research on status and populations trends appears limited. Work by Reading et al.<sup>20</sup> has shown that, in contrast to many other species, the Grass Snake population at a UK site remained stable over a long period of time, but this cannot be taken to be representative of the UK population.



Pete Hill

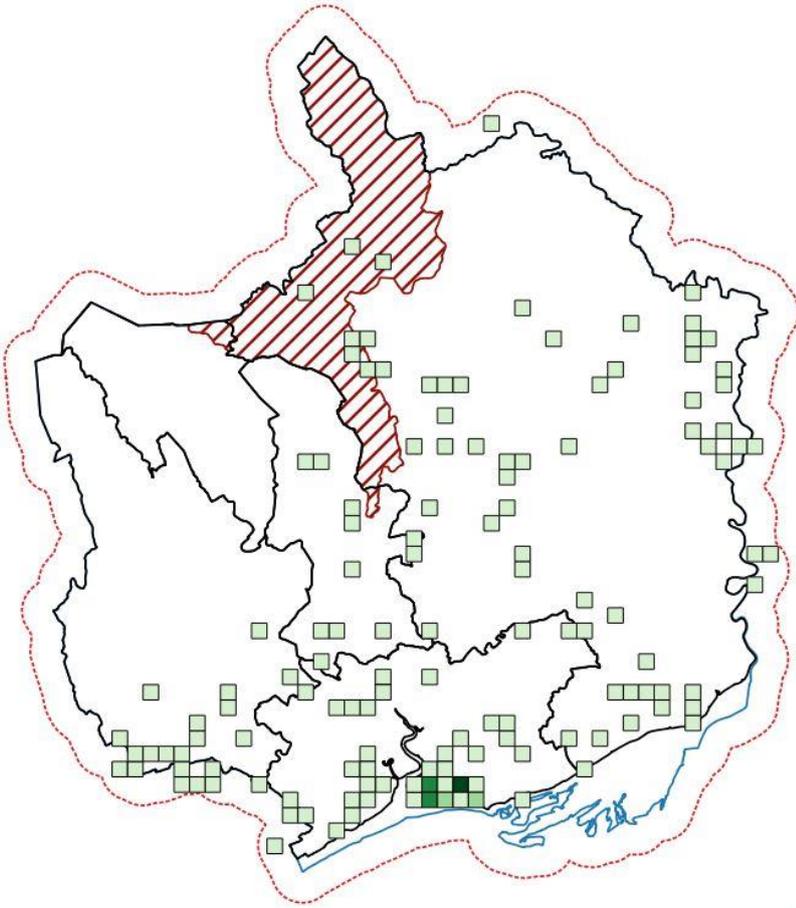
Grass Snakes are threatened due to the loss of their pond and wetland habitats and declines in their amphibian prey species. Wetlands are declining globally at an alarming rate<sup>21</sup> as they are threatened by drainage, nutrient enrichment, development, invasive species and climate change. Changes in farming practices are also leading to declines in nest sites, as Grass Snakes prefer man-made compost and manure heaps, particularly in colder climates. Loss of these warm nest sites can lead to decreased hatching success.<sup>22</sup>

The latest NARRS results for 2007–2012<sup>7</sup> indicate an occupancy rate of 22% for Grass Snakes across the UK, and 13% in the Wales and Central region. In 2017, genetic research on Grass Snakes across Europe led to the *Natrix natrix helvetica* subspecies being recognised as a species in its own right: *Natrix helvetica*.<sup>6</sup>

