

**PINE CLOSE, WESTERGATE
WEST SUSSEX**

PRELIMINARY ECOLOGICAL ASSESSMENT

A Report to: WILSON HOUSE LTD

Report No: RT-MME-117197 Rev A

Date: September 2014



Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ

E-mail: [REDACTED] Web: www.middlemarch-environmental.com

REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development".

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	09/09/2014	Maral Miri CEnv, MCIEEM (Senior Ecological Consultant) Stephanie Bradbury BSc (Hons) (Ecological Project Officer)	Colin Bundy MCIEEM (Associate Director)	Dr Philip Fermor MCIEEM, CEnv (Managing Director)
Rev A	10/09/2014	Stephanie Bradbury BSc (Hons) (Ecological Project Officer)	Tom Docker MSc MCIEEM (Ecological Project Manager)	Dr Philip Fermor MCIEEM, CEnv (Managing Director)

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 24 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

Middlemarch Environmental Ltd was commissioned by Wilson House Ltd to carry out an initial ecological appraisal at the site of a proposed residential development at Pine Close in Westergate, West Sussex. To fulfil this brief an ecological desk study and a walkover survey (in accordance with Phase 1 Habitat Survey methodology) were undertaken.

The ecological desk study identified no nature conservation sites within a 1 km radius of the survey area and provided records of protected and notable species, including bats, other terrestrial mammals, herpetofauna, birds, invertebrates and plants.

The walkover survey was undertaken on 21st May 2014 by Maral Miri, Senior Ecological Consultant. Pine Close provides access to the site from the western boundary at Westergate Street. Site clearance works had commenced prior to the field survey and therefore, the site was dominated by bare ground. A small area of semi-improved grassland was located in the south-west and a patch of tall ruderal vegetation was present on the southern boundary. A couple of scattered trees were also present and a number of scattered trees overhang the site boundaries, including semi-mature and mature specimens.

The key ecological features on and surrounding the site include the semi-mature to mature trees which have intrinsic value and provide suitable nesting habitat for birds and foraging/commuting features for bats. The semi-improved grassland and tall ruderal vegetation are considered to offer suitable foraging and terrestrial habitat for other mammals and reptiles.

In order to ensure compliance with wildlife legislation and relevant planning policy, the following recommendations are made:

- R1 Habitat Loss and Enhancement:** Biodiversity enhancement measures should be incorporated into the landscaping scheme of any proposed works to maximise the ecological value of the site.
- R2 Notable Habitats:** If possible, the development proposals should be designed in such a way to allow for the retention of the existing semi-mature/mature trees (on and overhanging the site). If this is not possible, appropriate replacement planting should be incorporated into the soft landscape scheme. Only native and/or wildlife attracting species should be planted.
- R3 Trees:** Any trees on or overhanging the site, which are to be retained as a part of any proposed works should be protected in accordance with British Standard 5837: 2012 "Trees in relation to design, demolition and construction - recommendations". Protection should be installed on site prior to the commencement of any works on site.
- R4 Terrestrial Mammals including Badger and Hedgehog:** Any excavations that need to be left overnight should be covered or fitted with mammal ramps to ensure that any animals that enter can safely escape. Any open pipework with an outside diameter of greater than 120 mm must be blanked off at the end of each work day to prevent badgers entering/becoming trapped.
- R5 Reptiles:** To avoid harming any reptiles that may be present on site, the vegetation must be strimmed and the topsoil removed under the supervision of a suitably experienced ecologist. This must be completed during the active period for reptiles which generally extends between April and September. Any habitat features that are to be decommissioned must be dismantled by hand under supervision.
- R6 Nesting Birds:** Vegetation clearance should be undertaken outside the nesting bird season. The nesting bird season is weather dependent but generally extends between March and September inclusive. If this is not possible then any vegetation that is to be removed or disturbed should be checked by an experienced ecologist for nesting birds immediately prior to works commencing. If birds are found to be nesting any works which may affect them would have to be delayed until the young have fledged and the nest has been abandoned naturally.

