

A358 Taunton to Southfields Dualling Reptile Technical Report

PCF STAGE 2

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Table of contents

Executive summary	
1. Introduction	2
1.1. Background	2
1.2. Scheme proposal	4
1.3. Purpose of the report	5
1.4. Scope of Report	6
1.5. Legislation	6
1.6. Status of reptiles at a national level	8
1.7. Status of reptiles at a county level	8
1.8. Reptile ecology	8
2. Methodology	10
2.1. Desk study	10
2.2. Habitat assessment	10
2.3. Field survey	10
2.4. Site status assessment	12
2.5. Survey constraints	12
3. Results	15
3.1. Desk study	15
3.2. Habitat assessment	15
3.4. Field survey	23
3.5. Valuation	26
4. Conclusion	27
Appendices	28

Figures

Figure 1:1: A358 Taunton to Southfields existing road layout	2
Figure 1:2 Route options presented at the public consultations	4
Figure 1:3 Pink Modified option	5
Figure 3:1 : R1 habitat example	16
Figure 3:2 : R2 habitat example	16
Figure 3:3 : R9 habitat example	17
Figure 3:4 : R11 habitat example	18
Figure 3:5 : R12 habitat example	19
Figure 3:6 : R13 habitat example	19
Figure 3:7 : R14 habitat example	20
Figure 3:8 : R15 habitat example	20
Figure 3:9 : R16 habitat example	21
Figure 3:10 : R17 habitat example	22
Figure 3:11 : R18 habitat example	22
Figure 3:12 : R19 habitat example	23

Tables

Table 2:1 : Reptile population size categories	12
Table 2:2 Reptile site summary	13
Table 3:1 Reptile survey results by species and survey area – within 100m of the scheme	25

Executive summary

The proposed A358 Taunton to Southfields Dualling scheme (hereafter referred to as 'the scheme') strives to provide a dual carriageway along the length of the A358 between Taunton and Ilminster in Somerset, connecting the A303 at Ilminster to the M5 motorway to the north. The scheme would include grade separated junctions, with the purpose of providing a high-quality free flow journey for those using the route, and the removal of at-grade junctions and direct accesses.

All potentially suitable reptile habitats, at the time along the three route options under consideration, were identified during the desk study. Following this Mott MacDonald Sweco Joint Venture ecologists undertook an extended Phase 1 habitat survey in 2016 and further assessed the sites already identified for reptile suitability. Further surveys for common reptiles were recommended to determine whether these sites had the appropriate habitat structure to support reptile populations.

Nineteen sites were identified as offering suitable habitat with potential to support common reptile species. These sites were subject to population surveys undertaken between April and October 2017, complete survey output equates to 20 checks in optimum conditions, partial survey equates to 19 or less surveys at one site. Surveys were completed on nine sites within 100m of the preferred route option. Two sites were partially surveyed. The reptile presence or absence surveys identified the presence of reptiles at seven of the nine fully surveyed sites and at both partially surveyed sites.

Five of the survey sites were identified as having good reptile populations. Slow worms were found regularly along the scheme and occasional records of grass snakes. No evidence of common lizards or adders were found during the presence or absence surveys.

At the time of writing, the project is still within the design phase, therefore, the full extent of potential impacts of the scheme on reptile populations is yet to be confirmed. Impacts and mitigation to alleviate any potential impacts will be detailed within the Biodiversity chapter of the scheme Environmental Statement, when published.

1. Introduction

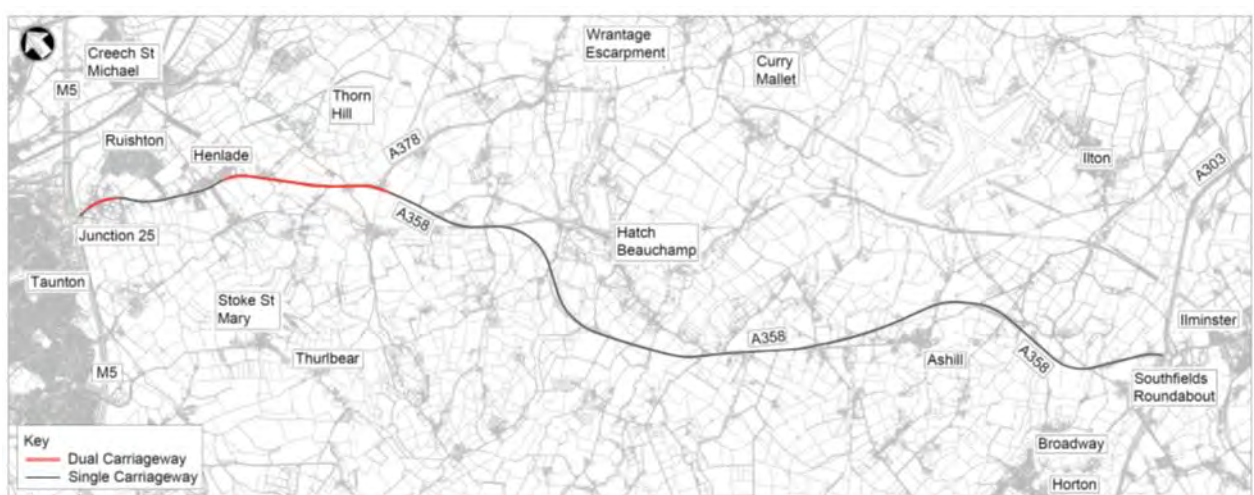
1.1. Background

1.1.1. The A303 / A358 corridor is a vital connection between the south-west, London and the south-east. Due to the population density, employment opportunities, urban concentrations and tourist attraction of the South West the A303 / A30 / A358 corridor experiences a wide range of traffic flows which lead directly to severe and regular instances of congestion and delay.

1.1.2. The A303 / A30 is part of the strategic road network (SRN) and together with the A358 forms a key strategic link between the South West Peninsular (SWP) and the rest of the south, south-east and London. Although it is dualled over much of its length there are several unimproved single carriageway sections between the M3 motorway at Basingstoke and the M5 at Taunton and Exeter which cause congestion, especially during summer weekends.

1.1.3. The existing A358 between Taunton and Southfields Roundabout is predominantly single carriageway with a short (1.1 miles) dual carriageway section in the vicinity of Thornfalcon and a 3 lane (2+1) section (0.3 miles) immediately to the south of that. It has many side roads and private accesses directly onto it. The national speed limit applies between Southfields and Henlade where it reduces to 30mph; the speed limit increases to 40mph north of Henlade on the approach to M5 Junction 25. A plan showing the existing route between Taunton and Southfields is provided in Figure 1:1

Figure 1:1: A358 Taunton to Southfields existing road layout

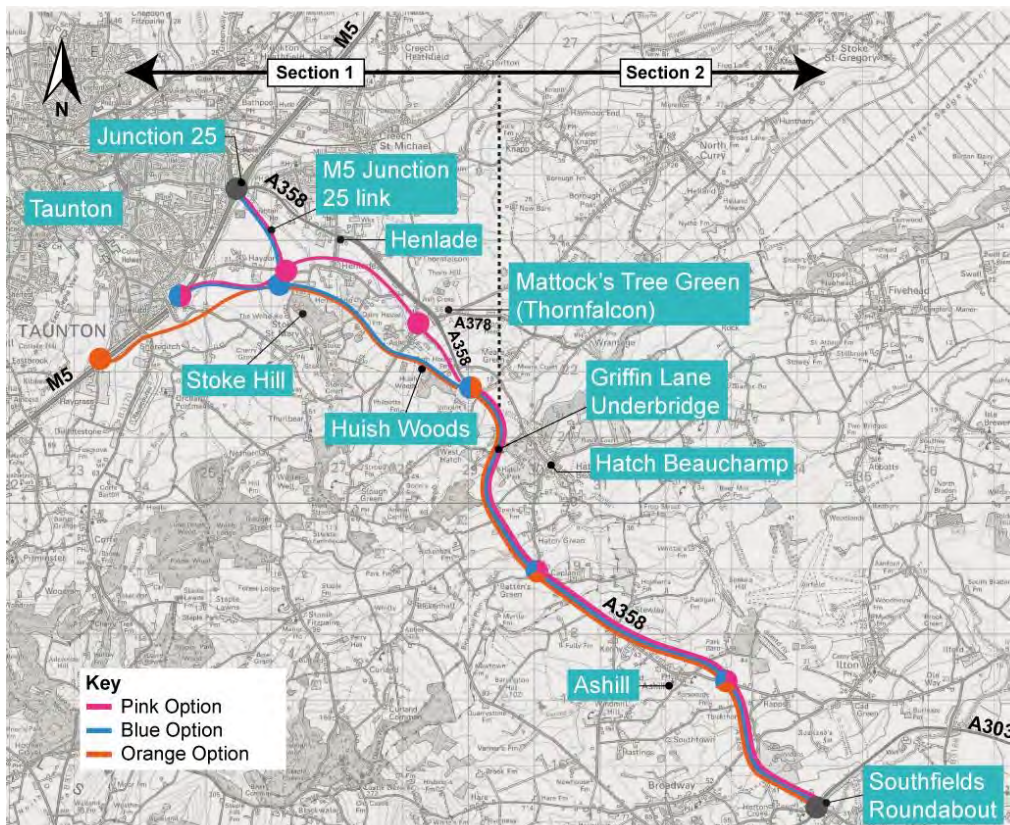


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1.1.4. Three potential route options were chosen, the Orange, Pink and Blue. At the public consultation in 2017 only the Orange option was presented. A further consultation was held in 2018 in which all three options were presented. The three route options presented at the 2018 consultation are described below:

- The **Pink option** commences at a new junction on the M5 approximately 1.2 miles (2 kilometres) south of junction 25. South-facing slip roads from the M5 would combine to become the new dual carriageway, which runs eastwards and north of Stoke Hill. Here a limited-movement junction is proposed with east-facing slip road connections to the new road which would allow traffic to travel between the new A358 and junction 25 via a new 0.9 mile (1.5 kilometre) dual carriageway link past the planned Nexus 25 site. The proposed route would then follow the existing A358 to Southfields Roundabout enabling the existing road to be upgraded from a single to a dual carriageway. The total length of the Pink option is 9 miles (14.6 kilometres), plus the 0.9 miles (1.5 kilometres) spur leading to M5 junction 25.
- The **Blue option** commences at the M5 approximately 1.2 miles (2 kilometres) south of junction 25 and runs eastwards on a more southerly alignment. At Stoke Hill a junction is proposed similar to that with the Pink option which would allow traffic to travel between the road and junction 25 via a new 1.2 miles (2 kilometres) dual carriageway link past the planned Nexus 25 site. The road would then continue in a south easterly direction to West Hatch Lane, where an all-movement, grade-separated junction is proposed to allow access to Hatch Beauchamp, Henlade and surrounding communities, and the A378. This option is identical to the Pink option from this point onwards to Southfields Roundabout. The total length of the Blue option is 8.7 miles (14.1 kilometres), plus the 1.2 miles (2 kilometres) spur leading to M5 junction 25.
- The **Orange option** commences at the M5 approximately 2.1 miles (3.5 kilometres) south of junction 25 at a proposed new 2-bridge roundabout which would form a new all-movements junction between the new A358 and the motorway. The proposed road initially takes a north-easterly course towards Henlade before arcing around the north of Stoke Hill. In contrast to the Blue option, there is no link to junction 25 from this location, and therefore no junction at Stoke Hill. This option is identical to the Blue option from this point onwards. The total length of the Orange option is 9.5 miles (15.3 kilometres).

Figure 1:2 Route options presented at the public consultations



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1.2. Scheme proposal

1.2.1. The proposed scheme would provide a dual carriageway along the length of the A358 between Taunton and Ilminster in Somerset, connecting the A303 at Ilminster to the M5 motorway to the north. The scheme would include grade separated junctions with the purpose of providing a high-quality free flow journey for those using the route, with the removal of at-grade junctions and direct accesses.