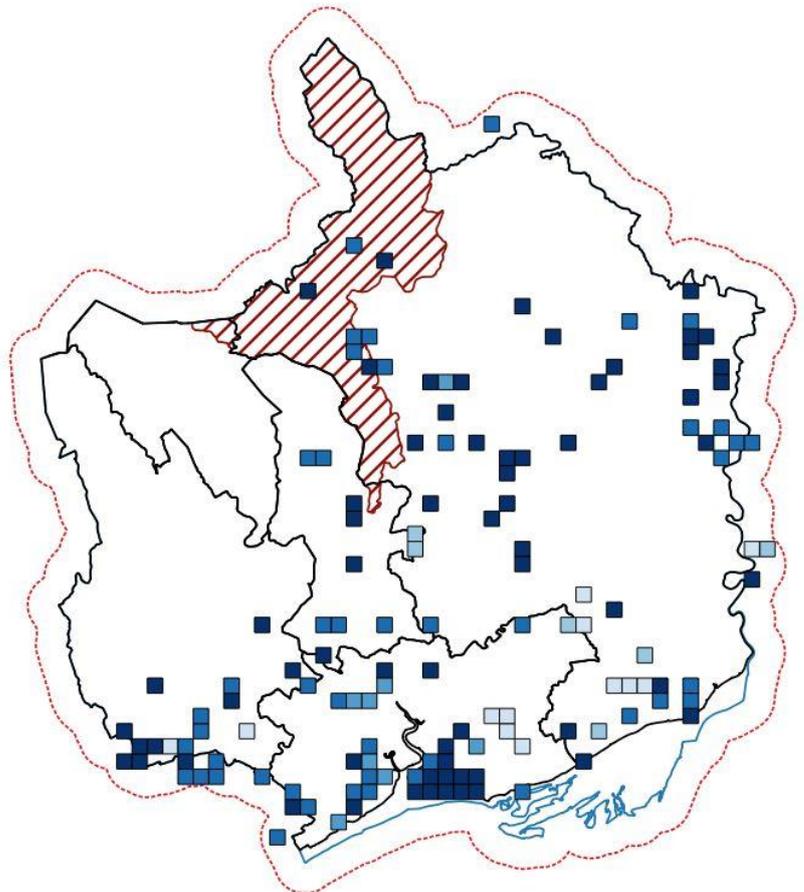
**Outlook:** The outlook for Grass Snakes in Greater Gwent is unlikely to be positive, due to the threats to their habitat and prey. As wetlands continue to decline in both area and quality, and as impacts from climate change increase, continued losses are likely.

**Greater Gwent range:** Grass Snake records are concentrated in the south and east of the study area, closely associated with the Gwent Levels and main watercourse. The clear recording hotspot is at Newport Wetlands NNR, with much fewer records elsewhere, although there are small concentrations of records at Magor Marsh SSSI, Celtic Lakes, Caerphilly Common, and for some reason, Caerleon Comprehensive School. This distribution shows the Grass Snake's habitat preference for lowland wetlands, ponds and watercourses, but is also likely to be due to under recording in places.

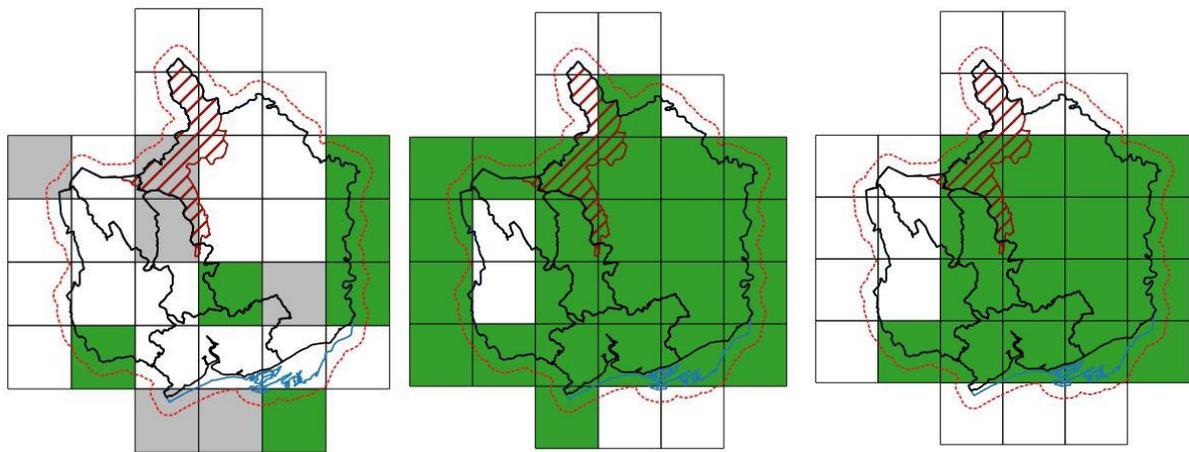
Density of Grass Snake records (max density 44 records/km<sup>2</sup>)



Grass Snake records by date



**Trends:** Although it is not possible to give a reliable trend for Grass Snake populations, recording of Grass Snakes appears to be increasing. Comparison with the findings of the National Common Reptile Survey<sup>11</sup> shows a significant increase in Grass Snake recording. The survey, carried out through questionnaires sent to local recorders in 1990, returned  $\leq 10$  records for VC35. There were positive records for just 6 hectads (9%), although one of these is likely to refer to records on the English side of the Severn Estuary. Now there are records within 24 (75%) hectads from the last 50 years, and 17 (53%) have records from the most recent decade. Losses from the west and north are more likely to be due to very small numbers of records from these areas over the study period, as there is very little potential Grass Snake habitat in these, mainly upland, areas.



Grass Snake presence (green) from the National Common Reptile Survey (1990).<sup>23</sup> Grey indicates surveyed squares where no records were found.

