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**REPTILE PRESENCE / ABSENCE SURVEY &
POPULATION SIZE CLASS ASSESSMENT**

At

Cae'r Glaw Quarry – Proposed Extension Area

Holyhead Road

Gwalchmai

Anglesey

LL65 4PW

NGR: SH 38512 77319

Prepared for: Hogan Aggregates Ltd
Written by: Alasdair Grubb, UES Ecologist
Approved by: Toby Hart, UES Managing Director

A handwritten signature in black ink, appearing to read 'Toby Hart', is positioned below the 'Approved by' line.

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EXECUTIVE SUMMARY

This report is written by Alasdair Grubb BSc ACIEEM, Ecologist for United Environmental Services (UES) Ltd. It provides an assessment of the potential impacts on reptiles as a result of a proposed extension of the area of extraction at the Cae'r Glaw Quarry, Gwalchmaii, the Isle of Anglesey. A preliminary ecological appraisal (PEA) was undertaken in January 2021 (report reference UES02936/01), of the proposed development site, and the habitats present were identified as broadly suitable for reptiles; as a result, further reptile surveys were recommended.

A reptile population size class assessment was undertaken by UES between May and October 2021. The aim of the surveys was to determine the presence or absence of reptiles and determine the population size class of those species present. The methodology of the surveys broadly followed Froglife Advice Sheet 10: Reptile Survey (1999), a standard technique for reptile surveys across the UK.

The proposals are for the extension of the existing granite quarry, together with the consolidation of this new extraction area with the extant mineral planning permission in force on the wider quarry area. The proposed extension has an area of approximately 6.89ha and will be undertaken in five phases over a period of ten years. This proposed extension is an alternative to an extension to the north-west of the quarry which was granted by Anglesey Council in December 2019 (planning reference 48C79J).

The proposed extension boundary has been amended on a number of occasions, in some cases to reduce impacts on ecological receptors. As such, the area surveyed to inform this application covers a greater area than is to be quarried.

The proposed extension area comprises a mosaic of sheep-grazed semi-improved acid grassland, continuous bracken, exposed rock, dense gorse *Ulex spp.* scrub and some areas of neutral / acidic flush. In addition, a drystone wall with some scattered hawthorn *Crataegus monogyna* scrub runs north to south within the western section. The wider survey boundary contains additional areas of purple moor-grass *Molinia caerulea* marshy grassland, valley mire fen and a small area of modified bog. The fen (valley mire), bracken, semi-improved grassland and acidic flush habitats offer high quality foraging opportunities for reptiles, whilst the scattered scrub and drystone walls will offer suitable sheltering opportunities and the areas of exposed rock offer suitable basking opportunities. The undulating topography of the site will offer microhabitat conditions, offering reptiles suitable foraging, basking and sheltering opportunities in most weather conditions.

The site was found to support 'good' populations of common lizard *Zootoca vivipara* (max count of eight), and slow worm *Anguis fragilis* (max count of seven) and 'low' populations of adder *Vipera berus* (max count of one). Juveniles of all species were also recorded on site, indicating that the site is used for breeding. The site can be classified as important for reptiles as a result of its species assemblage and can qualify for the Key Reptile Site Register.

The mitigation and compensation measures are detailed within the Landscape and Ecology Management Plan (LEMP) (report reference UES02936/06) and Ecological Design Strategy (EDS) (report reference UES02936/07) for the site. The proposed mitigation measures ensure that individuals are protected from harm during the works, and the proposed ecological enhancements on site compensate for the loss of habitat, and will create a higher quality habitat for reptiles and other species of wildlife.



This report should be read in conjunction with appendices 1 to 4, which give visual representations of the survey results. It should also be read in conjunction with the following reports, prepared for the site by UES:

- Preliminary Ecological Appraisal (report reference UES02936/01)
- Landscape and Ecology Management Plan (report reference UES02936/06)
- Ecological Design Strategy (report reference UES02936/07)
- Ecological Impact Assessment (reference UES02936/08)



1 INTRODUCTION

1.1 Author, surveyors, and qualifications

This report is compiled and written by Alasdair Grubb BSc ACIEEM, UES Ecologist. Alasdair has over 10 years' experience working in the environmental sector and is an experienced field surveyor. He is competent to undertake botanical surveys up to Phase 1 level and to identify other key ecological issues in relation to development. Other surveyors include:

- Daniel Smith BSc MScRes, UES Graduate Ecologist
- Amanda Beck, UES Assistant Ecologist
- Abigail Miller BA (Hons), UES Graduate Ecologist
- Sarah McLaren BSc, UES Sub-contractor

All surveyors have the knowledge, skills and experience identified within CIEEM's "Competencies for Species Survey: Reptiles" (2013), or were under the supervision of a surveyor with the required competencies.

1.2 Survey objectives

UES were commissioned in April 2021 to conduct site surveys which include the following activities:

- Establish the presence / absence of reptiles on site
- Assess the size class of any reptile population present
- Evaluate the potential impacts of the development on reptiles and associated habitats (if present)
- Provide advice on any potential requirement for mitigation or compensation.

1.3 Proposed development and previous survey information

The proposed development is for the extension of the existing granite quarry at Cae'r Glaw Quarry, together with the consolidation of this new extraction area with the extant mineral planning permission in force on the wider quarry area. The proposed extension has an area of approximately 6.89ha and will be undertaken in five phases.

The proposed extension boundary has been amended on a number of occasions, in some cases to reduce impacts on ecological receptors. As such, the area surveyed to inform this application covers a greater area than is to be quarried.