CONTENTS

1. INTRODUCTION	4
1.1 PROJECT BACKGROUND	4
1.2 SITE DESCRIPTION AND CONTEXT	4
1.3 DOCUMENTATION PROVIDED	4
2. METHODOLOGIES.....	5
2.1 DESK STUDY	5
2.2 PHASE 1 HABITAT SURVEY.....	5
3. DESK STUDY RESULTS	6
3.1 INTRODUCTION	6
3.2 NATURE CONSERVATION SITES.....	6
3.3 PROTECTED / NOTABLE SPECIES.....	6
3.4 INVASIVE SPECIES.....	7
4. PHASE 1 HABITAT SURVEY	8
4.1 INTRODUCTION	8
4.2 SURVEY CONSTRAINTS AND LIMITATIONS.....	8
4.3 HABITATS.....	8
4.4 FAUNA	9
4.5 INVASIVE PLANT SPECIES	9
5. DISCUSSIONS AND CONCLUSIONS	10
5.1 SUMMARY OF PROPOSALS	10
5.2 NATURE CONSERVATION SITES.....	10
5.3 HABITATS.....	10
5.4 PROTECTED/NOTABLE SPECIES	11
5.5 INVASIVE PLANT SPECIES	12
6. RECOMMENDATIONS.....	13
6.1 NATURE CONSERVATION SITES.....	13
6.2 HABITATS.....	13
6.3 PROTECTED / NOTABLE SPECIES.....	13
6.3 INVASIVE PLANT SPECIES	14
7. DRAWINGS.....	15
8. PHOTOGRAPHS	17
REFERENCES AND BIBLIOGRAPHY.....	18
APPENDICES	19
APPENDIX 1	20
APPENDIX 2	22

1. INTRODUCTION

1.1 PROJECT BACKGROUND

Middlemarch Environmental Ltd was commissioned by Wilson House Ltd to undertake an initial ecological appraisal of the site of a proposed development at Pine Close in Westergate, West Sussex. This assessment is required to inform a planning application associated with the construction of a pair of semi-detached houses (Plots 1A and 1B) with associated hardstanding and soft landscaping.

Middlemarch Environmental Ltd has previously conducted the following work at this site and land immediately adjacent for Wilson House Ltd:

- Extended Phase 1 Habitat Survey, Report RT-MME-111856;
- Reptile Survey, Report RT-MME-112385;
- Reptile Mitigation Strategy, Report RT-MME-112844; and,
- Preliminary Ecological Assessment, Report RT-MME-116948 (Revised June 2014).

To assess the existing ecological interest of the site an ecological desk study was carried out, and a walkover survey was undertaken on the 21st May 2014.

1.2 SITE DESCRIPTION AND CONTEXT

The development site is located at Pine Close in Westergate, West Sussex. It is irregular in shape, measures approximately 0.1 ha in size and is centred at National Grid Reference SU 939 049.

Pine Close provides access to the site from the western boundary at Westergate Street. Site clearance works had commenced prior to the field survey and therefore, the site was predominantly bare ground. A small area of semi-improved grassland was located in the south-west and a patch of tall ruderal vegetation was present on the southern boundary. A couple of scattered trees were also present and a number of scattered trees overhang the site boundaries, including semi-mature and mature specimens.

The wider landscape is dominated by a mixture of residential buildings and agricultural land, interspersed with school grounds and recreational grounds.

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1 and provided in Chapter 7.

Document Name / Drawing Number	Author
Location Plan: 1558 L02 Rev A	ADP Architects Ltd
Proposed Site Layout: 1558 200 Rev A	ADP Architects Ltd

Table 1.1: Documentation Provided by Client

2. METHODOLOGIES

2.1 DESK STUDY

An ecological desk study was undertaken to determine the presence of any designated nature conservation sites and protected species that have been recorded within a 1 km radius of the site. This involved contacting appropriate statutory and non-statutory organisations which hold ecological data relating to the survey area. Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by these organisations.