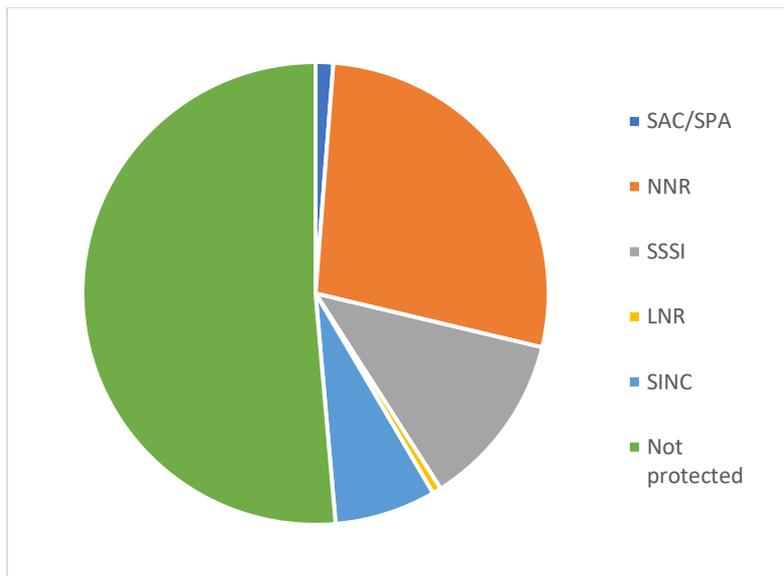
Grass Snake presence (green) from 1970 to 2019, from local records centres and NBN Atlas.

Grass Snake presence (green) from 2010 to 2019, from local records centres and NBN Atlas.

**Protection:** Just under 49% of Grass Snake records are from protected sites, and most of these (41% of Greater Gwent records) are from the Newport Wetlands NNR and Gwent Levels, showing the importance of this wetland landscape for Grass Snakes.

The 'Wildlife Sites Guidelines' suggest that any site supporting a 'good' population of Grass Snakes should be considered for designation.<sup>12</sup> Grass Snakes can also be a contributing factor in sites designated for their reptile diversity. However, measuring population is difficult and requires considerable survey effort.

*Grass Snake records from protected sites*



## Great Crested Newt *Triturus cristatus* (Laurenti, 1768)

**Protection:** Conservation of Habitats & Species Regulations (2017) Schedule 2, Wildlife & Countryside Act (1981, as amended) Schedule 5

**Conservation status:** LEAST CONCERN (global)<sup>24</sup>  
UKBAP Priority Species, Wales Section 7 Priority Species



Andy Karran

**Data availability:** Poor (522 records)

**Context:** It is difficult to quantify the decline of Great Crested Newts – there is a lack of historic records, so little is known of previous population levels or range. A 50% loss was estimated in the 1960s, and the losses continued at around 2% every five years.<sup>25</sup> These losses have led to the Great Crested Newts being designated as a European Protected Species and one of the first tranche of UK BAP species.

In Wales, a significant body of work has been recently undertaken by Natural Resources Wales, Amphibian and Reptile Conservation and the Welsh LERCs to map and quantify the Welsh Great Crested Newt Population. The Welsh population is now estimated at 3,271 occupied ponds,<sup>26</sup> spread along the eastern side of Wales and Anglesey. The stronghold is in north-east Wales, where several SACs are designated for their significant Great Crested Newt populations.

The greatest threat to Great Crested Newts is the ongoing deterioration and loss of breeding ponds, caused by both human action and natural succession. This decline is caused by loss of both terrestrial and aquatic habitats, degradation and isolation, inappropriate management, agricultural intensification, and the introduction of fish, waterfowl and invasive non-native species.<sup>25</sup> NARRS data for Wales and Central England estimates that just 24.75% of ponds are high quality habitat (HSI>0.7),<sup>7</sup> equivalent to just 810 ponds in Wales.