This proposed extension is an alternative to an extension to the north-west of the quarry (see Appendix 3) which was granted by Anglesey Council in December 2019 (planning reference 48C79J). As part of the previously approved extension, a suite of ecology surveys was undertaken of the proposed extension area, including:

- PEA survey – January 2016



- GCN impact assessment and population size class assessment – March to June 2016
- NVC survey – July 2016
- Reptile presence / absence and population size class assessment survey – April to October 2016
- Bat activity survey – May to August 2016
- Invertebrate survey – August 2016

In addition to the surveys of the proposed extension area, PEA surveys were undertaken of the proposed compensation and restoration areas (see Appendix 3) within the existing quarry in December 2017. These surveys were undertaken to assess the baseline value of these areas and to identify opportunities for habitat creation and management works to compensate for the loss of habitats associated with the extension. A suite of reptile surveys were also undertaken of the compensation and restoration areas to inform the suitability for the translocation of reptiles from the extension area.

Following the surveys of the consented extension area, compensation area and restoration area, a reptile mitigation strategy, LEMP and EDS were prepared to support the application. These reports were prepared to detail the mitigation and compensation measures due to be undertaken as part of the consented extension. A large quantity of the proposed compensatory habitat creation works have already undertaken, despite the consented extension not being undertaken and the permission due being relinquished following the granting of the new application for the alternative extension area.

1.4 Structure of the report

This report sets out the methodology, results, and recommendations in relation to a specific reptile survey. Recommendations are in line with statutory legislation and planning policy objectives.

The report should be read in conjunction with appendices 1 to 4, which give visual representations of the survey results. It should also be read in conjunction with the following reports, prepared for the site by UES:

- Preliminary Ecological Appraisal (report reference UES02936/01)
- Landscape and Ecology Management Plan (report reference UES02936/06)
- Ecological Design Strategy (report reference UES02936/07)
- Ecological Impact Assessment (reference UES02936/08)



2 METHODOLOGY

2.1 Desk study

UES has not been commissioned to undertake a protected species records search at this point. UES have conducted a suite of surveys on adjacent land parcels, including reptile surveys for a previous quarry extension application and off the proposed compensation and mitigation areas. The results of these surveys are included in the desk study.

2.2 Field survey

The methodology of the field survey broadly follows that detailed in Froglife Advice Sheet 10: Reptile Survey (1999), which is used as a standard technique for reptile surveys across the UK.

Three standard survey techniques were employed in the search for reptiles: a walkover survey, *in situ* refugia and artificial refugia. To ascertain presence or likely absence of reptiles on a site, seven site visits are required. If reptiles are found to be present, additional site visits are required to assess the size classes of any reptile population present.

2.2.1 Walkover survey

Surveyors walked slowly between refugia locations, examining suitable basking places to record any incidental sightings of reptiles.

2.2.2 *In situ* refugia

Where present, log piles and discarded potential refugia, such as corrugated sheet materials, were examined during site visits. If considered necessary by the project ecologist, destructive searches of log piles were conducted to ensure no reptiles or other signs of reptiles, such as sloughed skins, were missed. These searches were undertaken with care to ensure that no reptiles were harmed. Log piles were then returned to their original state once the search was complete.

2.2.3 Artificial refugia

Artificial refugia were laid throughout the suitable reptile habitats on site and examined on each site visit.

Refugia consisted of bitumen coated corrugated sheets and felt as well as metal corrugated sheets, all of which measured approximately 0.5m². These refugia warm up quickly and retain heat, thus attracting reptiles. A combination of materials was used as each material has different thermal properties. Metal sheets gain and lose heat quicker than bitumen coated sheets, and therefore each can be more suitable to different reptiles in different situations. The refugia were collected upon completion of the survey work.

Froglife (1999) guidance recommends a density of 10 artificial refugia per hectare of suitable habitat, however it is recognised that other guidelines recommend in some instances a higher



density is needed to fully assess reptile use of a site. At the time of conducting the survey, the total area due to be impacted by the development was approximately 8 hectares, however the survey boundary was extended to include suitable habitat for reptiles immediately adjacent to the development boundary. The habitats within the survey boundary vary in suitability for reptiles; the majority of the eastern section of the site is of high suitability, but the western section has a higher proportion of semi-improved grassland. The areas with higher quality habitat features were identified during the walkover survey, and artificial refugia were laid in these locations. The refugia were spread across the site area in order to cover the variety of habitats and conditions on site. A total of 136 artificial refugia were deployed on site, which was deemed sufficient to establish reptile presence or likely absence on the site.

The refugia were left to bed down for at least 14 days prior to the first checks. During this time, they develop favourable conditions, such as suitable humidity and temperature gradients, and the reptiles become more familiar with them.

During the survey, some of the traps became overgrown / shaded by surrounding vegetation, so were moved to more suitable locations close by (within 5m), on the judgement of the surveyors.

2.3 Population size class assessment

As reptiles were found to be present on site during the initial presence / absence survey, a further eight site visits were conducted in order to assess their population size class.

Froglife (1999) guidelines provide criteria which can be used to estimate a reptile population size class. The survey results were assessed against the table below and each reptile population was assigned the corresponding size class.

Table 1 – Froglife (1999) guidance on reptile population size classes. Figures refer to the maximum number of adults seen by observation and / or under refugia by one person in one day.

SPECIES	POPULATION SIZE CLASS		
	LOW	GOOD	EXCEPTIONAL
Adder <i>Vipera berus</i>	<5	5-10	>10
Grass snake <i>Natrix natrix</i>	<5	5-10	>10
Common lizard <i>Zootoca vivipara</i>	<5	5-20	>20
Slow worm <i>Anguis fragilis</i>	<5	5-20	>20

A low population achieves a score of 1, a good population achieves a score of 2 and an exceptional population achieves a score of 3. These scores are the species assemblage can then be assessed against the following Key Reptile Site criteria in order to determine the relative importance of the site in a wider context:

- Supports three or more reptile species
- Supports two snake species
- Supports an exceptional population of one species
- Supports an assemblage of species scoring at least 4



- Is of particular regional importance due to local rarity (e.g. in the East midlands of England, adders are very rare, so even low populations are important).