The consultees for the desk study were:

- Natural England - *MAGIC* website for statutory conservation sites; and
- Sussex Biodiversity Record Centre.

The data collected from these consultees is discussed in Chapter 3. Selected raw data are provided in Appendix 1. In compliance with the terms and conditions relating to its commercial use, the full desk study data is not provided within this report.

The desk study data also included a review of relevant local planning policy with regard to biodiversity and nature conservation.

2.2 PHASE 1 HABITAT SURVEY

The walkover survey was conducted following the Phase 1 Habitat Survey methodology of the Joint Nature Conservation Committee (JNCC, 2010) and the Institute of Environmental Assessment (IEA, 1995). Phase 1 Habitat Survey is a standard technique for classifying and mapping British habitats. The aim is to provide a record of habitats that are present on site. During the survey, the presence, or potential presence, of protected species was noted.

Whilst every effort is made to notify the client of any plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981, as amended) present on site, it should be noted that this is not a specific survey for these species.

Data recorded during the field survey are discussed in Chapter 4.

3. DESK STUDY RESULTS

3.1 INTRODUCTION

All relevant ecological data provided by the consultees was reviewed and the results from these investigations are summarised in Sections 3.2 and 3.3. Selected data are provided in Appendix 1.

3.2 NATURE CONSERVATION SITES

Reference to the Multi Agency Geographical Information for the Countryside (MAGIC) website and the data provided by the local biological records centre indicates that no statutory nature conservation sites and no non-statutory nature conservation sites occur within a 1 km radius of the survey area.

3.3 PROTECTED / NOTABLE SPECIES

Table 3.2 and the following text provide a summary of protected and notable species records within a 1 km radius of the study area. It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area.

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Study Area	Species of Principal Importance?	Local BAP?	Legislation / Conservation Status
Mammals - bats						
Pipistrelle bat <i>Pipistrellus</i> sp.	2	2010	830 m north-east	#	#	ECH 4, WCA 5, WCA 6
Mammals – other						
Hedgehog <i>Erinaceus europaeus</i>	3	2000	790 m north-east	✓	-	WCA 6
Amphibians						
Great crested newt <i>Triturus cristatus</i>	3	2013	510 m west	✓	✓	ECH 2, ECH 4, WCA 5
Reptiles						
Grass snake <i>Natrix natrix</i>	2	2001	120 m north-east	✓	✓	WCA 5 S9(1) WCA 5 S9(5)
Adder <i>Vipera berus</i>	1	1999	110 m south-west	✓	✓	WCA 5 S9(1) WCA 5 S9(5)
Birds						
Lapwing <i>Vanellus vanellus</i>	1	2011	Potentially within 1 km*	✓	-	Red
Turtle dove <i>Streptopelia turtur</i>	1	2003	Potentially within 1 km*	✓	-	Red
Kingfisher <i>Alcedo atthis</i>	2	2012	Potentially within 1 km*	-	-	WCA1i
Hobby <i>Falco subbuteo</i>	1	2012	Potentially within 1 km*	-	-	WCA1i
Grey partridge <i>Perdix perdix</i>	5	2012	Potentially within 1 km*	-	-	WCA1ii
Corn bunting <i>Emberiza calandra</i>	4	2012	Potentially within 1 km*	✓	-	Red
Firecrest <i>Regulus ignicapilla</i>	1	2011	Potentially within 1 km*	-	-	WCA1i
Cetti's warbler <i>Cettia cetti</i>	8	2012	Potentially within 1 km*	-	-	WCA1i
Barn owl <i>Tyto alba</i>	2	2007	Potentially within 1 km*	-	-	WCA1i

Table 3.2: Summary of Protected/Notable Species Records Within 1 km of Survey Area (cont)