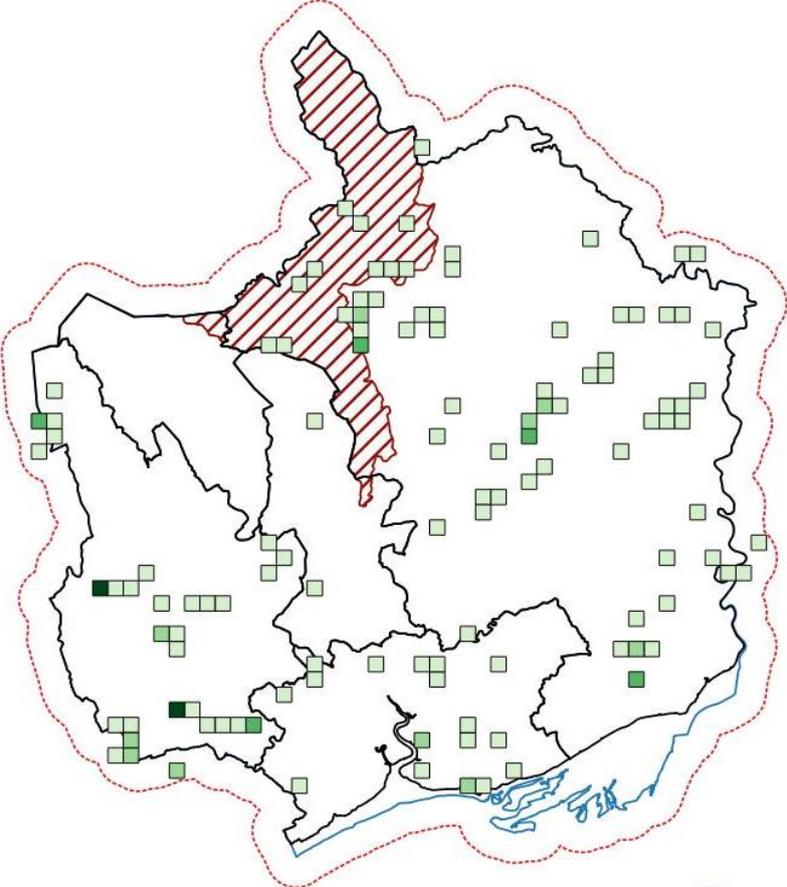
**Outlook:** Currently the UK population range and population is thought to be stable, although the area and quality of suitable habitat is decreasing and unable to maintain the population.<sup>27</sup> In Wales, the population is thought to be declining, with insufficient data regarding habitat.<sup>28</sup> Recording and monitoring are improving with the establishment of the Online Great Crested Newt Monitoring Database (managed by Cofnod) and improvements in survey techniques, such as the use of eDNA.

In Greater Gwent, more than 200 high quality ponds would need to be created to mitigate for historic losses.<sup>29</sup> This is a challenging figure, given the increasing levels of development and inavailability of suitable sites for pond creation. Fletcher et al. (2005)<sup>29</sup> suggest that an integrated, cross-boundary or regional approach would be required to restore and maintain Great Crested Newt populations.

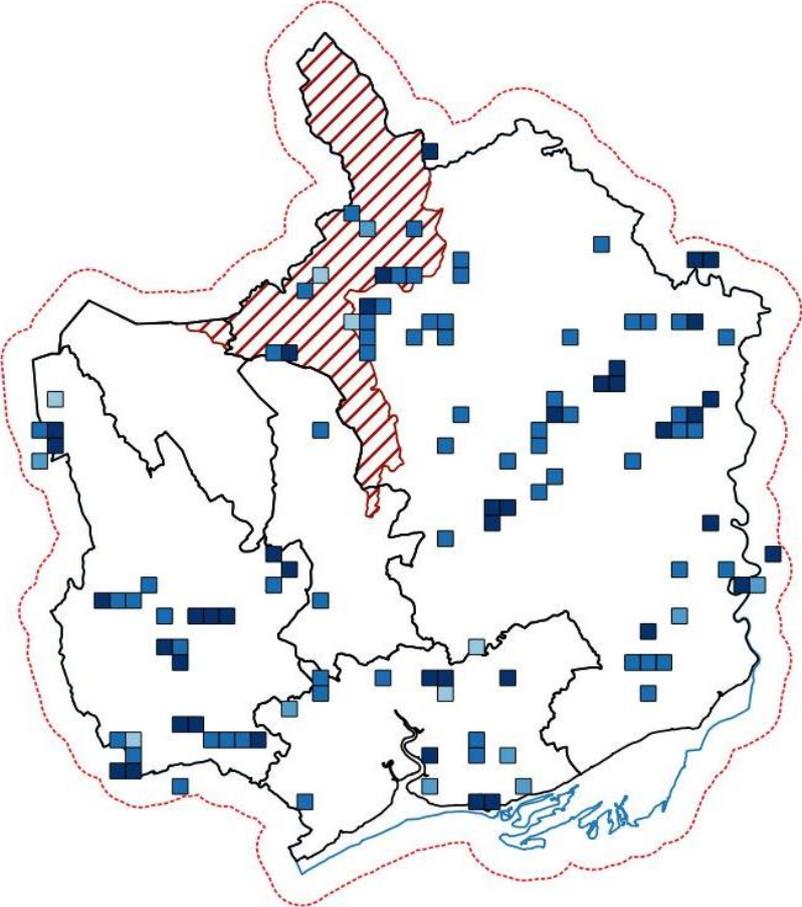
**Greater Gwent range:** Great Crested Newts are thinly spread across Greater Gwent and largely limited to lowland areas. Hotspots occur at Rudry, Tredomen, Merthyr Common, Raglan, Usk, Llanfoist and Caerwent. The patchiness of recent records indicates that recording has probably been historically sporadic: Fletcher et al. (2005)<sup>29</sup> suggest that the region is very under-recorded, and modelling by French et al. (2014)<sup>26</sup> indicates that there are additional areas of suitable habitat, such as the Heads of the Valleys, where there are very few, if any, records.