If the site meets at least one of the above criteria, it can qualify for the Key Reptile Site Register.

It should be noted that these survey guidelines do not take into account European protected species such as the sand lizard *Lacerta agilis* and the smooth snake *Coronella austriaca*. These species are unlikely to be encountered during a standard reptile survey. If they are anticipated to be present, different procedures are required.

2.4 Timings and weather conditions

Table 2 – Survey dates and weather conditions

Survey No.	Date	Start time	Finish time	Temp (°C)	Cloud Cover (%)	Wind (BFS)	Rain	Surveyors
Refugia laid	05/05/2021	N/A	N/A	N/A	N/A	N/A	N/A	Alasdair Grubb & James Stubbs
1	29/06/2021	10:15	15:00	19	35	3	None	Alasdair Grubb, Sarah McLaren
2	12/07/2021	10:55	15:40	16	80	0-6	Moderate rain for 20 minutes	Amanda Beck
3	20/07/2021	07:00	11:30	24	0	3	None	Alasdair Grubb
4	03/08/2021	11:00	14:30	18	80	3	None	Alasdair Grubb
5	10/08/2021	10:30	13:45	18	85	4	None	Alasdair Grubb
6	12/09/2021	09:30	13:30	18	90	2	None	Daniel Smith
7	26/08/2021	09:40	13:40	17	50	3	None	Amanda Beck
8	01/09/2021	09:45	13:46	14	100	4	None	Abigail Miller, Amanda Beck
9	06/09/2021	10:30	13:30	18	100	1	None	Daniel Smith
10	13/09/2021	11:00	14:00	16	100	2	Light rain for 20 minutes	Alasdair Grubb
11	14/09/2021	10:50	14:30	17	30-50	1	Before survey	Amanda Beck



12	15/09/2021	09:30	13:00	19	10	2	None	Alasdair Grubb
13	17/09/2021	09:45	12:30	17	50	4	None	Daniel Smith
14	20/09/2021	10:00	12:45	15	40	1	Before survey	Daniel Smith
15	12/10/2021	10:30	13:30	14	100	3	None	Alasdair Grubb & Daniel Smith

2.5 Survey limitations

Eighteen refugia were lost during the course of the survey due to the rapid bracken growth; by the end of the survey there were 118 refugia still deployed on site. The total number of traps initially deployed was higher than the 10 per hectare recommended by Froglife (1999) guidance, and the total number of traps collected at the end of the survey period was still sufficient to attain appropriate survey data. Therefore, the loss of eighteen survey traps is not considered to be a limitation to the survey.

The surveys were conducted throughout the recommended reptile survey season, including survey effort through the optimal survey season (April-May and August-September). All surveys were conducted under suitable weather conditions. Therefore, there are considered to be no limitations to the surveys.



3 RESULTS

3.1 Desk study

UES have conducted a suite of surveys on adjacent land parcels, including reptile surveys of the adjacent land parcel that was previously proposed as the quarry extension area and the proposed compensation and restoration areas.

Common lizard, slow worm and adder are known to be present within the adjacent previously consented extension area which was found to support a 'good' population of slow worm (peak count of fifteen) and 'low' populations of common lizard (peak count of one) and adder (peak count of one) recorded during the 2016 reptile surveys. This site can be classified as important for reptiles as a result of its species assemblage and can qualify for the Key Reptile Site Register.

Reptile surveys of the proposed compensation area found the site to support a 'low' population of slow worms (peak count of four, including juveniles) and a 'low' population of common lizard (peak count of two). Due to the species and population sizes present, the compensation area does not meet the criteria to be classified as important for reptiles and does not qualify for the Key Reptile Site Register.

Reptile surveys of the proposed restoration area found the site to support a 'good' population of slow worms (peak count of eight, including juveniles). Due to the species and population sizes present, the restoration area does not meet the criteria to be classified as important for reptiles and does not qualify for the Key Reptile Site Register.

3.2 Habitat assessment

The application site footprint totals approximately 6.89ha and is an extension to the existing quarry site. The survey boundary covered a slightly larger area than this (see Appendix 1 – Site Plan) due to subsequent reductions in the proposed development boundary to reduce the impacts on ecological receptors.

A full description and species list for each habitat present on site is detailed within the PEA report prepared for the site by UES (report reference UES02936/01). With regard to reptiles, the habitat on site varies in suitability. The mosaic of dense scrub, bracken, exposed rock and neutral / acidic flush habitats on site offer high quality foraging opportunities for reptiles. The western section of the site has a high proportion of grazed semi-improved grassland, which offers lower suitability for reptiles. There is a defunct drystone wall which bisects the survey site north-south, which has some scrub scattered along it, particularly at the northern end which provides additional sheltering and basking opportunities for reptiles. Furthermore, the undulating topography of the site will offer microhabitat conditions, offering reptiles suitable foraging and sheltering opportunities in most weather conditions.

The existing quarry lies immediately south of the proposed development site; this has steep rock walls approximately 30m deep, the base is a mixture of graded aggregates, with little vegetation, and a drainage channel which runs off the site to the west. The boundaries of the quarry comprise dense scrub and bracken. There is an area to the south of the western section of the survey boundary (approximately 4ha in area) which is a mosaic of heathland, bracken and scrub; the area has previously been surveyed for reptile population size class in 2016.