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Study Area	Species of Principal Importance?	Local BAP?	Legislation / Conservation Status
Invertebrates						
Purple emperor <i>Apatura iris</i>	2	2003	280 m south	-	-	WCA 5
White admiral <i>Limenitis camilla</i>	1	1998	Potentially within 1 km*	✓	✓	IUCN - VU
Plants						
Musk stork's-bill <i>Erodium moschatum</i>	1	2009	100 m south	-	-	SRSI
Arum <i>Arum italicum subsp. neglectum</i>	1	2005	650 m north-west	-	-	IUCN - NT
Box <i>Buxus sempervirens</i>	1	2006	Potentially within 1 km*	-	-	SRSI
Key: *: Grid reference provided to four figures only. #: Species dependent. ECH 2: Annex II of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora. Animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation. ECH 4: Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora. Animal and plant species of community interest in need of strict protection. WCA 1i: Schedule 1 Part 1 of Wildlife and Countryside Act 1981 (as amended). Birds protected by special penalties at all times. WCA 1ii: Schedule 1 Part 2 of Wildlife and Countryside Act 1981 (as amended). Birds protected by special penalties during close season. WCA 5: Schedule 5 of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds). WCA 5 S9(1): Schedule 5 Section 9(1) of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds). Protection limited to intentional killing, injury or taking. WCA 5 S9(5): Schedule 5 Section 9(5) of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds). Protection limited to selling, offering for sale, processing or transporting for purpose of sale, or advertising for sale, any live or dead animal, or any part of, or anything derived from, such animal. WCA 6: Schedule 6 of Wildlife and Countryside Act 1981 (as amended). Animals which may not be killed or taken by certain methods. IUCN – NT: Near Threatened species. IUCN – VU: Vulnerable species. SRSI: Sussex Rare Species Inventory. Red: Species of high conservation concern. Species of Principal Importance: Species of Principal Importance for Nature Conservation in England. Local BAP: Sussex Biodiversity Action Plan. Note. This table does not include reference to the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats), the Bonn Convention on the Conservation of Migratory Species of Wild Animals or the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).						

Table 3.2 (cont'd): Summary of Protected/Notable Species Records Within 1 km of Survey Area

3.4 INVASIVE SPECIES

The desk study provided no records of invasive species within a 1 km radius of the study area. It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area.

4. PHASE 1 HABITAT SURVEY

4.1 INTRODUCTION

The results of the Phase 1 Habitat Survey are presented in the following sections. An annotated Phase 1 Habitat Survey Drawing (Drawing C117197-01 Rev A) is provided in Chapter 7. This drawing illustrates the location and extent of all habitat types recorded on site. Any notable features or features too small to map are detailed using target notes.

The survey was carried out on 21st May 2014 by Maral Miri, Senior Ecological Consultant. Table 4.1 details the weather conditions at the time of the survey.

Parameter	Condition
Temperature (°C)	23
Cloud (%)	10
Wind (Beaufort)	F0
Precipitation	Dry

Table 4.1: Weather Conditions During Field Survey

4.2 SURVEY CONSTRAINTS AND LIMITATIONS

There were no constraints experienced during the site assessment.

4.3 HABITATS

The following habitat types were recorded on site during the field survey:

- Bare ground;
- Hardstanding;
- Scattered trees;
- Semi-improved grassland; and,
- Tall ruderal vegetation.

Bare ground

Bare ground dominated the eastern part of the development site due to the site clearance and topsoil stripping activities prior to the field survey (Plate A1). A previous survey of the site indicates that this area was covered by tall ruderal vegetation prior to the commencement of construction activities.

Hardstanding

Pine Close provides access to the site from the western boundary at Westergate Street (Plate A2). The road extends into the centre of the site. The road was devoid of vegetation.

Scattered trees

A semi-mature sycamore *Acer pseudoplatanus* measuring approximately 18 m in height was located in the south-western corner of the site and a young ash *Fraxinus excelsior* tree was located in the south-eastern corner. These were in good condition. Additionally, a number of semi-mature to mature sycamore trees were noted to overhang the western site boundary and a line of six mature sycamore and ash trees extended north of the eastern boundary (Plate A3). Two mature pine *Pinus* sp. trees were also noted on the boundary towards the centre of the site.