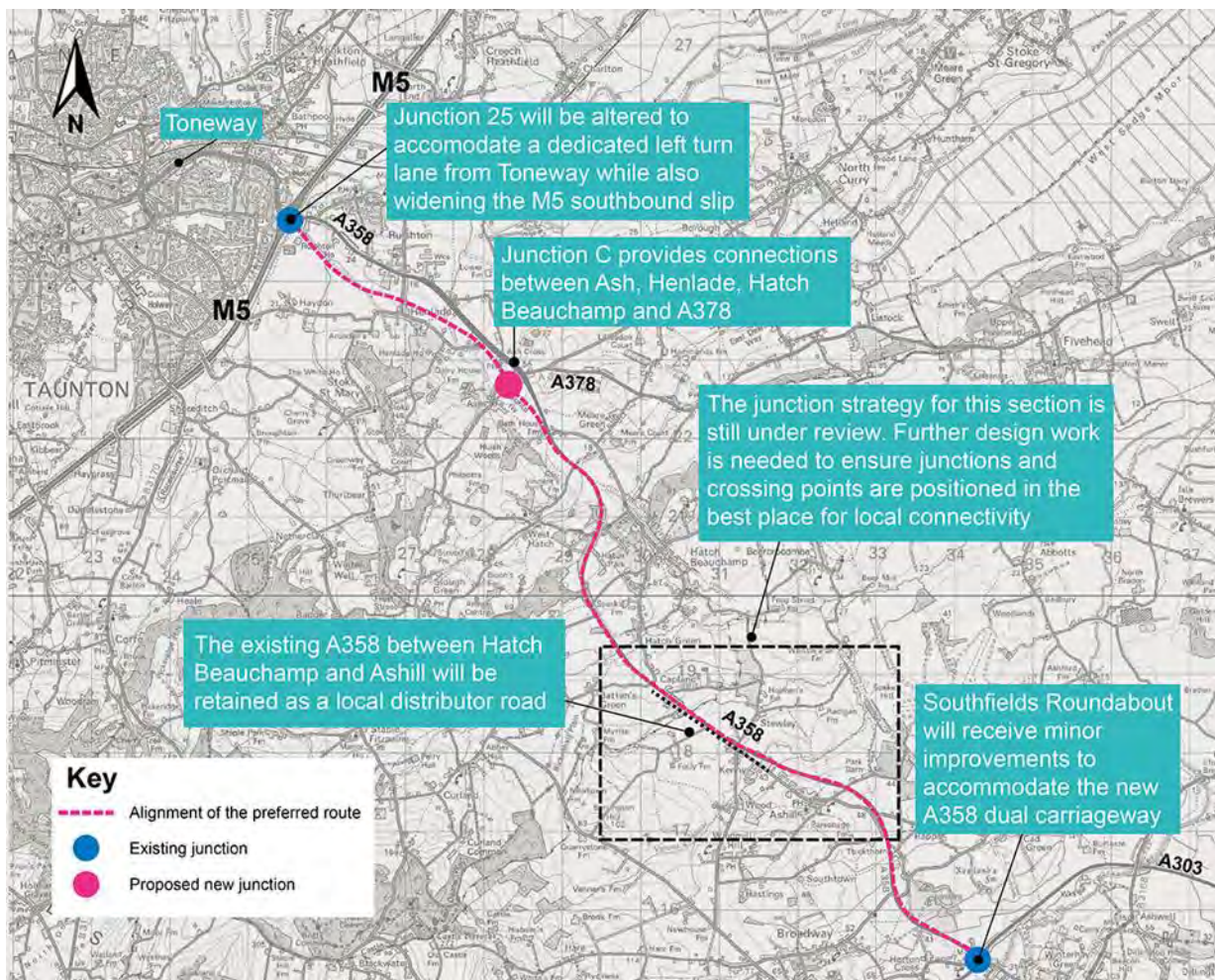
1.2.2. The Preferred Route Announcement (PRA) on the 13 June 2019 identified the Pink Modified option as the preferred route option (PRO), (refer to the Scheme Appraisal Report (SAR) for details of the development of the Pink option to the Pink Modified option).

1.2.3. The Pink Modified option would comprise online widening between West Hatch Lane and Southfields Roundabout. This option would involve the re-use of a large amount of the existing A358 corridor, and between West Hatch Lane and Henlade the route would pass close to the A378 junction at Mattocks Tree Green. This would enable direct connections between the proposed road and the A378. The Pink Modified option retains

the bypass at Henlade, connects with the A378, and connects directly to junction 25 on the M5. A plan showing the Pink Modified option route is shown in Figure 1:3 below.

1.2.4. The proposed scheme would provide a dual carriageway along the length of the A358 between Taunton and Ilminster in Somerset, connecting the A303 at Ilminster to the M5 motorway to the north. The scheme would include grade separated junctions and, with the purpose of providing a high-quality free flow journey for those using the route, the removal of at-grade junctions and direct accesses.

Figure 1:3 Pink Modified option



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1.3. Purpose of the report

1.3.1. This Reptile Technical Report has been prepared during Stage 2 of the Highways England's Project Control Framework (PCF). This Technical Report provides an overview of the reptile survey results undertaken in 2017 within 100m of the Pink Modified

option. The report provides methods, constraints and results of the reptile surveys undertaken for the scheme.

1.4. Scope of Report

1.4.1. The objectives of the report are:

- to present the methodology, constraints and results of the reptile presence or absence survey
- to present if any, the relative abundance of the common reptile populations

1.4.2. The report does not provide any detailed impact assessment or recommendations for mitigation as this aspect will be developed during PCF Stage 3 of the scheme.

1.4.3. Guidance for ecological assessment recommends that all ecological features that occur within a zone of influence (Zol) for a proposed scheme are investigated (Chartered Institute of Ecology and Environmental Management (CIEEM), 2016)¹. All sites within 100m of the Pink Modified option proposed scheme footprint were assessed for reptile suitability.

1.5. Legislation

Legal Protection

1.5.1. Due to the geographical location of the scheme, only four widespread species of reptile could potentially be encountered. Rare species such as the smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis* have restricted ranges, and their distribution and habitat preferences are not represented within the study area. Therefore, rare species are not considered any further as part of this assessment.

1.5.2. The four widespread species of reptile that could be present comprise the common lizard *Zootoca vivipara*, slow worm *Anguis fragilis*, grass snake *Natrix helvetica* and adder *Vipera berus*. They are protected under Schedule 5 (Sections 9.1, 9.5a, 9.5b) of the *Wildlife and Countryside Act 1981* (as amended), it is illegal to:

- intentionally or deliberately kill, injure or take any reptiles
- intentionally or deliberately damage, destroy or obstruct any access to any structure or place used for shelter, breeding, or protection by a reptile
- intentionally or recklessly disturb a reptile whilst it is using such a structure or place
- possess or advertise, sell or exchange a reptile (dead or alive) or any part of a reptile

¹ Chartered Institute of Ecology and Environmental Management (2016) Guideline for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal.

1.5.3. The *UK Biodiversity Action Plan (UKBAP)* 1994 – 2010 has been superseded by the *UK Post-2010 Biodiversity Framework* covering the period 2011 - 2020. UKBAP priority habitats and species were used to form the basis for the statutory list of habitats and species of ‘principal importance for the conservation of biodiversity in England’ under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*.

1.5.4. Section 40 of the NERC Act 2006 requires public bodies, including local authorities, ‘to have regard to the conservation of biodiversity in England’, when carrying out their normal functions. The local planning authority therefore must consider the impact on biodiversity of the proposed development. The NERC Act identifies species of ‘principal importance for the conservation of biodiversity in England’ (Section 41) to guide public bodies in implementing their duty. The strategic direction for biodiversity policy for the next decade is set out in the national strategy for *England Biodiversity 2020*. As part of that strategy, actions were identified by experts to help in the recovery of populations of the Section 41 listed species. Actions identified for the recovery of reptile that are pertinent to the scheme include the following:

- promote better consideration by Highways England and local planning authorities when considering development of road proposals to ensure fragmentation of populations does not occur
- encourage appropriate habitat management including protecting, maintaining and enhancing current habitat
- increase the extent of suitably and appropriate habitat management in priority habitats but note that reptiles are found in a wider range of habitats and thus action should not be restricted to these habitats.

National Planning Policy Framework

1.5.5. The *National Planning Policy Framework (NPPF)* 2019 sets out government's planning policies for England and how these are expected to be applied. Chapter 15 ‘Conserving and enhancing the natural environment’, sets out the Government’s policies on biodiversity. In summary, with regards to ecology and biodiversity, the NPPF requires that the planning system and planning policies should:

- protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils
- minimising impacts on and providing net gains for biodiversity
- if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it should not normally be permitted

- development resulting in the loss or deterioration of irreplaceable habitats should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity

1.6. Status of reptiles at a national level

1.6.1. Four common reptiles and two rare reptile species are native to the UK. The common reptiles including slow worm and common lizard are widespread and likely to occur nationally, but adder and grass snake are less widespread, largely due to habitat loss. Adders have decreased in range and numbers considerably over the past 50 years and are noted as a Priority Species under the *UK Post-2010 Biodiversity Framework*.

1.7. Status of reptiles at a county level

1.7.1. Somerset Environmental Records Centre (SERC) lists all reptile species as being 'county notable' in addition to being the subject of a local Biodiversity Action Plan for South Somerset of 2009. The adder is also the subject of a local Biodiversity Action Plan in the Quantock Hills Area of Outstanding Natural Beauty (AONB). Slow worm and common lizard are widespread and likely to occur anywhere within the county, in both rural and urban areas. The grass snake is widespread in lowland areas of the county.

1.8. Reptile ecology

Grass snake

1.8.1. Due to a diet consisting largely of frogs, toads and newts, the grass snake generally utilises freshwater habitats near to areas of open grassland. Grass snake hibernacula generally comprise of disused rabbit holes within well drained slopes. They can be observed basking near to hibernacula during the springtime in the evening and early morning. Grass snakes lay shelled eggs, usually within compost heaps or similar areas providing warmth to aid incubation.

Common lizard

1.8.2. The common lizard favours habitat which has a complex structure, for example mature grassland with scattered scrub, stone walls and heathland. Mating takes place in spring and females give birth to live young in August. The common lizard prefers open sunny locations for basking and is usually found in dry, exposed locations where dense cover exists close by. Common lizards feed predominantly on spiders and insects.

Slow worm

1.8.3. Slow worms are often found in low intensity managed grassland, sheltering and foraging within grass that has developed into a thatch like structure. Slow worms are often found in disused hay meadows, landfill sites, gardens, allotments, highway verges and brownfield sites and are widespread throughout the UK. Slow worms feed on slow-moving soft bodied prey items, particularly small slugs.

Adder

1.8.4. The adder is found throughout Britain, occurring most commonly in open habitats such as heathland, moorland, open woodland and sea cliffs, and rarely stray into gardens. Mating takes place in April to May and female adders incubate their eggs internally and give birth to live young in August or September. Adders feed largely on small rodents and lizards. They are creatures of habit, returning to the same hibernacula annually. They are a Priority Species under the *UK Post-2010 Biodiversity Framework*.

2. Methodology

2.1. Desk study

2.1.1. A detailed biological records search was requested from Somerset Environmental Records Centre (SERC) in 2016, within a 2 kilometre radius of the scheme.

2.1.2. All potentially suitable habitats likely to be impacted by the three scheme options under consideration at the time (Pink option, Blue option and Orange option), were identified using the Department for Environment Food and Rural Affairs (Defra) Multi Agency Geographic Information for the Countryside (MAGIC) online viewer tool (Defra 2017), the use of 1:10,000 Ordnance Survey Mapping and aerial photography. These were recorded and given a unique identifier.

2.2. Habitat assessment

2.2.1. An extended Phase 1 habitat survey was undertaken in January 2017 by Mott MacDonald Sweco Joint Venture ecologists. Suitable habitat identified during the desk study within a 100m radius of the schemes were identified and assessed further to determine whether these sites had the appropriate habitat structure to support reptile populations. This was based on the following characteristics:

- location in relation to species range
- vegetation structure
- insolation (exposure to sun)
- aspect
- connectivity to other good quality habitat
- prey abundance
- refuge opportunities
- hibernation habitat potential
- disturbance
- egg-laying site potential (for grass snake only)

2.2.2. The habitat assessment graded each habitat as having either “low”, “medium” or “high” potential to support reptiles, based on the criteria above.