The habitats surrounding the survey site to the west, north and east are dominated by grazed pastureland, which have some areas of exposed rock and isolated areas of bracken.

In summary, the habitats within the survey boundary comprise a mosaic of bracken, semi-improved acid grassland, exposed rock, dense scrub and areas of acidic / neutral mire. The bracken, dense scrub and the neutral / acidic flush habitats offer high quality foraging and commuting opportunities for reptiles. Furthermore, the undulating topography of the site will offer microhabitat conditions, offering reptiles suitable foraging, basking and sheltering opportunities in most weather conditions. The western section of the site has larger areas of semi-improved grassland, which offers fewer opportunities for reptiles.

3.3 Population size class assessment

A visual representation of the results from the PSCA surveys can be found at Appendix 1 – Site Plan.

3.3.1 Slow worm

Table 3 – Slow worm survey results

SITE VISIT N ^o	TOTAL N ^o OF ADULTS	TOTAL N ^o OF JUVENILES	TOTAL N ^o OBSERVED
1	4	0	4
2	4	0	4
3	1	0	1
4	2	0	4
5	6	0	6
6	2	0	4
7	2	0	2
8	0	0	0
9	6	1	7
10	2	1	3
11	1	0	1
12	4	2	6
13	4	2	6
14	2	0	2
15	0	6	6

A maximum peak count of seven slow worms (six adults and one juvenile) was recorded during the 9th site visit on 6th September 2021. The site therefore supports a good population of slow worms. Both adults and juveniles were recorded within the site boundary, indicating that the site is used for breeding purposes.

All individuals were recorded under artificial refugia. The majority of slow worms were found in the south-eastern section of the site, generally along the edges of areas of continuous bracken.



3.3.2 Common lizard

Table 4 – Common lizard survey results

SITE VISIT N ^o	TOTAL N ^o OF ADULTS	TOTAL N ^o OF JUVENILES	TOTAL N ^o OBSERVED
1	8	0	8
2	0	0	0
3	1	0	1
4	1	0	1
5	0	5	5
6	4	0	4
7	0	3	3
8	0	0	0
9	1	1	2
10	0	2	2
11	2	2	4
12	1	3	4
13	3	1	4
14	1	0	1
15	0	0	0

A peak count of eight adult common lizards was recorded during the 1st site visit on 29th June 2021. The site therefore supports a good population of common lizards. Both adults and juveniles were recorded within the site boundary, indicating that the site is used for breeding purposes.

Both adults and juveniles were recorded on site. Individuals were recorded sheltering underneath artificial refugia and basking on top of refugia and vegetation. They were distributed throughout the site across various habitats.

3.3.3 Adder

Table 5 – Adder survey results

SITE VISIT N ^o	N ^o OF MALES	N ^o OF FEMALES	TOTAL N ^o OF ADULTS	N ^o OF JUVENILES	TOTAL N ^o OBSERVED
1	0	1	1	0	1
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	1	1	0	1
7	0	0	0	0	0
8	0	0	0	0	0



9	0	0	1 (skin)	0	1
10	0	1	1	0	1
11	0	1	1	0	1
12	0	0	0	1	1
13	0	0	0	0	0
14	0	0	0	0	0
15	0	0	0	0	0

A peak count of one adder was recorded during six of the site visits. The site therefore supports a low population of adders.

Individuals were recorded beneath refugia and amongst vegetation. Most observations were of a single female adder, however a single juvenile was recorded during the 12th site visit on 15th September 2021, suggesting adder also breed on site. They were distributed throughout the eastern section of the site, generally associated with habitats close to bracken and neutral / acid mire.

3.3.4 Other wildlife

Low populations of palmate newt *Lissotriton helveticus*, common frog *Rana temporaria* and common toad *Bufo bufo* were recorded under artificial refugia during the survey, in the western and northern sections of the survey boundary. A single bank vole was also recorded using one of the refugia.



4 EVALUATION AND RECOMMENDATIONS

4.1 Evaluation of results

The habitats within the survey boundary comprise a mosaic of bracken, semi-improved acid grassland, exposed rock, dense scrub and neutral / acidic flushes. The bracken, dense scrub and neutral / acidic flushes on site offer high quality foraging and commuting opportunities for reptiles. The undulating topography of the site will offer microhabitat conditions, offering reptiles suitable foraging, basking and sheltering opportunities in most weather conditions.

The site supports a good population of common lizards and slow worms and a low population of adders. Juveniles of all species were also recorded on site, confirming that the site is used for breeding. Reptiles were recorded across the site, however the majority of recordings were associated with the eastern and south-eastern sections of the survey area, many of which fall outside of the proposed development boundary.

The site can be classified as important for reptiles as a result of its species assemblage (three species of reptiles and a score of at least 4). The location of individual reptiles is shown on the site plan at Appendix 1.

4.2 Impacts

If reptiles are present during the quarrying works, they could be directly harmed. The development will also result in a loss of suitable habitat.

4.3 Mitigation and compensation measures

Reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) against killing and injury, and against sale and transporting for sale.

Impacts associated with the proposed development include loss of habitat and the risk of harm to individuals during the development. The project will be delivered in phases to reduce the immediate impact on reptiles using the site, and to allow them to move to other suitable areas.

A detailed reptile mitigation strategy is included within the Ecological Design Strategy (EDS) which has been produced for the site in order to safeguard any reptiles present within the proposed development boundary at the time of the development works (report reference UES02936/07). These measures involve the installation of one way fencing at the perimeter of the site followed by a period of trapping and translocation to a suitable receptor site.