Semi-improved grassland

A small area of semi-improved grassland had remained in the south-western corner of the site (Plate A4). Species identified within this habitat included barren brome *Anisantha sterilis*, annual meadow-grass *Poa annua*, creeping bent *Agrostis stolonifera*, couch grass *Elytrigia* sp., cleavers *Galium aparine*, dock *Rumex* sp., dandelion *Taraxacum officinale* agg., herb-Robert *Geranium robertianum*, lady's mantle *Alchemilla vulgaris* agg., cow parsley *Anthriscus sylvestris* and bramble *Rubus fruticosus* agg.

Tall ruderal vegetation

A patch of tall ruderal vegetation was present along the southern boundary (Plate A5). This included dock, wall barley *Hordeum murinum*, red fescue *Festuca rubra*, rosebay willowherb *Chamerion angustifolium* and meadow grass *Poa* sp.

4.4 FAUNA

There were no faunal species or evidence of faunal activity recorded on site. The time of year at which the survey is undertaken will affect species or field signs directly recorded during the survey.

4.5 INVASIVE PLANT SPECIES

There were no invasive plant species recorded on site during the field survey.

5. DISCUSSIONS AND CONCLUSIONS

5.1 SUMMARY OF PROPOSALS

It is understood that the proposals for the site involve the construction of a pair of semi-detached houses (Plots 1A and 1B) with associated hardstanding and soft landscaping.

5.2 NATURE CONSERVATION SITES

The desk study exercise identified no statutory nature conservation sites and no non-statutory nature conservation sites within a 1 km radius of the survey area.

5.3 HABITATS

The ecological importance of the habitats present on site is determined by their presence on the list of Habitats of Principal Importance in England and on the Local BAP. It also takes into account the intrinsic value of the habitat. Those habitats which are considered to be of intrinsic importance and have the potential to be impacted by the site proposals are highlighted as notable considerations.

A discussion of the implications of the site proposals with regard to the habitats present on site is provided in the text below. A separate discussion of the value of the habitats on site to protected or notable species is provided in Section 5.4.

Bare ground

This a common habitat with no ecological value and therefore is not a notable consideration.

Hardstanding

This a common habitat with no ecological value and as such is not a notable consideration.

Scattered trees

The semi-mature tree on site and the semi-mature to mature trees which overhang the site all have intrinsic value and cannot be readily replaced if lost whereas the young tree on site can easily be replaced. It is understood that some of these trees are to be removed to facilitate the development. Recommendations are made in Section 6.2.

Semi-improved grassland

The semi-improved grassland located within the south-western extent of the site is not a notable habitat within its own right; however it would generally be considered suitable for reptiles. A discussion of the value of this habitat for protected/notable species is provided in Section 5.4.

Tall ruderal vegetation

This habitat is well represented in the local area and can easily be replaced. Prior to site clearance, the existing area of bare ground is likely to have been covered by tall ruderal vegetation which is not a notable habitat within its own right; however tall ruderal vegetation provides suitable habitat for protected/notable species. This is discussed in Section 5.4.

Habitats considered to be of relevance to the proposed development are summarised in Table 5.1.

Habitat Type	Habitat of Principal Importance?	Local BAP Habitat?	Summary of Potential Impacts
Scattered trees	-	-	Habitat loss
Semi-improved grassland	-	-	Habitat loss
Tall ruderal vegetation	-	-	Habitat loss

Table 5.1: Summary of Potential Impacts on Notable Habitats

5.4 PROTECTED/NOTABLE SPECIES

The following paragraphs consider the likely impact of the site proposals on protected or notable species. This is based on those species highlighted in the desk study exercise (Chapter 3) and other species for which potentially suitable habitat occurs within or adjacent to the survey area.

Mammals – bats

The desk study provided two records of bats within a 1 km radius of the survey area; the nearest record was located 830 m north-east. There is no suitable roosting habitat for bats located on site. The scattered trees on and overhanging the site provide suitable foraging and commuting features for bats. It is understood that some of the trees will be removed as part of the proposals; however new replacement planting will help mitigate for their loss and as such, no long-term impact on local bat populations is anticipated. Habitat enhancement suggestions are made in Section 6.2.