2.3. Field survey

2.3.1. Roofing felt tiles measuring 0.5m by 0.5m were deployed at each site with the potential to support reptiles, in areas of suitable habitat. The tiles act as artificial refugia; attractive to reptiles as basking locations as they heat up quicker than the surrounding environment, as well as providing cover.

2.3.2. In linear habitats, such as road verges and field margins, refugia were placed approximately every 10m. In non-linear habitats (fields), a density of ten tiles per hectare was deployed. Each tile was numbered, and a GPS location recorded.

2.3.3. After a minimum settling-in period of 14 days, surveys on each habitat site were undertaken to check for reptiles. As well as checking the artificial refugia, surveyors checked any suitable natural refugia (for example, logs, stones) and conducted a visual search between refugia. Details including refugia number, species, life stage (adult, sub-adult, juvenile) and sex (when possible) were recorded on a survey proforma, along with weather, time and date. Each visit was conducted during the following conditions:

- time: conducted between 07:00 and 19:00
- air temperature: 10°C - 20°C
- wind: still to moderate (equivalent to Beaufort 4; 13 - 17mph)
- rain: no or light rain only at time of survey. Surveys between periods of heavy rain (when all other conditions are suitable) are also acceptable

2.3.4. Twenty survey visits, in suitable weather conditions, were conducted on each reptile site between April and October 2017 to determine population size, with the exception of eight sites. Justification for a reduced survey effort is discussed in section 2.5.

2.3.5. As well as adhering to weather requirements, surveys were also undertaken during optimal months of April, May and September across 2017.

2.3.6. Population size and importance of reptile population is assessed according to categories described under the Froglife Advice Sheet 10: Reptile Survey (1999). This advice identifies site importance for reptiles according to the maximum number of adult animals recorded by a single surveyor on a single day during observation and refuge checks, where artificial refugia are at a density of ten per hectare².

2.3.7. Each population category present is awarded a score, these are totalled to estimate site importance. Categories are summarised in Table 2:1.

² Froglife 2015, Surveying for Reptiles: Tips, techniques and skills to help you survey for reptiles. <https://www.froglife.org/wp-content/uploads/2013/06/Reptile-survey-booklet-3mm-bleed.pdf>

Table 2:1 : Reptile population size categories

Species	Low population (Score 1)	Good population (Score 2)	Exceptional population (Score 3)
Slow worm	< 5	5-20	>20
Common lizard	< 5	5-20	>20
Adder	< 5	5-10	>10
Grass snake	< 5	5-10	>10

Source: Froglife Advice Sheet 10³

2.3.8. As a general rule, sites are automatically classed as of importance to reptile species if they:

- support three or more reptile species
- support two snake species
- support an exceptional population of one species
- support an assemblage of species scoring at least 4 (according to a total of score obtained from Table 2:1 above)
- are of significant regional importance due to local rarity

2.4. Site status assessment

2.4.1. Following the completion of the surveys an assessment of the status of the site was then made. The importance of the site takes into account the population estimate but also several other factors:

- the quality and rarity of the habitat and population
- how connected the population is to the wider area
- the local significance of the population
- the estimated size of the population

2.5. Survey constraints

2.5.1. Where reptiles have not been identified as occupying a site, this does not guarantee their absence. There is always the risk of reptiles being over-looked with the use of artificial refugia, particularly in areas where there is an abundance of natural habitat. Large areas of natural habitat along with potentially low populations, could lead to individuals going undetected.

2.5.2. Three route options were originally scoped for suitable reptile habitat. Twenty-seven survey sites were identified within 100m of the three scheme options. Nineteen sites were deemed suitable for a reptile survey, 14 of these sites are located within 100m

³ Froglife 1999, Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizards conservation https://www.wildcare.co.uk/media/wysiwyg/pdfs/froglife_advice_sheet_10_-_reptile_surveys.pdf.

of the Pink Modified option. Access was granted for a majority of sites with suitable reptile habitat. Table 2:2 below shows the 14 proposed survey sites, within 100m of the preferred route option (PRO) and comments on the survey status.

2.5.3. Suitability of reptile habitat fluctuated at each site throughout the 2017 survey period. The sites were all at risk of ongoing maintenance, grazing and vulnerable to public interference.

2.5.4. Maintenance of the highways soft estate included the mowing of approximately 2m on the grass closest to the road edge to increase visibility at junctions. Due to the wide nature of the soft estate it was possible to place the artificial refugia at the back of the verge away from the mown area to allow it to remain undisturbed to allow population checks to be undertaken.

Table 2:2 Reptile site summary

Reptile Site	Set up Date	Total Number of Surveys	Distance to Pink Modified option (metres)	Survey status
R1	April 2017	20	20	Complete
R2	April 2017	20	0	Complete
R8	N / A	0	3	No access 2017
R9	April 2017	20	0	Complete
R10	N / A	0	0	No access 2017
R11	April 2017	20	0	Complete
R12	April 2017	20	0	Complete
R13	April 2017	16	0	Surveys incomplete
R14	April 2017	20	0	Complete
R15	April 2017	13	0	Surveys incomplete
R16	April 2017	20	0	Complete
R17	N / A	0	0	No access 2017
R18	April 2017	20	0	Complete
R19	April 2017	20	0	Complete

2.5.5. Sites R3, R4, R5, R6, R7 are no longer within 100m of the Pink Modified option and therefore not considered further in this report.

2.5.6. Site R13 did not have a complete set of survey results due to a change in habitat suitability during the survey period. During the survey period the field margin was ploughed to increase the size of the field removing suitable reptile habitat. Where sites were made unsuitable during the course of the 2017 season, these surveys were stopped, and felts collected. Site R13 had a total of 16 surveys.

2.5.7. No access permissions for sites R8, R10 and R17 were granted in 2017 and access was revoked for site R15 after 14 survey visits. These surveys were scheduled to

be undertaken in 2018 however due to a change in programme it was deemed that these surveys could be undertaken in 2019.

2.5.8. A meeting to agree the scope of the reptile surveys was held with Highways England in April 2019. It was advised that the reptile surveys should continue to inform a robust Environment Statement (ES) and mitigation strategy. However, it was noted by Highways England that the Design Manual for Roads and Bridges (DMRB) stated that reptile sites should be assumed at carrying capacity and this advice should be followed. Due to this, no further reptile surveys were undertaken.

2.5.9. It should be noted that the DMRB⁴ has been updated since the 2019 agreement of scope meeting and no longer states reference to carrying capacity. In line with the new DMRB, surveys should be completed in full as it says to follow technical standards⁵.

⁴ Design Manual for Roads and Bridges March 2020, LA108 Biodiversity Revision 1 https://www.standardsforhighways.co.uk/dmrp/search?discipline=SUSTAINABILITY_AND_ENVIRONMENT.

⁵ Design Manual for Roads and Bridges March 2020, LA118 Biodiversity Revision 0 https://www.standardsforhighways.co.uk/dmrp/search?discipline=SUSTAINABILITY_AND_ENVIRONMENT.

3. Results

3.1. Desk study

3.1.1. The detailed biological records search from Somerset Environmental Records Centre (SERC) revealed the presence of; slow worms, grass snakes and adders, three of the four common reptile species within a 2 kilometre radius of the scheme. No records of common lizard were returned. There are no biological record data search results within 100m of the scheme. A record of reptile species found within 2 kilometres of the Pink Modified option are summarised in Appendix A. For completeness all records for reptiles returned from the data search are displayed including those now outside 2 kilometres of the Pink Modified option.

3.2. Habitat assessment

3.2.1. All habitat within 100m of the three route options under consideration at the time, were assessed for their suitability to support reptiles. Twenty-seven sites were originally identified during the desk study as requiring further assessment. During the initial site visits in early 2017, 19 of the 27 sites were identified as offering suitable habitat to support common reptile populations. Of the 19 sites 14 are located within 100m of the Pink Modified option.

3.2.2. Site R13 did not have a complete set of survey results due to a change in habitat suitability during the survey period. Where sites were made unsuitable during the course of the 2017 season, these surveys were stopped, and felts collected. Site R13 had a total of 16 checks.

3.2.3. The remaining 14 sites are described in more detail in the sections below. A map displaying the locations of the 19 originally identified surveyed sites is presented in Appendix B.

3.3. Description of habitats

Site R1

3.3.1. Site R1 is at the northern end of the existing A358, approximately 20m from the proposed scheme, located at the Taunton Gateway park and ride. The habitat was landscaped as part of the park and ride construction in 2010. The construction included log piles creating hibernacula for reptiles. The existing habitat is approximately 2.46 hectares consisting of a mosaic of tall ruderal vegetation, scrub and rough grassland alongside two ponds and marginal wetland habitat. This site is well connected to the surrounding agricultural landscape and offers high prey availability and plentiful refuge opportunities provide good cover and foraging opportunities for reptiles, making this site high quality for reptiles.

3.3.2. Figure 3:1 below demonstrates the type of habitat present at this site.

Figure 3:1 : R1 habitat example



Site R2

3.3.3. Site R2 is at the northern end of the scheme, located to the south-east of the Taunton Gateway park and ride. Site R2 lies within the footprint of the proposed scheme, it is a 0.34 hectare field situated between grazing and arable fields, with a hedgerow to the north-west of the field and a larger woodland site to the south-east. A watercourse runs along the south-east and south side of the field surrounded by willow, with nettle and bramble-dominated ruderal habitat. A mixture of tall sward and short grass creates a complex vegetation structure. Providing good basking and foraging habitat for widespread reptile species, making this site high quality for reptiles.

3.3.4. Figure 3:2 below demonstrates the type of habitat present at this site.

Figure 3:2 : R2 habitat example



Site R8

3.3.5. Site R8 is at the northern end of the scheme, located to the south side of the existing A358 just north of Ashe Farm, 3m from the proposed scheme. Site R8 is a 1.79 hectare strip of set aside land situated between grazing and arable fields bordered with a line of trees, which is part of the disused Chard Branch Lines railway. Comprising limited rough grassland, with variable sward structure including scrub creating refuge opportunities. Shading from trees creates a cooler environment with extensive refuge opportunities. The connectivity of this site to the wider area's patches of tussock and denser grassland with a more complex species diversity means that there is moderate

quality reptile habitat. Photos displaying site R8 are not available due to access restrictions.

Site R9

3.3.6. Site R9 is located on the current A358 soft estate in West Hatch on the junction for Ash Lodge and lies within the footprint of the proposed scheme. Site R8 is a 0.14 hectare strip of managed grassland verge comprising improved and rough grassland, with variable sward structure. This site is periodically mown. At the time of the habitat survey some long dense grass and partly mown sections were present with a small gap of bare ground for field access. A wooded hedgerow borders this site and is connected to a residential garden that is used to graze sheep. There is a large wooded area to the south of this site offering connectivity to surrounding field margins. Prey availability and refuge opportunities provide good cover and foraging opportunities making this site high quality for reptiles.

3.3.7. Figure 3:3 below demonstrates the type of habitat present at this site.

Figure 3:3 : R9 habitat example



Site R10

3.3.8. Site R10 is located along the disused Chard Branch Lines railway in West Hatch and lies within the footprint of the proposed scheme. It is a 1.35 hectare strip of land situated between two halves of an arable field, bordered with lines of trees. Comprising scrub, grassland and broadleaved woodland. The variable habitat here with access to two woodland edge boundaries, foraging habitat, basking opportunities and cover, this site is classed as moderate reptile habitat. This site is highly connected to larger areas of suitable reptile habitat in the surrounding area. Photos displaying site R10 are not available due to access restrictions.