Furthermore, the Landscape and Ecological Management Plan (LEMP) has been produced for the site in order to detail the proposed compensation measures which will offset any loss of habitat as a result of the development proposals (report reference UES02936/06). Much of the proposed habitat creation and enhancement works (to improve habitats for reptiles specifically) have recently been conducted within the existing quarry site boundary, partly in order to ensure the proposed receptor site is ready for translocation. The LEMP details continued management of these areas.



5 CONCLUSION

The application site provides good quality habitat for reptiles and three species of reptile were recorded across the site throughout the surveys (however the majority of records were in the eastern section of the survey boundary and fall outside of the proposed development boundary). The site supports a good population of common lizards and slow worms and a low population of adders. Juveniles of all species were also recorded on site, confirming that the site is used for breeding. The site has been classified as important for reptiles.

Once completed, the proposed quarry extension, will result in the loss of an area of suitable reptile habitat. Mitigation and compensation measures are included as part of the LEMP and EDS which have been prepared for the site. The proposed mitigation measures will ensure that individuals are protected by translocating them to a suitable receptor site prior to the commencement of quarrying activities. Habitat creation and enhancements within the wider quarry site will offset any loss of habitat, and create a higher quality habitat for reptiles and other species of wildlife.



6 REFERENCES

Chartered Institute of Ecology and Environmental Management (2013). *Competencies for Species Survey: Reptiles*.

Edgar, P., Foster, J and Baker, J (2010). *Reptile habitat management handbook*. Amphibian and reptile conservation, Bournemouth.

Froglife. (1999). *Reptile survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10. Froglife: Halesworth.

Gent, A. and Gibson, S. (1998). *Heptero fauna Workers' Manual*. Joint Nature Conservation Committee, Peterborough.

Herefordshire Amphibian and Reptile Team and Herefordshire Nature Trust (2008 – 2010). *Reptile habitat management: Guidelines for landowners*. HART, Hereford.

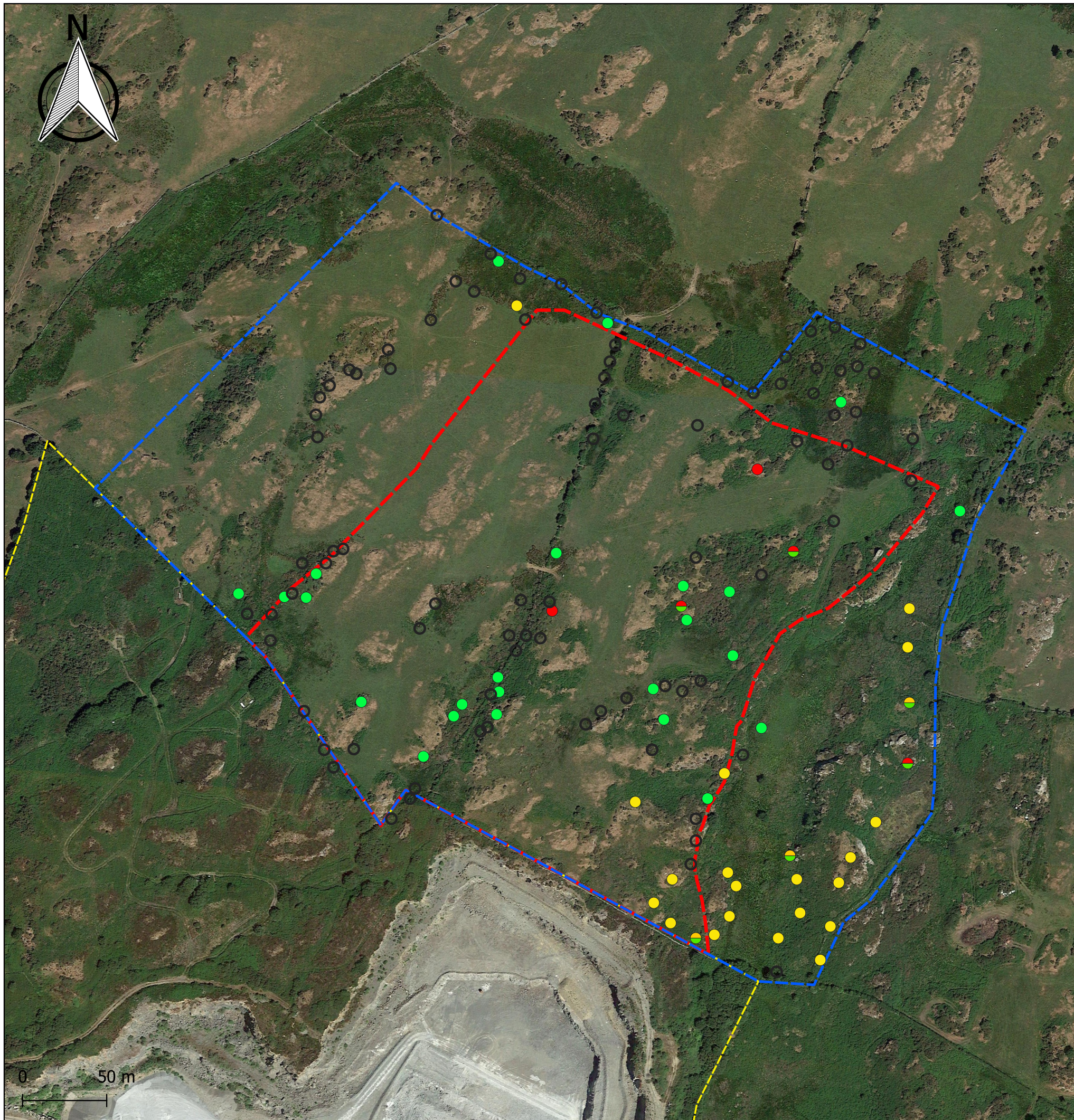
Natural England (2011). *Reptile mitigation guidelines*. Natural England Technical Information Note TIN102. Natural England, Peterborough.