Mammals – other

Badger

The desk study provided no records of badger within a 1 km radius of the survey area. No evidence of badger (e.g. setts, latrines, prints or hair) was recorded on site during the survey. The semi-improved grassland and tall ruderal vegetation provide suitable foraging habitat for this species and as such, a precautionary recommendation regarding foraging terrestrial mammals is made in Section 6.3.

Hedgehog

The desk study provided three records of hedgehog within a 1 km radius of the survey area; the nearest located 790 m north-east. The semi-improved grassland provides suitable foraging habitat for this species and as such, a precautionary recommendation is made in Section 6.3.

Amphibians

The desk study provided three records of great crested newt within a 1 km radius of the survey area; the nearest located 540 m west. The semi-improved grassland provides suitable terrestrial habitat for amphibians; however it is limited in extent and there are barriers between the nearest record and the site (such as major roads and housing). There are also no suitable breeding habitats (ponds) located on site. Therefore, amphibians, great crested newts in particular, are not a notable consideration with regards to the proposed development.

Reptiles

The desk study provided two records of grass snake and one record of adder within a 1 km radius of the survey area; the nearest records were located 120 m north-east for grass snake and 110 m south-west for adder. The semi-improved grassland and tall ruderal vegetation provide suitable habitat for reptiles. A reptile survey of this site undertaken in 2012 (Report RT-MME-112385) revealed a 'Good Population' of slow worms. It is understood that this area will be impacted by the proposed development and therefore, a recommendation is made in Section 6.3.

Birds

The desk study provided a number of records of a range of bird species within a 1 km radius of the survey area, including protected species and species of conservation concern. The habitats recorded on site are considered unlikely to support Schedule 1 species, including barn owl. However, the trees on and overhanging the site provide suitable nesting habitat for other notable and common species. Therefore, if tree removal/works are undertaken during the bird nesting season then there is potential for impact upon nesting birds. A recommendation regarding the timing of works is made in Section 6.3 and habitat enhancement suggestions are made in Section 6.2.

Invertebrates

The desk study provided three records of notable butterflies within a 1 km radius of the survey area; the nearest record was of purple emperor located 290 m south. The habitats on site do not support suitable larval foodplants or nectar sources for purple emperor. There were also no invertebrates identified on site during the field survey. Therefore, invertebrates are not a notable consideration with regards to the proposed development. Habitat enhancement suggestions are made in Section 6.2.

Plants

The desk study provided three records of notable plants within a 1 km radius of the survey area; the nearest was of musk stork's-bill located 100 m south. There were no notable plants identified on site during the survey which was conducted at a suitable time of year for species to be visible. Furthermore, the habitats on site are unlikely to support notable plant species such as those identified within the desk study. It is therefore considered that notable plants are not a notable consideration in relation to the proposed development.

Other Species

The following protected species are not considered to be material considerations due to the lack of desk study records and absence of suitable habitats within the development site and its surroundings: dormouse *Muscardinus avellanarius*, harvest mouse *Micromys minutus*, otter *Lutra lutra*, pine martin *Martes martes*, polecat *Mustela putorius*, stag beetle *Lucanus cervus*, water vole *Arvicola amphibius* and white-clawed crayfish *Austropotamobius pallipes*.

Summary

Species considered to be of relevance to the proposed development are summarised in Table 5.2.

Species / Species Group	Species of Principal Importance?	Local BAP Species?	Summary of Potential Impacts
Mammals - other	#	-	Direct harm or injury, loss of habitat
Reptiles	✓	✓	Direct harm or injury, loss of habitat
Birds	#	#	Direct harm or injury, loss of habitat
Key: #: Species dependent			

Table 5.2: Summary of Potential Impacts on Notable Species

5.5 INVASIVE PLANT SPECIES

The desk study provided no records of invasive plants within a 1 km radius of the survey area and no invasive plant were recorded on site during the field survey. Therefore, invasive plant species are not a notable consideration.