Site R11

3.3.9. Site R11 is located on the current A358 soft estate in Hatch Beauchamp on the junction for Bickenhall Lane and lies within the footprint of the proposed scheme. Site R11 is a 0.38 hectare strip of predominately grassland bordered by hedgerows. This site is

subject to regular highways maintenance. Approximately 1.5m of the verge from the road side is occasionally mown for safety, leaving the back section of the verge suitable for refugia surveys. An area of woodland and scrub borders this site and is connected to further arable field margins along with an area of woodland and scrub planting to the north. This site provides good basking habitat, with good refuge opportunities in connecting habitat, this habitat is of moderate reptile suitability.

3.3.10. Figure 3:4 below demonstrates the type of habitat present at this site.

Figure 3:4 : R11 habitat example



Site R12

3.3.11. Site R12 is located on the current A358 soft estate in Hatch Beauchamp on the junction for Capland Lane and lies within the footprint of the proposed scheme. Site R12 is a 0.30 hectare strip of semi-improved grassland, with scattered shrubs and hedgerows with trees present. This verge is periodically managed grassland comprising improved and rough grassland. This site is subject to regular highways maintenance. Approximately 1.5m of the verge from the road side is occasionally mown for safety, leaving the back section of the verge suitable for refugia surveys. A dense area of woodland is located on the north side of Capland lane and bordering the grassland on the south side of Capland lane is a row of woody scrub species. This scrub connects to the wider area including a large pond to the south, a broadleaved woodland strip and improved grassland fields to the north-east. Site R12 is connected to site R13 to the south. This site provides good basking habitat, high prey availability, plentiful refuge opportunities and provides good cover and foraging opportunities for reptiles. This site is high quality reptile habitat.

3.3.12. Figure 3:5 below demonstrates the type of habitat present at this site.

Figure 3:5 : R12 habitat example



Site R13

3.3.13. Site R13 is located on a field margin close to Capland and lies within the footprint of the proposed scheme. Site R13 is a 0.78 hectare strip of arable field margin, a dense area of woodland and scrub is located on the north side of the field. This area of woodland and scrub leads to a large pond and is connected to a broadleaved woodland strip and improved grassland fields to the north-east as well as connection to site R12 to the north. This site provides exceptional habitat, high prey availability, plentiful refuge opportunities, foraging and egg laying opportunities for grass snake and excellent connectivity make this area a high-quality habitat for reptiles.

3.3.14. Figure 3:6 below demonstrates the type of habitat present at this site.

Figure 3:6 : R13 habitat example



Site R14

3.3.15. Site R14 is located on the current A358 soft estate on the junction for Stewley and it lies within the footprint of the proposed scheme. It comprises grassland with scattered scrub bordered by hedgerows and is 0.63 hectares. This site is subject to regular highways maintenance. Approximately 1.5m of the verge from the roadside is occasionally mown for safety, leaving the back section of the verge suitable for refugia surveys. The site is connected to larger areas of improved grassland to the north, used to graze small numbers of livestock, separated only by a hedgerow. This site provides exceptional connectivity to large areas of suitable habitat in the surrounding landscape

including site R15. The hedgerows provide refuge opportunities and prey availability giving this site overall high-quality reptile habitat.

3.3.16. Figure 3:7 below demonstrates the type of habitat present at this site.

Figure 3:7 : R14 habitat example



Site R15

3.3.17. Site R15 runs along Venners Water, following a strip of tall grassland with scattered scrub and it lies within the footprint of the proposed scheme. The site is a 0.3 hectare strip of arable field margin, intertwined with a watercourse margin. A strip of broadleaved woodland and scrub runs along the watercourse and is connected to a large number of improved grassland fields, including a drainage field allowing access to a wetland habitat, as well as connections to site R14 to the east. This site provides plentiful refuge and foraging opportunities and is overall high-quality reptile habitat.

3.3.18. Figure 3:8 below demonstrates the type of habitat present at this site.

Figure 3:8 : R15 habitat example



Site R16

3.3.19. Site R16 is located on the current A358 soft estate on the junction for Rapps and it lies within the footprint of the proposed scheme. Site R16 is a 0.27 hectare strip of managed grassland verge comprising improved and rough grassland. This site is subject to regular highways maintenance. Approximately 1.5m of the verge from the road side is occasionally mown for safety, leaving the back section of the verge suitable for refugia surveys. A dense area of woodland is located on the south side of the site which allows connections to larger grassland areas to the south including a pond habitat. This site provides connection to a large amount of suitable habitat in the surrounding area and is overall moderate quality reptile habitat.

3.3.20. Figure 3:9 below demonstrates the type of habitat present at this site.

Figure 3:9 : R16 habitat example



Site R17

3.3.21. Site R17 is located to the south of the existing A358, and is a field set aside between two arable fields and it lies within the footprint of the proposed scheme. Comprising rough grassland approximately 1.08 hectare, with variable sward structure including small amounts of scrub creating refuge opportunities. There are various patches of tussock and denser grassland with a more complex species diversity. Watercourse marginal habitat is available along with connectivity to the west side of the A358 via a culvert and connectivity to the wider surrounding landscape. The watercourse margins have the greatest reptile potential due to the carrying sward height and higher plant species richness. Good connectivity to the wider landscape means that there is high potential for reptiles in this high-quality habitat.

3.3.22. Figure 3:10 below demonstrates the type of habitat present at this site.

Figure 3:10 : R17 habitat example



Site R18

3.3.23. Site R18 is located at the south of the current A358, at the first junction as you head north toward Taunton and it lies within the footprint of the proposed scheme. The 0.64 hectare site sits on the soft estate of the A358 and comprises grassland with scattered scrub, bordered by hedgerows with scattered trees. This site is subject to regular highways maintenance. Approximately 1.5m of the verge from the roadside is occasionally mown for safety, leaving the back section of the verge suitable for refugia surveys. There is connectivity to the wider habitat including links to site R17. Dense vegetation, tall ruderal and scrub habitat to the rear of the soft estate alongside open areas create the complex structure preferable for basking and foraging creating a high-quality reptile habitat.

3.3.24. Figure 3:11 below demonstrates the type of habitat present at this site.

Figure 3:11 : R18 habitat example



Site R19

3.3.25. Site R19 is located at the south of the current A358 on the verge side of the Horton Cross services and it lies within the footprint of the proposed scheme. The 0.15 hectare site sits on the soft estate of the A358 between the site and the services, this site comprises grassland and scattered scrub and is connected to woodland to the north which in turn leads to a field comprising improved grassland. This area is subject to regular highways maintenance. Approximately 1.5m of the verge from the roadside is occasionally

mown for safety, leaving the back section of the verge suitable for refugia surveys. Patches of dense vegetation and scrub at the toe of the verge embankment provide cover and ruderal habitat alongside more open areas of the steep south facing bank create the complex structure preferable for basking and foraging. This site provides high suitability for reptiles.

3.3.26. Figure 3:12 below demonstrates the type of habitat present at this site.

Figure 3:12 : R19 habitat example



3.4. Field survey

Reptile population survey result

3.4.1. Two of the four common reptile species were found at seven of the sites that had a full set of reptile refugia checks within 100m of the scheme.

3.4.2. Slow worm populations were found at all sites except site R2, R9 and R15 where no reptiles were found. Based on population score (refer to Table 2:1), slow worm populations were classed as good at five sites where reptiles were recorded. Grass snakes were found at three sites.

3.4.3. No evidence of common lizards or adders were found during the population surveys.

3.4.4. In 2017 access permissions were not granted for sites R8, R10, and R17 so no surveys were undertaken.

3.4.5. Site R13 and R15 do not have a full data set due to surveys being stopped before 20 refugia checks could be undertaken. Data for both sites is included for completeness. Site R13 recorded the presence of slow worms before surveys were ceased. Site 15 recorded no reptiles during the course of the surveys before they ceased.

3.4.6. Survey results for each site, including population size categories, are outlined below.

Site R1

3.4.7. This site recorded one adult slow worm across the duration of the surveys, this gives the site a low population size category.

Site R2

3.4.8. No reptiles were recorded at this site.

Site R9

3.4.9. No reptiles were recorded at this site.

Site R11

3.4.10. Site R11 recorded slow worms only. The peak individual count (five) was seen in September, compared to the lower counts in the spring months, making up over 50% of the total recorded results with the majority of those recorded being adult female slow worms. This equates to a good population size category.

Site R12

3.4.11. The peak adult count of slow worms at site R12 was nine, recorded in May 2017; this equates to a good population size. In general, slow worm numbers highest in September, when juveniles and sub adults are considered as well. Additionally, four juvenile grass snakes were recorded at this site across all surveys, but no adults were recorded to provide a size class classification for the species.

Site R13

3.4.12. Site R13 supported a low population size class of slow worms, with a peak adult count of two during April 2017. As a result of ploughed field margins, suitable reptile habitat was removed from this site before surveys could be undertaken in September 2017. Surveys were discontinued, with a total of only 16 visits.

Site R14

3.4.13. Site R14 recorded populations of slow worms and grass snake. There was one record of a juvenile grass snake recorded in May. Across the 2017 survey season there was a split in recorded slow worm genders, between April and May 80% of records were male and in September 100% of records were female alongside one juvenile, with an individual peak count of two adult slow worms. The population size category for slow worms here is low.

Site R15

3.4.14. This site recorded one slow worm across the duration of the surveys, this gives the site a low population size category.

Site R16

3.4.15. Site R16 recorded slow worms only. The peak individual count was seen in April (18) with individual counts being much higher in the spring months compared to September. There was a wide spread across all age categories with juveniles, sub adults and adults all being recorded. This give this site a good population size category.

Site R18

3.4.16. Site R18 recorded populations of slow worms and grass snake. There was only one record of a sub adult grass snake in September. Slow worm populations were fairly consistent across all refugia checks with a peak count of five. Of the 51 slow worms recorded, one was a juvenile. The slow worm population size category at this site is classed as good.

Site R19

3.4.17. Site R19 recorded slow worms. Slow worms were found in large numbers at this site, with the highest overall recorded numbers across the survey period as well as the highest peak count (17). This site is one of the smaller sites to be surveyed giving a population score category of good. Individuals were recorded on every check of this site.

Reptile population summary

3.4.18. A summary of the number of reptiles recorded in each survey site is presented in Table 3:1 below, together with calculated reptile densities and population categories. A full list of results including tile densities, full weather conditions and survey results are presented in Appendix C.

Table 3:1 Reptile survey results by species and survey area – within 100m of the scheme

Species	Total number recorded over 20 visits (all individuals)	Total number recorded (adults only)	Peak count (all individuals)	Peak count single visit (adults only)	Area of reptile habitat (Ha)	Population Score Category (Refer to Table 1)
Site R1						
Slow worm	1	1	1	1	2.46	Low
Site R2						
No reptiles found					0.34	N/A
Site R9						
No reptiles found					0.14	N/A

Species	Total number recorded over 20 visits (all individuals)	Total number recorded (adults only)	Peak count (all individuals)	Peak count single visit (adults only)	Area of reptile habitat (Ha)	Population Score Category (Refer to Table 1)
Site R11						
Slow worm	32	22	6	5	0.38	Good
Site R12						
Slow worm	112	68	20	9	0.30	Good
Grass snake	4	0	2	0	0.30	N/A
Site R13						
Slow worm	3 in 16 visits	3 in 16 visits	2	2	0.78	Low
Site R14						
Slow worm	13	12	2	2	0.63	Low
Grass snake	1	0	1	0	0.63	N/A
Site R15						
Slow worm	1	1	1	1	0.30	Low
Site R16						
Slow worm	232	183	24	18	0.27	Good
Site R18						
Slow worm	51	49	5	5	0.64	Good
Grass snake	1	0	1	0	0.64	N/A
Site R19						
Slow worm	264	158	26	17	0.15	Good

3.5. Valuation

3.5.1. The scheme area surveyed for reptiles (100m of the Pink Modified option) supports two of the four common reptile species, with some sites supporting good populations of slow worm. Widespread reptiles are locally common in Somerset; however, the grass snake is the subject of a local Biodiversity Action Plan (BAP) for South Somerset.