Welsh Government (2018). *Planning Policy Wales, Edition 10*



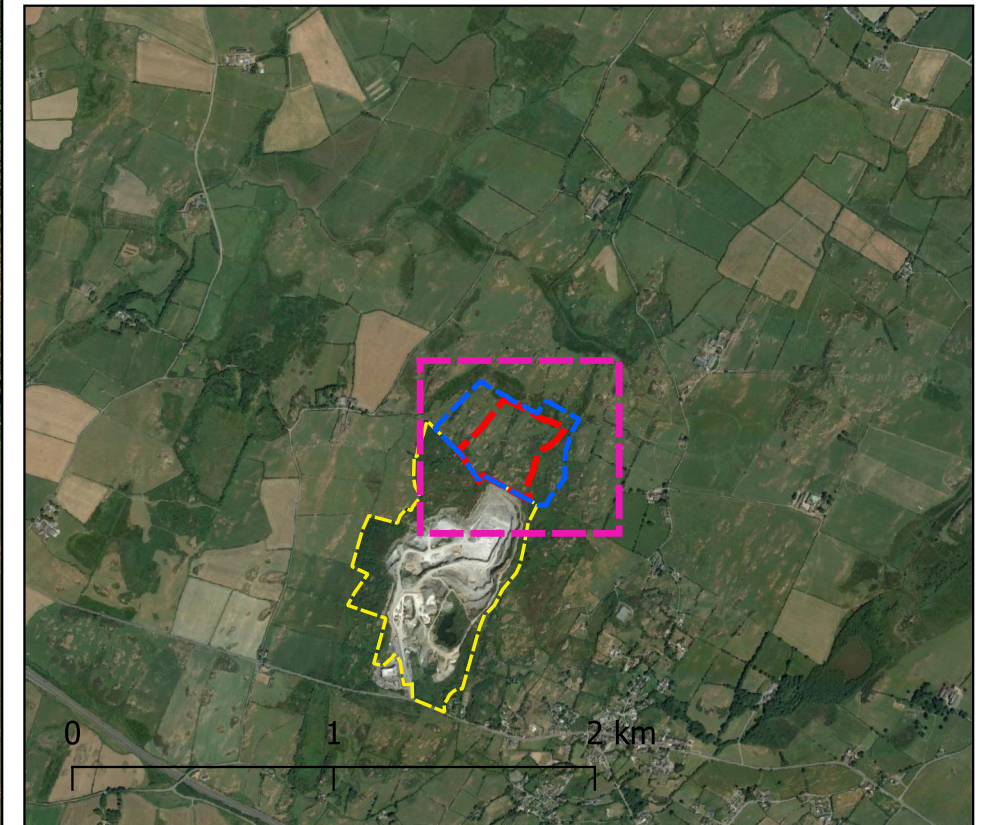
APPENDICES

Appendix 1 – Site plan






Site Plan







Site: Gwalchmai Quarry
 NGR: SH 38485 77366
 Author: Alasdair Grubb
 Date: 01/11/2022



KEY:

-  Development boundary
-  Survey boundary
-  Existing quarry site boundary

Survey sheet locations

-  No results
-  Adder
-  Common lizard
-  Adder & Common lizard
-  Slow worm & Common lizard
-  Slow worm

THIS PLAN IS BASED UPON MAP DATA © 2022 Google, Imagery © 2022 Google

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Appendix 2 – Aerial photographs