Modelling work carried out by Natural Resources Wales and ARC shows discrete pond clusters across Greater Gwent, with poor connectivity between clusters. The model shows cost-weighted buffers around recorded sites, which were then further analysed for their potential for the creation of new ponds (shown below). It is intended that these models be used in forward planning, to protect Great Crested Newt sites and inform local conservation action.

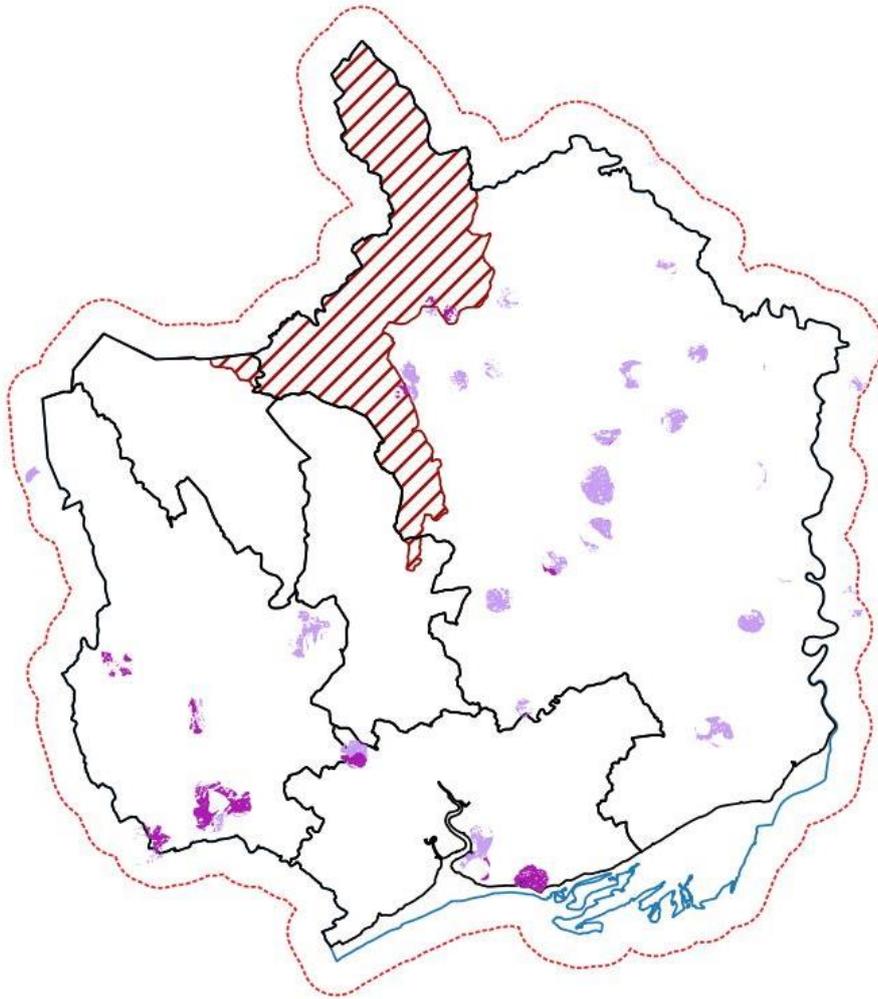
*Distribution of Great Crested Newt records across Greater Gwent (maximum 33/km<sup>2</sup>)*



*Records of Great Crested Newt by decade*



Potential pond creation areas within cost-weighted buffers (~1000m) of existing Great Crested Newt sites (from Fletcher et al.,<sup>29</sup> GIS data provided by ARC and NRW<sup>30</sup>)