3.5.2. Considering the good populations of slow worm found at just under 50% of sites within 100m of the Pink Modified option, the scheme should be considered high conservation value for slow worms. Their presence on site would therefore put the value of this environment as High based on the objectives described in the *Reptile Habitat Management Handbook*⁶.

3.5.3. In the absence of development, it is likely that the conservation status of the reptile assemblage would remain as Favourable and Stable.

⁶ Edgar, P., Foster, J. and Baker, J. (2010). Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth. <http://downloads.gigl.org.uk/website/Reptile%20Habitat%20Management%20Handbook.pdf>

4. Conclusion

4.1.1. Reptiles were found in seven sites that had a full set of reptile refugia checks within 100m of the scheme. Two of the four species of common reptile were found.

4.1.2. Slow worm populations were found at all sites except site R2 and R9 where no reptiles were found. Based on population score (refer to Table 2:1), slow worm populations were classed as good at five of the sites. Grass snakes were found at three of the sites.

4.1.3. No evidence of common lizards or adders were found during the population surveys.

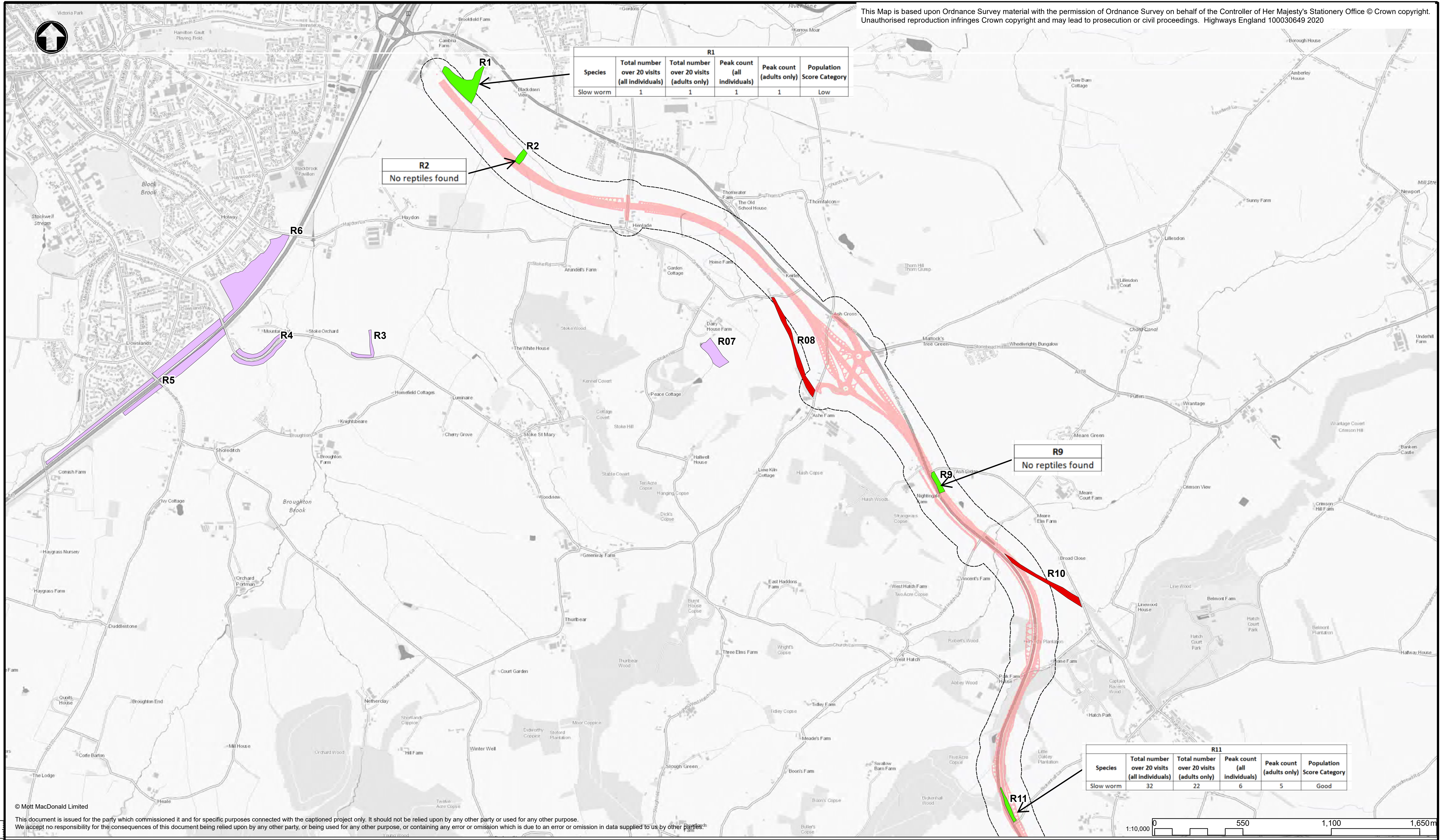
4.1.4. The impact assessment and subsequent mitigation and enhancement strategy will be covered within the ecology and nature conservation chapter of the Environmental Statement for the project. At the time of writing, the scheme is still being designed and firm conclusions on impacts and mitigation will be detailed in the aforementioned document.

Appendices

Appendices A – Results from SERC

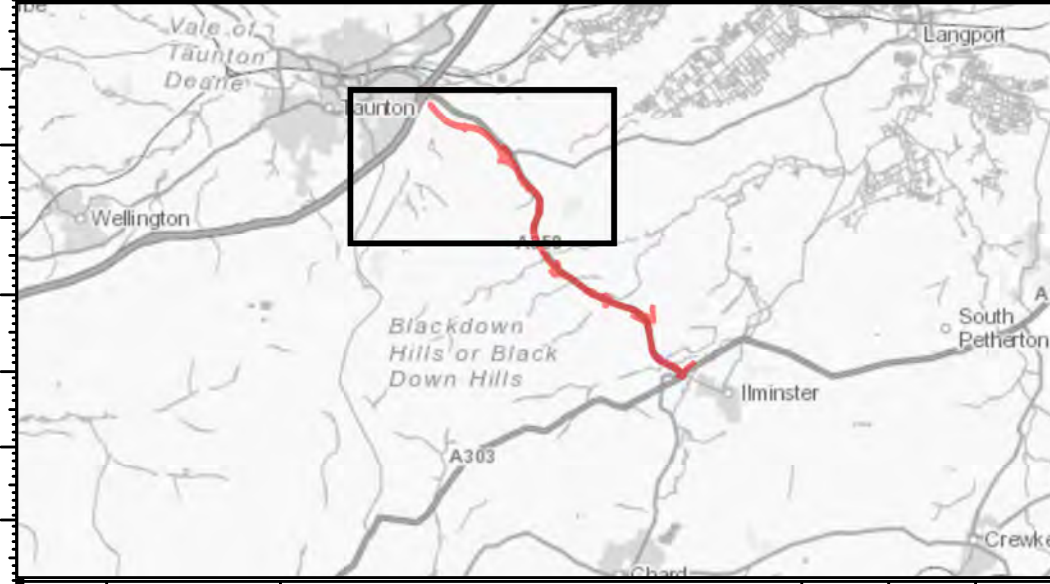
Scientific Name	Common Name	Location	Grid Reference	Distance from Scheme (metres)	Year
<i>Anguis fragilis</i>	Slow-worm	The Vicarage, Creech St Michael	ST274253	1,587	2010
<i>Natrix helvetica</i>	Grass Snake	Ilminster	ST358163	1,241	2005
<i>Natrix helvetica</i>	Grass Snake	Thurlbear	ST265211	2,142	2005
<i>Natrix helvetica</i>	Grass Snake	West Hatch	ST276207	1,732	2008
<i>Vipera berus</i>	Adder	Thurlbear Reserve	ST270207	2,190	2008
<i>Natrix helvetica</i>	Grass Snake	Stewley, Ashill	ST315186	455	2006
<i>Anguis fragilis</i>	Slow-worm	Stewley, Ashill	ST315186	455	2006
<i>Anguis fragilis</i>	Slow-worm	Ilminster	ST363146	1,700	2002
<i>Anguis fragilis</i>	Slow-worm	Wharf Lane, Ilminster	ST359145	1,740	1998
<i>Natrix helvetica</i>	Grass Snake	Wood (hamlet)	ST312175	494	1999
<i>Anguis fragilis</i>	Slow-worm	Wood (hamlet), Ashill	ST312175	494	1999
<i>Anguis fragilis</i>	Slow-worm	Stoke Road, near Greenway Farm	ST266216	1,700	1999
<i>Natrix helvetica</i>	Grass Snake	Land off Hyde Lane, Creech St Michael	ST268260	1,738	2008
<i>Natrix helvetica</i>	Grass Snake	Sunset Cottage, West Hatch	ST275207	1,732	2007
<i>Vipera berus</i>	Adder	Thurlbear Wood & Quarrylands SSSI	ST273212	1,400	1994
<i>Vipera berus</i>	Adder	Thurlbear Wood Reserve	ST272210	1,700	1993
<i>Natrix helvetica</i>	Grass Snake	Bridgwater and Taunton Canal / M5 bridge	ST263258	1,380	1996
<i>Anguis fragilis</i>	Slow-worm	Thurlbear Wood Reserve	ST272210	1,700	1991
<i>Vipera berus</i>	Adder	Thurlbear Wood Reserve	ST267208	2,200	1991
<i>Anguis fragilis</i>	Slow-worm	Slough Green	ST272202	2,000	2003
<i>Natrix helvetica</i>	Grass Snake	Witch Lodge Fields	ST252198	3,912	1997

Appendices B – Survey sites and results map



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Notes
 Pink Modified Scheme, Mott MacDonald (2018)
 Reptile locations, Mott MacDonalds (2018)

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Key to symbols

- Pink modified scheme option
- 100m buffer
- Reptile survey areas**
- No access
- Not within 100m of the Pink Modified Option
- Survey complete
- Survey incomplete

References drawings

Drawing Status
 Suitable for Stage Approval

Subsidiary
 S4

Project Title
 A358 Taunton to Southfields

Drawing Title
 Reptile site locations
 Page 1 of 2

Mott MacDonald Sweco
 Stoneham Place
 Stoneham Lane
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 SO50 9NW
 Tel: +44 (0)23 8062 8800
 Fax: +44 (0)23 8062 8801
 www.mottmac.com