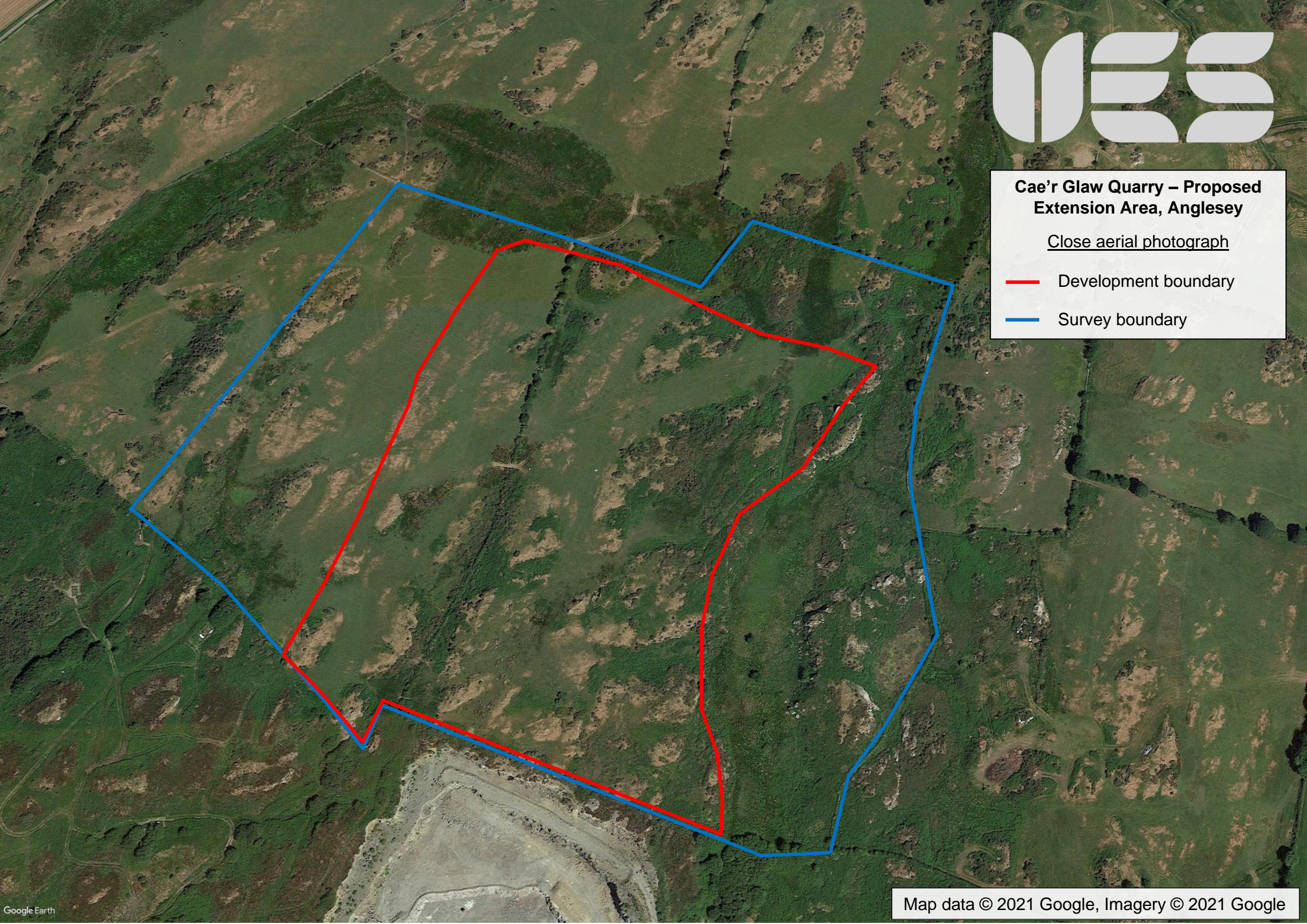


**Cae'r Glaw Quarry – Proposed
Extension Area, Anglesey**

Close aerial photograph

— Development boundary

— Survey boundary

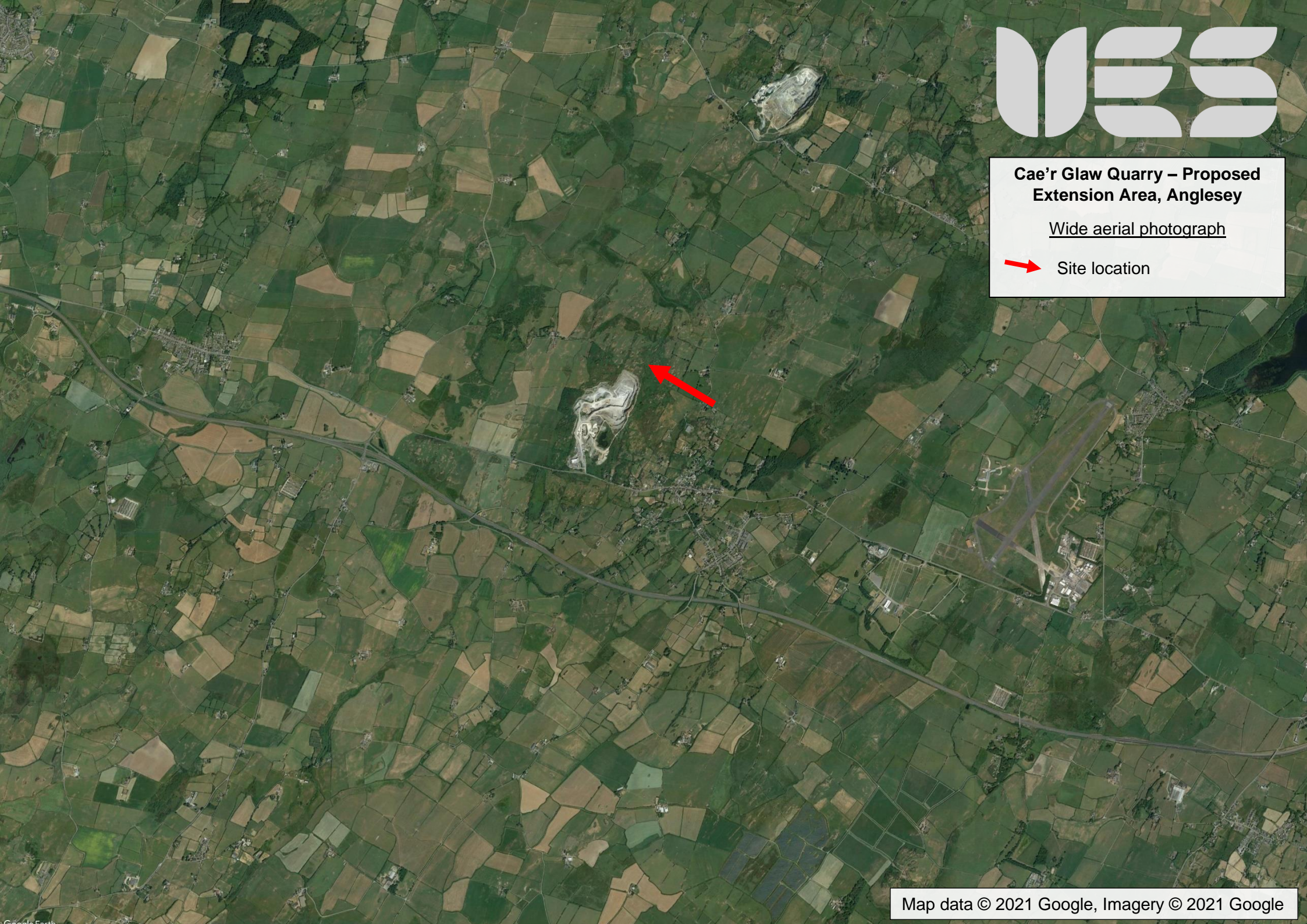




**Cae'r Glaw Quarry – Proposed
Extension Area, Anglesey**

Wide aerial photograph

 Site location





Appendix 3 – Photographs



Photo 1. Showing a slow worm observed under one of the artificial refugia on site.