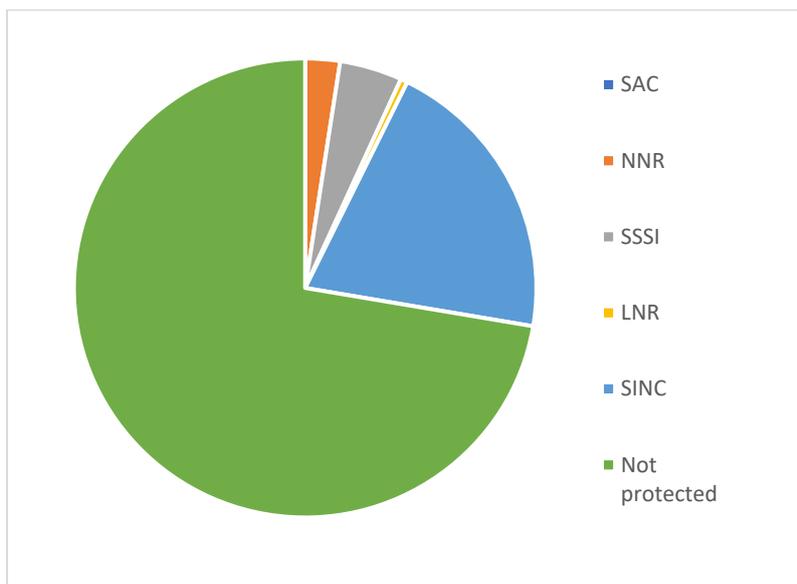
High Priority  
Low Priority

**Population trends:** There is not enough data to determine a local population trend for Great Crested Newt, although it is probably declining in line with national trends.<sup>28</sup> Data from the Online Great Crested Newt Monitoring Database for the ponds in North Wales demonstrates that it is possible to show population changes at the site level, but also that the data available is hugely variable in both quality and quantity.<sup>25</sup>

**Protection:** 28% of records come from protected sites, with SINC providing the most number of records. Many ponds have been designated as SINC, with the presence of Great Crested Newt being the main reason or a contributing factor. As Great Crested Newts and their breeding sites are highly protected through the Conservation of Habitats & Species Regulations (2017), designation as a SINC or above can be used as a vehicle to engage landowners and promote positive management.

There are several records that meet the SINC criteria<sup>12</sup> of ten or more adults that are not protected, and these sites should be a priority for further investigation. Note that designation must also include terrestrial habitat, and that a landscape approach, encompassing several ponds, may be more appropriate in maintaining a viable population.

*Great Crested Newt records from protected sites*



## Slow-Worm *Anguis fragilis* (Linnaeus, 1758)

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**Protection:** Wildlife & Countryside Act (1981 as amended) Schedule 5 (Section 9(5) only)

**Conservation Status:** UK BAP Priority Species, Environment (Wales) Act Section 7 Species. Red List<sup>1</sup>: LEAST CONCERN (Europe)

**Data availability:** Good (713 records)

**Context:** Slow Worms were added to the UK BAP list in 2007, due to population declines,<sup>13</sup> although research on status and populations trends appears

limited. Work carried out in England in 2004 concluded that the status of Slow Worms was 'not favourable', although long-term declines appeared to have abated.<sup>10</sup> Slow Worms are frequently associated with grasslands, gardens<sup>11</sup> and brownfield sites,<sup>10</sup> and so are often threatened by development.

The latest NARRS results for 2007–2012<sup>7</sup> indicate an occupancy rate of 22% for Slow Worms across the UK, and 11% in the Wales and Central region.

**Outlook:** The outlook for Slow Worms in Greater Gwent is not clear. They are likely to continue to be negatively affected by habitat loss, especially from development, and current mitigation methods, such as translocation, do not appear to be compensating for this loss.<sup>31</sup> Recording of Slow Worms has increased significantly over the study period, which can only be positive for their future conservation.

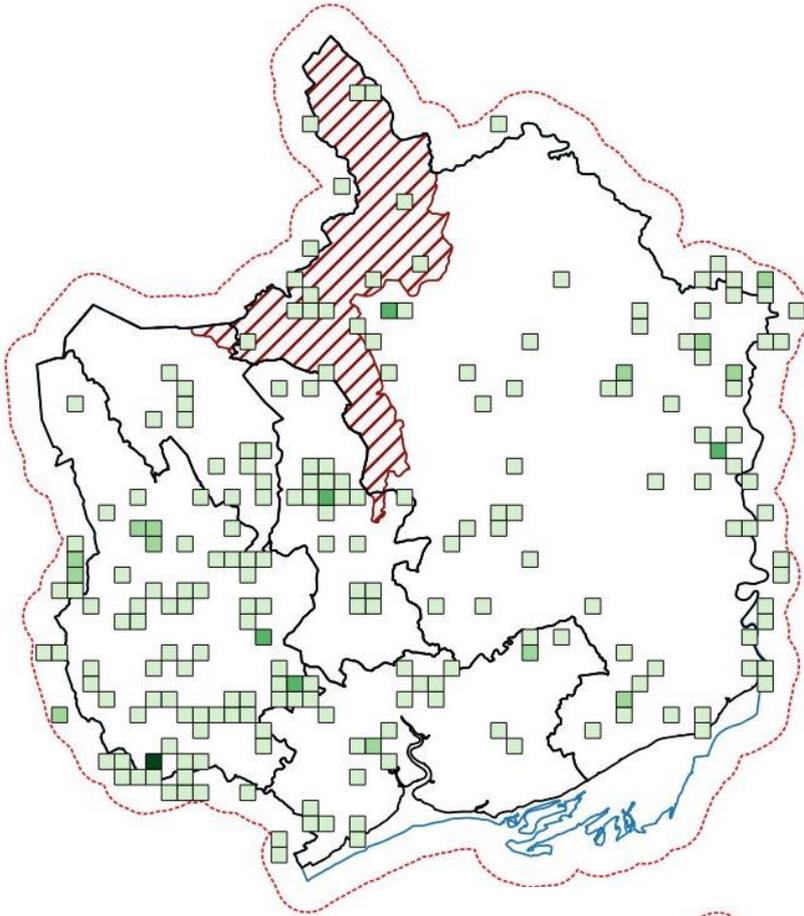
**Greater Gwent range:** Slow Worm records are widely distributed across the study area, with fewer records in central and south Monmouthshire and eastern Newport. Recording hotspots occur at Abergavenny and Caerphilly Common (both, possibly, the result of development surveys), as well as Snatchwood, Gaer Fort, Cwmcarn, Moriah Hill and Beacon Hill.