Scale
 1:10,000

Designed
 GG

Drawn
 ER

Checked
 KA

Approved
 ER

Original Size
 A1

Date
 10/03/2021

Client

Drawing Number
 HE551508 - MMSJV - EBD - 000

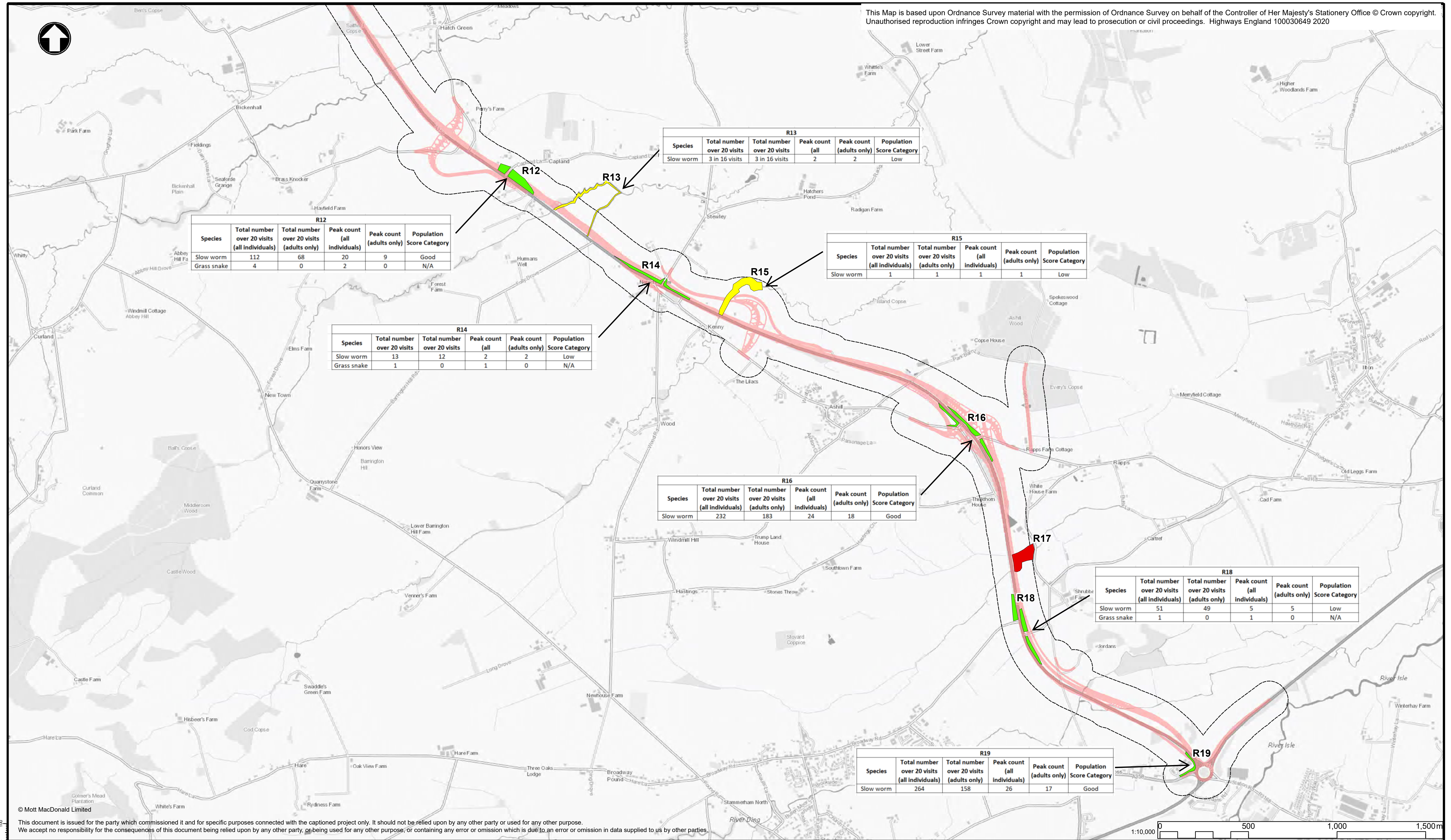
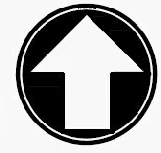
Originator
 MMSJV

Volume
 - EBD -

Project Ref. No.
 370774

Revision
 P2

P2	10/03/2021	Suitable for Stage Approval	ER	KA	ER
REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D



R12					
Species	Total number over 20 visits (all individuals)	Total number over 20 visits (adults only)	Peak count (all individuals)	Peak count (adults only)	Population Score Category
Slow worm	112	68	20	9	Good
Grass snake	4	0	2	0	N/A

R14					
Species	Total number over 20 visits	Total number over 20 visits	Peak count	Peak count	Population Score Category
Slow worm	13	12	2	2	Low
Grass snake	1	0	1	0	N/A

R13					
Species	Total number over 20 visits	Total number over 20 visits	Peak count	Peak count	Population Score Category
Slow worm	3 in 16 visits	3 in 16 visits	2	2	Low

R15					
Species	Total number over 20 visits (all individuals)	Total number over 20 visits (adults only)	Peak count (all individuals)	Peak count (adults only)	Population Score Category
Slow worm	1	1	1	1	Low

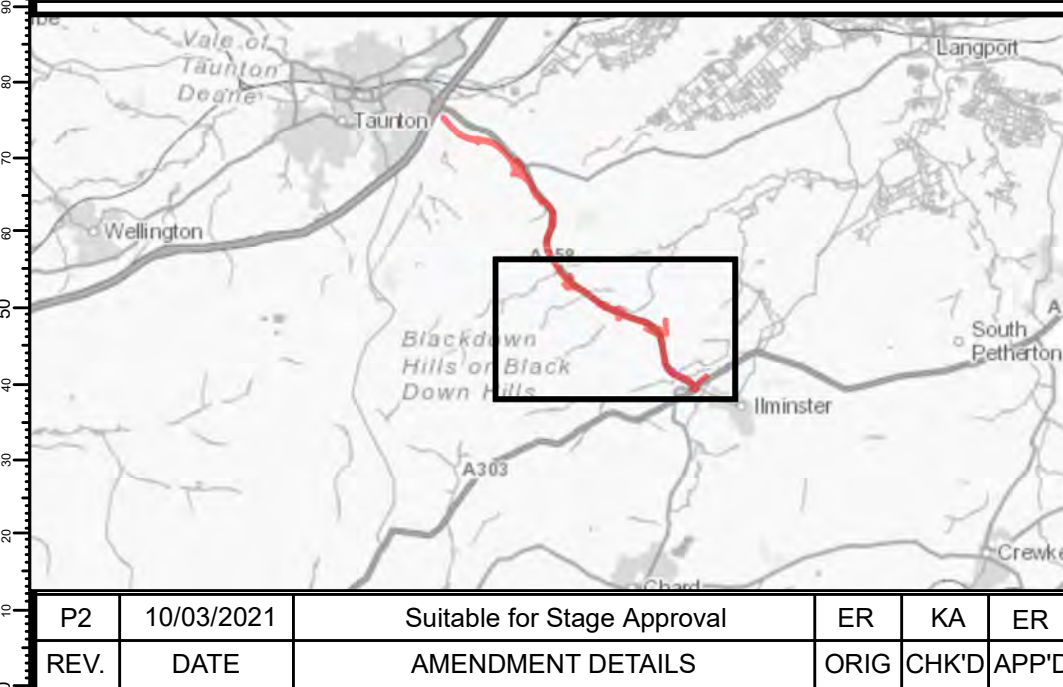
R16					
Species	Total number over 20 visits (all individuals)	Total number over 20 visits (adults only)	Peak count (all individuals)	Peak count (adults only)	Population Score Category
Slow worm	232	183	24	18	Good

R18					
Species	Total number over 20 visits (all individuals)	Total number over 20 visits (adults only)	Peak count (all individuals)	Peak count (adults only)	Population Score Category
Slow worm	51	49	5	5	Low
Grass snake	1	0	1	0	N/A

R19					
Species	Total number over 20 visits (all individuals)	Total number over 20 visits (adults only)	Peak count (all individuals)	Peak count (adults only)	Population Score Category
Slow worm	264	158	26	17	Good

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Notes
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Key to symbols
 Pink modified scheme option
 100m buffer
Reptile survey areas
 No access
 Not within 100m of the Pink Modified Option
 Survey complete
 Survey incomplete

References drawings

Drawing Status
 Suitable for Stage Approval
Mott MacDonald Sweco
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Project Title
 A358 Taunton to Southfields

Drawing Title
 Reptile site locations
 Page 2 of 2

Scale	1:10,000	Designed	GG	Drawn	ER	Checked	KA	Approved	ER
Original Size	A1	Date	10/03/2021	Date	10/03/2021	Date	10/03/2021	Date	10/03/2021
Drawing Number	HE PIN	Originator	MMSJV	Volume	EBD	Project Ref. No. 370774			
000	- DR - LB -		0074		Revision P2				

P2	10/03/2021	Suitable for Stage Approval	ER	KA	ER
REV.	DATE	AMENDMENT DETAILS	ORIG	CHK'D	APP'D

Appendices C – Full survey results

	Survey Date	Start time	End time	Weather conditions				Weather	Common Lizards					Total CL captured per visit	Slow Worms					Total SW recorded per visit	Grass Snakes					Total GS recorded per visit	Adder					Total Add recorded per visit	Total reptiles recorded per visit	
				Start Temp (°C)	End Temp (°C)	Cloud (%)	Wind (0-8)		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown			
Site R1																																		
1	11.04.2017	15:13	15:44	12	12	50	1	Sunny and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2	13.04.2017	11:00	11:40	10	10	100	1	Cool, Cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3	19.04.2017	09:30	10:35	10	10	60	1	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	21.04.2017	10:45	11:15	14	14	70	0	Warm and dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5	25.04.2017	11:35	12:00	11	11	30	0	Light breeze making it cooler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6	27.04.2017	10:30	10:45	10	10	10	0	Calm and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7	03.05.2017	10:30	10:55	11	11	100	3	Overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8	05.05.17	10:30	10:45	13	14	70	2	Overcast and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9	11.05.2017	09:45	10:20	12	12	95	1	Overcast and Humid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10	15.05.17	16:20	16:58	16	16	100	1	Cloudy and Mild	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
11	24.05.17	09:40	10:10	14	14	25	1	Sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12	26.05.17	07:35	07:51	14	14	0	1	Clear and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	04.09.2017	09:45	10:50	17	17	60	1	Cloudy and Mild	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	07.09.2017			16	15		1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15	18.09.17	13:00	13:30	17	17	60	1	Dry light breezy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	20.09.17	15:10	15:30	18	18	95	1	Cloudy and grey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	22.09.17	09:20	09:35	12	12	5	1	Sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	26.09.17	17:10	17:30	18	18	40	0	Still and warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	27.09.17	10:10	10:30	17	17	40	1	Clear, warm morning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	02.10.17	14:50	15:12	15	15	90	2	Overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site R2																																		
1	19.04.2017	0	0	10	10	60	1	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	21.04.2017	0	0	14	14	60	0	Dry and warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	25.04.2017	1	1	11	11	30	2	Light breeze making it cooler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	27.04.2017	0	0	10	10	10	0	Calm and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	02.05.17	0	0	11	11	90	0	Cool and dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	04.05.2017	0	1	13	13	100	1	Cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	08.05.17	1	1	15	15	10	1	Warm and clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	10.05.17	1	1	14	15	20	1	Clear and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	15.05.17	1	1	16	16	100	1	Cloudy and Mild	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	19.05.17	0	0	15	15	100	1	Warm and dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	24.05.17	0	0	15	15	50	1	Sunny / clear / patches of cloud	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	26.05.17	0	0	16	16	0	1	Clear and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	04.09.2017	0	1	17	17	60	2	Breezy and mild	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	07.09.2017	0	1	18	18	40	0	Warm bright and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Survey Date	Start time	End time	Weather conditions				Weather	Common Lizards					Total CL captured per visit	Slow Worms					Total SW recorded per visit	Grass Snakes					Total GS recorded per visit	Adder					Total Add recorded per visit	Total reptiles recorded per visit		
				Start Temp (°C)	End Temp (°C)	Cloud (%)	Wind (0-8)		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown				
15	20.09.17	1	1	18	18	100		Light rain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
16	22.09.17	0	0	12	12	5	1	Sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
17	25.09.17	1	1	17	17	75	1	Overcast and warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
18	26.09.17	1	1	17	17	10	0	Warm and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
19	27.09.17	0	0	18	18	30	1	Clear, warm morning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
20	04.10.2017	0	0	14	14	55	2	Cool and breezy, sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Site R3																																			
1	11.04.2017	16:02	16:20	16	16	50	1	Warm and dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
2	13.04.2017	10:05	10:40	9	9	100	1	Cool and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3	19.04.2017	10:55	11:10	13	13	10	1	Mild	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	21.04.2017	11:55	12:10	15	15	85	1	Cloudy and warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5	24.04.2017	13:15	13:30	12	12	20	1	Light breeze	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6	27.04.2017	11:00	11:15	10	10	35	1	Calm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7	03.05.17	11:00	11:15	11	11	100	3	Overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8	05.05.17	10:00	10:15	13	14	70	1	Overcast and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	11.05.2017	10:30	11:00	12	12	95	1	Overcast and humid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	15.05.17	15:15	15:30	16	16	100	1	Cloudy with minor showers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	24.05.17	10:53	11:08	16	16	50	1	Sunny intervals / clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	26.05.17	08:28	08:35	16	16	0	1	Clear and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	13.09.2017	11:00	11:30	18	18	60	2	Mild and overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	18.09.17	14:41	14:56	18	18	60		Dry light breezy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	20.09.17	14:00	14:30	18	18	90		Cloudy and grey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	22.09.17	09:40	09:55	12	12	5	1	Sunny intervals / clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	25.09.17	15:30	16:15	18	18	75	1	Warm and sunny.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	26.09.17	16:15	16:35	17	17	80	2	Overcast and muggy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	27.07.17	10:50	11:20	18	18	10	0	Warm and clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	18.04.2012	10:05	10:20	13	13	40	1	Sunny and cool, high cloud	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site R5																																			
1	04.09.2017	13:30	14:15	18	18	90	2	Mild and Overcast	0	0	0	0	0	0	2	2	0	5	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9	
2	07.09.2017	13:00	13:55	18	18	90	2	Breezy, mild and cloudy	0	0	0	0	0	0	4	0	0	4	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
3	11.09.2017	15:14	15:45	17	17	60	3	Cool, breezy with sun and clouds	0	0	0	0	0	0	4	0	0	4	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
4	13.09.2017	12:12	12:50	17	17	70	3	Cool and breezy	0	0	0	0	0	0	6	2	0	3	0	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	12
5	18.09.2017	15:50	16:04	17	17	65	1	Bright and cool	0	0	0	0	0	0	2	1	2	8	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13