Photo 2. Showing a close up of a slow worm observed on site.



Photo 3. Showing an adder observed under one of the artificial refugia on site.



Photo 4. Showing a close up of a juvenile adder observed on the site.



Appendix 4 – Statutory and planning context

STATUTORY AND PLANNING CONTEXT

Ecological assessments

Ecological assessments play an important part within the planning context; they include an initial assessment which highlights any specific interests of a site. From the initial site assessment, the surveyor assesses the suitability of habitats within the site to support protected species and makes recommendations for further survey works if required. The following paragraphs provide a brief interpretation of the legislative protection that is relevant to the findings of this report.

Habitats

Section 7 of the Environment Act (Wales) places a duty on Welsh Ministers to publish, review and revise lists of types of habitats and species in Wales which they consider are of key significance to sustain and improve biodiversity. The Welsh Ministers must also take all reasonable steps to maintain and enhance the habitats published in these lists, and encourage others to take such steps.

Amphibians

Great crested newts

Great crested newts (GCN) *Triturus cristatus* and their habitat (aquatic and terrestrial) are afforded full protection by the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. If both national and international legislation are taken together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture GCN
- Deliberately, intentionally or recklessly disturb GCN in such a way to be likely to significantly affect:
 - their ability to survive, breed, reproduce, rear or nurture their young
 - their ability to hibernate or migrate
 - their local distribution or abundance
- Deliberately, intentionally or recklessly take or destroy the eggs of GCN
- Damage or destroy breeding sites or resting places of GCN
- Intentionally or recklessly disturb sheltering GCN, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead GCN, any part of GCN or anything derived from GCN

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

GCN are also protected by the Protection of Animals Act 1911, which prohibits cruelty and mistreatment. Releasing a GCN in such a way as to cause undue suffering may be an offence under the Abandonment of Animals Act 1960.

In addition to the above, there are various statutory provisions relating to the transport of animals, designed to ensure their welfare. GCN are also listed under Section 7 of the Environment (Wales) Act 2016.

It is important to identify the presence of GCN individuals and also to identify suitable habitat on sites so that legal obligations regarding this species can be observed. If a survey identifies the presence of GCN on the site, an assessment of the population size class is required. This can then inform a mitigation scheme, which would need to be developed in liaison with the local Natural Resources Wales (NRW) team, and which minimises direct threats to newts and compensates for any loss of habitat. A licence issued by NRW is required for the legal implementation of a mitigation scheme.

An NRW mitigation licence application requires a Mitigation Method Statement and a Reasoned Statement of Application. The Mitigation Method Statement contains details of the proposed mitigation works. The Reasoned Statement needs to provide a rational and reasoned justification as to why the proposed development meets the requirements of the Conservation (National Habitats & c.) regulations 1994, namely Regulations 44(2)(e), (f) or (g), and 44(3)(a).

Other amphibians

More common British amphibians, such as common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Triturus vulgaris* and palmate newt *Triturus helveticus* are protected only by Section 9(5) of the Wildlife and Countryside Act 1981 (as amended). This section prohibits sale, barter, exchange, transporting for sale and advertising to sell or to buy.

The above named species are also listed as UK Species of Conservation Concern. Due to general declines in most British amphibian species in recent years, many local authorities require amphibian surveys as a planning condition, or as part of environmental information submitted as part of a planning application, even where the presence of GCN is ruled out.

Natterjack toad *Bufo calamita* and pool frog *Pelophylax lessonae* are also offered the same level of protection as GCN, through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.

Natterjack and common toad are also listed under Section 7 of the Environment (Wales) Act 2016.

Water bodies that support all five (more common) species of British amphibians in high numbers, may be afforded protection in local plans, as Sites of Importance for Nature Conservation (SINC), or a similar equivalent, for sites of local importance. A site may require statutory protection as a Site of Special Scientific Interest (SSSI).

Reptiles

Common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus* are protected under the Wildlife and Countryside Act 1981 (as amended). They are listed as a Schedule 5 species therefore part of Section 9(1) and section 9(5) apply. The Countryside and Rights of Way Act 2000 also strengthens their protection. It is offence to:

- Intentionally or recklessly kill or injure any of the species listed above
- Sell, offer, advertise or transport for sale a live or dead animal of the species listed above

If a proposed development is likely to have an impact on these reptiles the local statutory nature conservation organisation must be consulted.

Sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* receive full protection under the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017. Read together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture any sand lizards or smooth snakes
- Deliberately, intentionally or recklessly disturb sand lizards or smooth snakes in such a way to be likely to significantly affect:
 - their ability to survive, breed, reproduce, rear or nurture their young
 - their ability to hibernate or migrate
 - their local distribution or abundance
- Deliberately, intentionally or recklessly take or destroy the eggs of such an animal
- Damage or destroy breeding sites or resting places of such animals
- Intentionally or recklessly disturb sheltering sand lizards or smooth snakes, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead sand lizards or smooth snakes, any part of such an animal or anything derived from such an animal

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

All reptile species (except for smooth snake) are also listed under Section 7 of the Environment (Wales) Act 2016.

Planning Policy

National planning guidance is issued in the form of Planning Policy Wales (PPW - 2018). The most relevant sections are included in Chapter 6: Distinctive and Natural Places. This chapter details the policies on issues such as the protection of trees, woodlands, species, and designated sites. The document is free and available to view online