It is not clear whether the study's lack of records for parts of Monmouthshire and Newport is due to lack of suitable habitat and actual absence of Slow Worms or under recording.

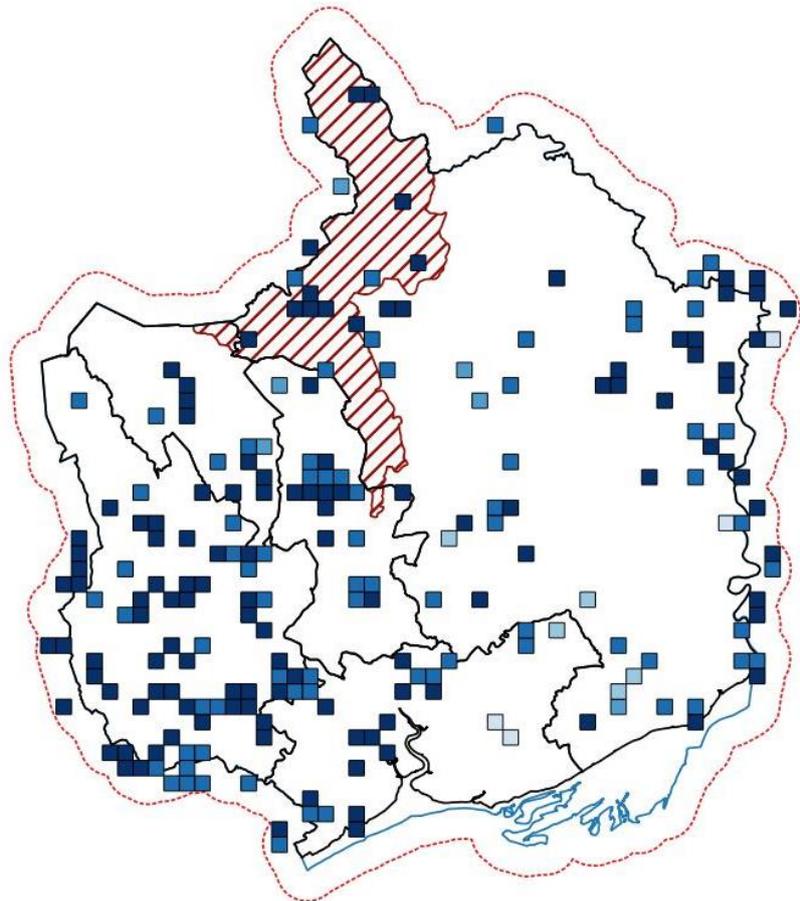


*Andy Karran*

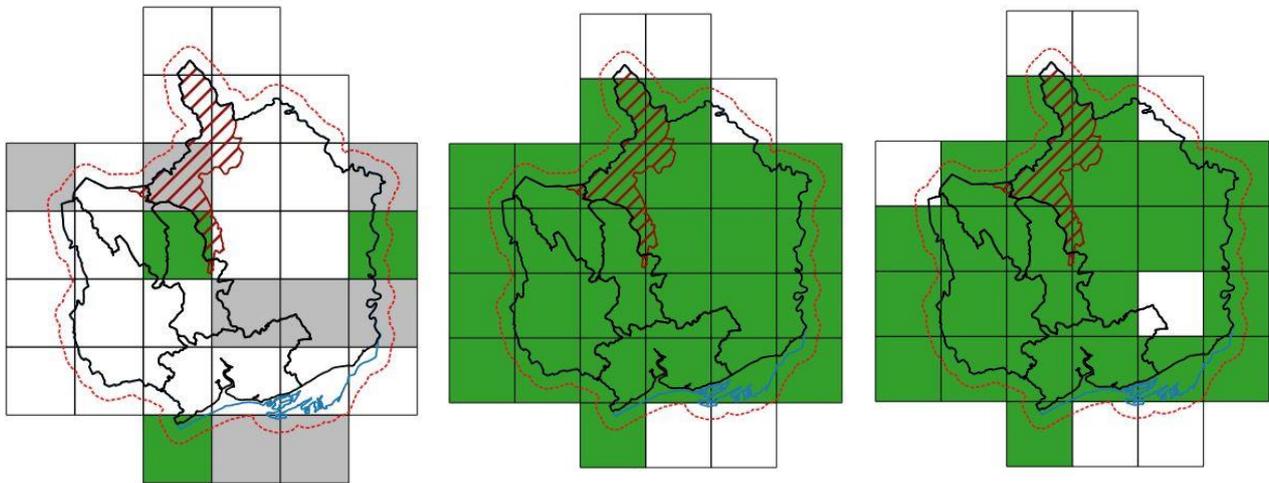
Density of Slow Worm records  
(max density 35 records/km<sup>2</sup>)



Slow Worm records by date



**Trends:** Although it is not possible to give a reliable trend for Slow Worms, recording of Slow Worms is certainly increasing. Almost half (49%) of Slow Worm records within the study area are from the last decade.



Slow Worm presence (green) from the National Common Reptile Survey (1990).<sup>11</sup> Grey indicates surveyed squares where no records were found.

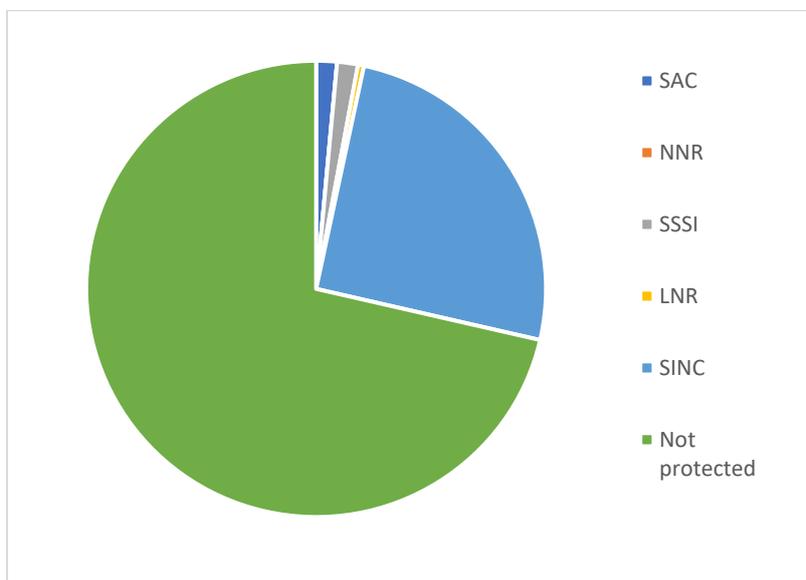
Slow Worm presence (green) from 1970 to 2019, from local records centres and NBN Atlas.

Slow Worm presence (green) from 2010 to 2019, from local records centres and NBN Atlas.

Comparison with the findings of the National Common Reptile Survey<sup>11</sup> shows a significant increase in Slow Worm recording. The survey, carried out through questionnaires sent to local recorders in 1990, returned  $\leq 10$  records for VC35. There were positive records for just 3 hectads (9%), whereas now there are records within 29 (91%) hectads from the last 50 years, and 27 (84%) have records from the most recent decade. This remarkable increase can be attributed to improvements in our understanding of Slow Worm ecology (i.e. looking in the right places) and increased recording effort, as well as the possibility of range and population increase.

**Protection:** Only 29% of Slow Worm records are from protected sites, and most of these are from SINCs, with many records from Gaer Fort, Beacon Hill and Caerphilly Common. This is indicative of the fact that Slow Worms are often found in habitats that are less likely to be protected (75 records mention 'garden' in the comments) and that many of the Slow Worm records come from development projects, which are unlikely to be on protected sites. It is important to note that protected sites are unlikely to be designated for their Slow Worm interest (or indeed any reptile interest). The 'Wildlife Sites Guidelines' suggest that any site supporting a 'good' population of Slow Worms ('exceptional' in Monmouthshire) should be considered for designation.<sup>12,32</sup> Slow Worms can also be a contributing factor in sites designated for their reptile diversity. However, measuring population is difficult and requires considerable survey effort.

*Slow Worm records from protected sites*



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