	Survey Date	Start time	End time	Weather conditions				Weather	Common Lizards					Total CL captured per visit	Slow Worms					Total SW recorded per visit	Grass Snakes					Total GS recorded per visit	Adder					Total Add recorded per visit	Total reptiles recorded per visit			
				Start Temp (°C)	End Temp (°C)	Cloud (%)	Wind (0-8)		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown					
6	19.09.2017	09:30	09:51	13	13	10	1	Sunny and cool	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7	20.09.2017	09:50	10:09	14	14	30	2	Hazy and sunny	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
8	21.09.2017	15:10	15:30	16	16	70	2	Sunny and breezy	0	0	0	0	0	1	4	2	7	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	14		
9	22.09.2017	09:43	10:05	12	12	10	1	Sunny and clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10	25.09.2017	16:00	16:20	16	16	70	2	Sunny with some cloud	0	0	0	0	0	2	0	2	9	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13		
11	26.09.2017	14:00	14:30	17	17	50	1	Sunny with some cloud	0	0	0	0	0	2	1	1	3	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7		
12	27.09.2017	09:30	10:00	16	16	60	2	Warm morning with some cloud	0	0	0	0	0	4	0	2	5	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11		
13	28.09.2017	17:30	18:00	16	15	50	3	Warm with a moderate breeze	0	0	0	0	0	1	1	2	3	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7		
14	29.09.2017	12:17	12:44	15	15	100	1	Mild and high cloud	0	0	0	0	0	3	2	2	2	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9		
15	02.10.2017	16:40	17:05	15	15	100	1	Light spell of drizzle - cloudy - SM contacted requested survey.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
16	03.10.2017	16:10	16:30	14	14	50	1	Mild, sunny and cloudy	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
17	04.10.2017	10:30	11:12	13	13	45	2	Breezy, sunny and cloudy	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
18	05.10.2017	15:34	16:20	15	15	50	2	Cool, breezy, sunny with clouds	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
19	06.10.2017	09:55	10:40	13	13	20	1	Cool and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
20	13.10.2017	12:00	13:00	14	14	40	1	Warm and sunny	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
Site R7																																				
1	02.10.2017	14:00	14:35	15	15	90	2	Overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
2	03.10.2017	12:15	12:25	14	14	70	2	Slight breeze, sun warm, partially cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3	04.10.2017	09:30	09:55	11	11	30	1	Sunny with high clouds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	05.10.2017	17:05	17:19	13	13	15	3	Sunny and bright with breeze	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Site R9																																				
1	10.04.2017	11:52	12:18	13	13	0	2	Cool and sunny with clouds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2	12.04.2017	10:33	10:55	13	13	85	1	Dry and breezy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3	18.04.2017	12:46	13:00	15	15	10	0	Warm and dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	20.04.2017	12:11	12:30	12	12	100	1	Dry and overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5	24.04.2017	13:50	14:05	14	14	100	1	Mild and Dry - slight breeze	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	26.04.2017	11:45	11:50	11	11	30	0	Very cold last night	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	02.05.2017	13:30	13:40	15	15	75	1	Dry hot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	04.05.17	12:15	12:26	14	14	80	1	Overcast and warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	10.05.2017	09:00	09:30	12	12	30	0	Sunny, warm and dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	12.05.2017	10:23	10:30	14	14	90	0	Mild and Bright	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	Survey Date	Start time	End time	Weather conditions				Weather	Common Lizards					Total CL captured per visit	Slow Worms					Total SW recorded per visit	Grass Snakes					Total GS recorded per visit	Adder					Total Add recorded per visit	Total reptiles recorded per visit	
				Start Temp (°C)	End Temp (°C)	Cloud (%)	Wind (0-8)		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown			
11	15.05.17	12:05	12:15	13	13	100	3	Overcast and windy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	18.05.17	11:50	12:00	17	17	100	1	Overcast, warm , light breeze	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	23.05.17	10:39	10:44	13	13	100	1	Humid and clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	25.05.17	07:56	08:01	17	17	0	1	Clear and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	04.09.2017	15:32	15:42	18	18	60	1	Breezy and mild	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	06.09.2017	15:00	15:15	17	17	90	4	Mild and breezy , overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	19.09.17	12:55	13:20	16	16	50		Warm and dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	22.9.17	10:30	10:45	15	15	10	1	Sunny, warm and dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	25.09.17	16:30	16:50	17	17	75	1	Overcast and warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	26.09.17	14:50	15:04	17	17	80	0	Mild and some sunshine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site R11																																		
1	10.04.2017	12:25	12:52	14	14	80	2	Cool and cloudy	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
2	12.04.2017	11:00	11:20	13	13	85	1	Dry and breezy	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
3	18.04.2017	13:05	13:24	15	15	40	0	Dry and sunny	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
4	20.04.2017	12:35	12:50	12	12	100	1	Dry and Mild	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	24.04.2017	14:10	14:25	15	15	100	0	Dry & Mild. No Wind	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
6	26.04.2017	10:50	11:00	11	11	20	0	Cloudy	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7	02.05.2017	13:43	13:53	15	15	60	0	Dry Warm sunny w clouds	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
8	04.05.17	12:29	12:41	14	15	80	1	Overcast and warm	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
9	10.05.2017	09:40	10:10	12	12	30	1	Sunny, warm and dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	12.05.2017	10:31	10:40	14	14	90	0	Mild and Bright	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	15.05.17	12:17	12:30	16	16	100	3	Overcast and windy	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
12	18.05.17	13:15	13:30	16	16	100	0	Overcast warm and calm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	23.05.17	10:19	10:30	13	13	100	1	Humid	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
14	24.05.17	07:40	07:50	14	14	0	0	Clear and sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	04.09.2017	15:50	16:15	18	18	60	0	Mild	0	0	0	0	0	0	1	0	5	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6		
16	06.09.2017	15:35	15:54	17	17	70	0	Mild and cloudy						0	2	0	4	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6		
17	19.09.17	12:20	12:45	16	16	80		Sunny and dry	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1		
18	22.09.17	10:55	11:05	17	17	10	2	Sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	26.09.17	14:18	14:36	17	17	100	0	Mild and bright - cloudy	0	0	0	0	0	0	0	2	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
20	27.09.17	10:30	10:40	17	17	60	2	Warm and dry	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Site R12																																		
1	10.04.2017	13:05	13:40	14	14	90	2	Cool and Sunny with Cloud	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	12.04.2017	14:38	15:11	13	13	85	1	Cool and breezy	0	0	0	0	0	0	2	2	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
3	18.04.2017	12:09	12:40	12	12	15	1	Dry and sunny	0	0	0	0	0	1	1		3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
4	20.04.2017	12:55	13:20	13	13	100	1	Dry and warm	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	

	Survey Date	Start time	End time	Weather conditions				Weather	Common Lizards					Total CL captured per visit	Slow Worms					Total SW recorded per visit	Grass Snakes					Total GS recorded per visit	Adder					Total Add recorded per visit	Total reptiles recorded per visit				
				Start Temp (°C)	End Temp (°C)	Cloud (%)	Wind (0-8)		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown						
5	24.04.2017	14:30	14:45	15	15	100	0	Warm, no wind	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
6	26.04.2017	11:10	11:20	11	11	15	0	Cold last night	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
7	02.05.2017	14:02	14:17	15	15	1	0	Warm and sunny	0	0	0	0	0	0	1	2	1	3	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7			
8	04.05.17	12:45	12:59	14	14	8	1	Overcast and warm	0	0	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5			
9	10.05.2017	10:15	10:45	12	12	30	0	Sunny, warm and dry	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
10	12.05.2017	10:43	10:55	14	14	90	0	Mild and Bright	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
11	15.05.17	12:35	12:57	16	16	100	3	Overcast and windy	0	0	0	0	0	0	1	1	4	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7		
12	18.05.17	11:15	11:30	17	17	20	0	Calm sunny and warm	0	0	0	0	0	0	1	2	1	3	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7		
13	23.05.17	09:40	10:08	13	13	100	1	Cloudy and overcast	0	0	0	0	0	0	0	3	5	4	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12		
14	24.05.17	07:21	07:30	14	14	0	1	Clear and cool	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
15	04.09.2017	16:15	17:00	18	18	60	1	Warm	0	0	0	0	0	0	4	8	4	4	0	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	22		
16	06.09.17	16:10	16:30	17	17	80	3	Mild and breezy, overcast	0	0	0	0	0	0	7	3	2	5	0	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	
17	19.09.17	11:50	12:20	16	16	60	2	Warm and dry	0	0	0	0	0	0	3	2	4	5	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
18	21.09.2017	16:00	16:30	16	16	35	3	Sunny and warm	0	0	0	0	0	0	1	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6		
19	25.09.17	17:00	17:30	17	16	75	2	Overcast and warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
20	26.09.17	13:50	14:05	15	15	85	1	Mild and thin, high cloud	0	0	0	0	0	0	0	1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Site R13																																					
1	11.04.2017	11:40	12:00	14	14	50	2	Sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2	13.04.2017	12:10	12:25	9	9	100	1	Overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	19.04.2017	13:00	13:35	15	15	60	1	Sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	21.04.2017	13:25	13:45	15	15	100	1	Cloudy and dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27.04.2017	13:27	13:51	11	11	90	2	Cool and Bright, Cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	25.04.2017	16:10	16:36	7	7	70		Suboptimal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	27.04.2017	12:45	12:50	11	11	100	1	Cool, light breeze	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8	03.05.17	12:30	12:40	11	12	80	1	Overcast and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	05.05.2017	10:35	11:00	12	12	95	4	Cool and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	09.05.2017	14:24	14:55	13	13	10	1	Sunny and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	11.05.17	12:20	12:50	14	15	80	2	Overcast, mild and humid.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12	16.05.14	10:41	11:15	16	16	100	1	Cloudy, bright, humid with drizzle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	18.05.17	12:55	13:18	17	17	80	1	Warm and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	22.05.17	12:20	12:45	22	22	40	1	Hot and dry.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	24.05.17	11:15	11:30	19	19	40	1	Dry and Warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	26.05.17	07:30	07:55	17	17	0	1	Hot and clear, no rain.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site R14																																					
1	11.04.2017	11:30	12:10	13	13	50	2	Sunny	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	

	Survey Date	Start time	End time	Weather conditions				Weather	Common Lizards					Total CL captured per visit	Slow Worms					Total SW recorded per visit	Grass Snakes					Total GS recorded per visit	Adder					Total Add recorded per visit	Total reptiles recorded per visit				
				Start Temp (°C)	End Temp (°C)	Cloud (%)	Wind (0-8)		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown						
2	13.04.2017	12:00	12:40	9	9	100	1	Overcast	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3	19.04.2017	12:30	13:00	15	15	50	1	Sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	21.04.2017	13:05	13:25	15	15	100	0	Overcast	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
5	27.04.2017	12:30	12:40	11	11	100	2	Overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	03.05.17	12:00	12:30	11	11	80	2	Overcast and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	05.05.2017	10:10	10:25	12	12	95	4	Cool and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	09.05.2017	12:56	13:09	12	12	40	1	Sunny and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	11.05.2017	13:05	13:20	15	15	80	2	Overcast, mild and humid.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	16.05.17	11:35	11:50	16	16	100	1	Mild, cloudy and drizzle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	18.05.17	13:25	13:48	17	17	90	1	Cloudy and mild	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
12	22.05.17	13:00	13:20	24	24	40	2	Cloudy, dry, warm, humid	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
12	24.05.17	10:00	10:20	16	17	40	1	Dry and warm	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
13	26.05.17	08:05	08:15	17	17	0	0	Hot, dry and clear.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	05.09.17	13:11	13:37	16	16	100	1	Overcast and humid	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
15	07.09.17	12:17	12:39	17	17	80	2	Overcast and mild	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
16	14.09.17	14:43	15:26	15	15	40	3	Windy, sunny and patchy cloud	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
17	19.09.17	11:15	11:40	15	15	75	2	Warm and dry	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
18	21.09.17	15:35	15:45	16	16	20	3	Sunny and warm	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
19	25.09.2017	15:40	16:30	14	15	60	2	Damp wet ground, warm and sunny.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
20	29.09.17	10:50	11:01	14	14	90	1	Mild and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site R15																																					
1	11.04.2017	12:35	13:20	14	14	40	2	Sunny	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
2	13.04.2017	11:30	11:50	9	9	100	1	Overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3	19.04.2017	11:53	12:20	15	15	50	1	Sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	21.04.2017	12:30	13:00	15	15	95	0	Cloudy and mild	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5	25.04.2017	17:20	18:08	7	7	10		Cold and suboptimal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	03.05.17	11:30	11:53	11	12	80	1	Overcast and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	05.05.2017	09:30	10:00	12	12	95	4	Cool and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	09.05.2017	13:17	13:30	13	13	30	1	Sunny and cloudy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	11.05.17	13:24	13:45	15	16	80	1	Overcast, mild and humid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	16.05.17	12:00	12:40	16	16	100	1	Mild, cloudy with showers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	18.05.17	13:51	14:16	17	17	100	0	Warm and Overcast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	22.05.17	13:30	13:45	24	24	40	1	Cloudy, warm and humid. No rain.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	24.05.17	10:30	10:45	18	19	40	1	Dry and warm. No rain.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	26.05.17	08:20	08:35	17	17	0	1	Hot and clear. No rain.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Survey Date	Start time	End time	Weather conditions				Weather	Common Lizards					Total CL captured per visit	Slow Worms					Total SW recorded per visit	Grass Snakes					Total GS recorded per visit	Adder					Total Add recorded per visit	Total reptiles recorded per visit
				Start Temp (°C)	End Temp (°C)	Cloud (%)	Wind (0-8)		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		
Site R16																																	
1	10.04.2017	13:20	13:45	12	12	40	2	Sunny	0	0	0	0	0	0	0	3	5	5	0	13	0	0	0	0	0	0	0	0	0	0	0	13	
2	12.04.2017	14:30	15:10	15.5	15.5	10	2	Sunny	0	0	0	0	0	0	2	3	3	2	0	10	0	0	0	0	0	0	0	0	0	0	0	10	
3	18.04.2017	13:30	14:50	12	12	50	1	Sunny	0	0	0	0	0	0	2	0	7	10	0	19	0	0	0	0	0	0	0	0	0	0	0	19	
4	20.04.2017	11:50	12:00	10	10	100	1	Cool, light drizzle earlier	0	0	0	0	0	0	6	0	5	1	0	12	0	0	0	0	0	0	0	0	0	0	0	12	
5	24.04.2017	15:10	16:00	12	12	100	1	Overcast	0	0	0	0	0	0	3	3	7	11	0	24	0	0	0	0	0	0	0	0	0	0	0	24	
6	26.04.2017	16:35	17:10	12	12	75	2	Cloudy, Warm, Dry	0	0	0	0	0	0	0	1	3	4	0	8	0	0	0	0	0	0	0	0	0	0	0	8	
7	02.05.17	12:00	12:45	13	13	85	0	Humid	0	0	0	0	0	0	2	5	10	0	17	0	0	0	0	0	0	0	0	0	0	0	17		
8	04.05.2017	13:45	14:30	13	13	100	1	Cloudy and warm	0	0	0	0	0	0	0	4	8	0	12	0	0	0	0	0	0	0	0	0	0	0	0	12	
9	08.05.17	13:00	13:15	15	15	10	0	Warm and calm	0	0	0	0	0	0	2	5	7	0	14	0	0	0	0	0	0	0	0	0	0	0	0	14	
10	10.05.17	10:47	11:15	14	15	80	1	Sunny and clear	0	0	0	0	0	0	1	3	9	0	13	0	0	0	0	0	0	0	0	0	0	0	0	13	
11	15.05.17	11:21	11:55	13	13	100	2	Overcast and windy	0	0	0	0	0	0	4	5	3	0	12	0	0	0	0	0	0	0	0	0	0	0	0	12	
12	18.05.17	11:51	12:35	15	15	50	0	Warm and calm	0	0	0	0	0	0	4	7	9	0	20	0	0	0	0	0	0	0	0	0	0	0	0	20	
13	23.05.17	11:10	11:40	17	17	100	1	Overcast and humid.	0	0	0	0	0	0	2	5	6	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	13
14	25.05.17	018:20	09:00	17	17	0	1	Clear sky and dry.	0	0	0	0	0	0	0	1	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	
15	05.09.17	11:32	12:35	14	14	100	1	Overcast	0	0	0	0	0	0	3	2	1	3	0	9	0	0	0	0	0	0	0	0	0	0	0	9	
16	07.09.17	09:30	10:08	18	17	40	0	Bright, broken cloud	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
17	14.09.17	14:02	14:35	14	14	50	3	Windy, sunny	0	0	0	0	0	0	2	1	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6	
18	20.09.17	11:40	12:25	16	16	60	2	Cloudy and sun	0	0	0	0	0	0	1	4	7	2	14	0	0	0	0	0	0	0	0	0	0	0	0	14	
19	21.9.17	15:00	15:25	17	17	50	2	Warm breezy	0	0	0	0	0	0	1	0	7	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8	
20	25.09.2017	11:07	11:45	14	14	90	1	Mild and cloudy	0	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	
Site R18																																	
1	10.04.2017	12:40	13:10	14	14	50	2	Sunny	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	
2	12.04.2017	15:20	15:50	15	15	10	2	Sunny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	18.04.2017	13:00	13:10	14	14	20	0	Sunny and calm	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
4	20.04.2017	11:25	11:45	10	10	100	1	Light drizzle earlier	0	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	
5	24.04.2017	16:10	16:50	12	12	100	1	Overcast	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
6	26.04.2017	15:40	16:30	12	12	40	2	Cool, Sunny with clouds	0	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7	02.05.17	11:05	11:45	12	12	80	1	Dry, light breeze	0	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	
8	04.05.2017	12:56	13:39	13	13	100	1	Cloudy	0	0	0	0	0	0	0	3	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5	
9	08.05.17	12:50	12:40	15	15	0	0	Warm and calm	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	
10	10.05.2017	12:05	12:40	12	12	20	0	Sunny clear	0	0	0	0	0	0	1	0	1	2	0	4	0	0	0	0	0	0	0	0	0	0	0	4	
11	15.05.17	10:45	11:15	13	13	100	2	Overcast and windy	0	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
12	18.05.17	11:05	11:45	14	14	60	0	Sunny and Cloudy - Warm	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
13	23.05.17	11:30	12:00	18	18	100	1	Cloudy and humid. No rain.	0	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
14	25.05.17	09:00	09:30	17	18	0	1	Clear and sunny, humid, no rain.	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
15	03.09.17	15:58	16:34	17	17	100	0	Overcast and humid	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
16	06.09.17	11:17	12:04	17	17	60	0	Sunny and warm	0	0	0	0	0	0	0	2	2	0	4	0	1	0	0	0	0	0	0	0	0	0	0	5	
17	11.09.17	15:38	16:16	14	14	50	2	Bright and breezy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Survey Date	Start time	End time	Weather conditions				Weather	Common Lizards					Total CL captured per visit	Slow Worms					Total SW recorded per visit	Grass Snakes					Total GS recorded per visit	Adder					Total Add recorded per visit	Total reptiles recorded per visit					
				Start Temp (°C)	End Temp (°C)	Cloud (%)	Wind (0-8)		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown		Juvenile	Sub Adult	Adult M	Adult F	Unknown							
18	13.09.17	14:45	15:15	14	14	75	1	Partly cloudy, drizzle	0	0	0	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
19	20.09.17	10:20	11:25	16	16	70	4	Cloudy some sun	0	0	0	0	0	0	0	0	0	2	2	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
20	21.09.17	12:20	12:45	16	16	90	1	Warm drizzle	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site R19																																						
1	10.04.2017	12:10	12:30	12	12	60	2	Sunny	0	0	0	0	0	0	0	0	1	6	4	8	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19		
2	12.04.2017	16:00	16:20	13	13	30	2	Sunny	0	0	0	0	0	0	0	0	7	1	4	4	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16		
3	18.04.2017	15:00	15:30	14	14	0	0	Sunny	0	0	0	0	0	0	0	0	3	0	9	5	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17		
4	20.04.2017	11:00	11:00	10	10	100	1	Overcast	0	0	0	0	0	0	0	0	3	0	2	5	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10		
5	24.04.2017	14:10	14:40	12	12	100	1	Overcast	0	0	0	0	0	0	0	0	7	0	4	2	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13		
6	26.04.2017	14:05	15:00	10	10	65	2	Overcast	0	0	0	0	0	0	0	0	0	0	2	10	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12		
7	02.05.17	10:27	10:50	12	12	60	0	Dry, cloudy	0	0	0	0	0	0	0	0	1	5	2	5	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13		
8	04.05.2017	12:25	12:45	13	13	100	1	Cloudy	0	0	0	0	0	0	0	0	0	3	2	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7		
9	08.05.17	11:40	11:50	15	15	0	0	Warm and calm	0	0	0	0	0	0	0	0	0	1	0	8	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9		
10	10.05.2017	11:50	12:00	11	11	10	1	Sunny, clear	0	0	0	0	0	0	0	0	0	3	7	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10		
11	15.05.17	10:25	10:40	13	13	100	2	Overcast and windy	0	0	0	0	0	0	0	0	2	1	1	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4		
12	18.05.17	10:37	10:56	13	13	50	1	Cloudy and warm	0	0	0	0	0	0	0	0	3	3	2	6	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14		
13	23.05.17	12:17	13:00	19	19	100	1	Cloudy, humid and overcast	0	0	0	0	0	0	0	0	9	4	3	7	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	
14	25.05.17	09:00	10:00	18	17	10	1	Clear but humid, no rain.	0	0	0	0	0	0	0	0	3	2	4	13	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22		
15	11.09.17	12:46	01:15	15	15	40	3	Sunny with showers	0	0	0	0	0	0	0	0	2	9	3	7	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21		
16	06.09.17	10:47	11:00	16	16	60	1	Mild, slight breeze									1	9	1	5	16														16			
17	13.09.17	12:39	13:16	14	14	95	2	Drizzly & overcast									1	3	1	7	12														12			
18	20.9.17	09:50	10:20	15	15	95	5	Cloudy and grey	0	0	0	0	0	0	0	0	5	0	1	5	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
19	21.9.16	11:30	11:55	16	16	80	5	Cloudy but warm	0	0	0	0	0	0	0	0	3	1	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
20	05.10.17	11:55	12:15	16	16	80	2	Sunny, damp ground	0	0	0	0	0	0	0	0	0	1	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6		