A summary of legislation and policy relevant to the ecology of the site is included in Appendix 2.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

6.1 NATURE CONSERVATION SITES

There are no recommendations to be made regarding nature conservation sites.

6.2 HABITATS

The following recommendations are made regarding the habitats present on site:

- R1 Habitat Loss and Enhancement:** In accordance with the provision of Chapter 11 of the National Planning Policy Framework (Conserving and Enhancing the Natural Environment) and Local Planning Policy, biodiversity enhancement measures should be incorporated into the landscaping scheme of any proposed works to maximise the ecological value of the site. This will involve, for example:
- Planting of habitats which will be of value to wildlife, such as:
 - native seed/fruit bearing species
 - nectar-rich species to attract bees and butterflies
 - species which attract night flying insects which will be of value to foraging bats, for example: evening primrose *Oenothera biennis*, goldenrod *Solidago virgaurea*, honeysuckle *Lonicera periclymenum* and fleabane *Pulicaria dysenterica*.
 - Provision of nesting/roosting habitat, such as installation of nest boxes for species such as house sparrow, dense scrub or native thicket for species such as song thrush, and bat boxes for species such as pipistrelle.
 - Creation of deadwood habitat for invertebrates.
- R2 Notable Habitats:** If possible, the development proposals should be designed in such a way to allow for the retention of the existing semi-mature/mature trees (on and overhanging the site. If this is not possible, appropriate replacement planting should be incorporated into the soft landscape scheme. Only native and/or wildlife attracting species should be planted.
- R3 Trees:** Any trees on or overhanging the site, which are to be retained as a part of any proposed works should be protected in accordance with British Standard 5837: 2012 "Trees in relation to design, demolition and construction - recommendations". Protection should be installed on site prior to the commencement of any works on site.

6.3 PROTECTED / NOTABLE SPECIES

To ensure compliance with wildlife legislation and relevant planning policy, the following recommendations are made:

- R4 Terrestrial Mammals including Badger and Hedgehog:** Any excavations that need to be left overnight should be covered or fitted with mammal ramps to ensure that any animals that enter can safely escape. Any open pipework with an outside diameter of greater than 120 mm must be blanked off at the end of each work day to prevent badgers entering/becoming trapped.
- R5 Reptiles:** To avoid harming any reptiles that may be present on site, the vegetation must be strimmed and the topsoil removed under the supervision of a suitably experienced ecologist. This must be completed during the active period for reptiles which generally extends between April and September. Any habitat features that are to be decommissioned must be dismantled by hand under supervision.

- R6 Nesting Birds:** Vegetation clearance should be undertaken outside the nesting bird season. The nesting bird season is weather dependent but generally extends between March and September inclusive. If this is not possible then any vegetation that is to be removed or disturbed should be checked by an experienced ecologist for nesting birds immediately prior to works commencing. If birds are found to be nesting any works which may affect them would have to be delayed until the young have fledged and the nest has been abandoned naturally.

6.3 INVASIVE PLANT SPECIES

There are no recommendations to be made regarding invasive plant species.

7. DRAWINGS

Drawing C117197-01 Phase 1 Habitat Map



117197-01

Legend

- Site boundary
- Scattered tree
- Bare ground
- Hardstanding
- Poor semi-improved grassland
- Tall ruderal

Project	Pine Close, Westergate		
Drawing	Preliminary Ecological Assessment		
Client	Wilson House Developments		
Drawing Number	117197-01	Revision	Rev A
Scale @ A4	1:400	Date	September 2014
Approved By	MM	Drawn By	RP

MIDDLEMARCH
ENVIRONMENTAL

Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ

E: [REDACTED]

This map is reproduced from the Ordnance Survey material with the permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution of civil proceedings.
Licence Number: 100040519

8. PHOTOGRAPHS



Plate A1: Overview of the site and adjacent land at the time of the survey



Plate A2: Pine Close – access road to site



Plate A3: Mature sycamore and ash trees along eastern boundary



Plate A4: Semi-improved grassland

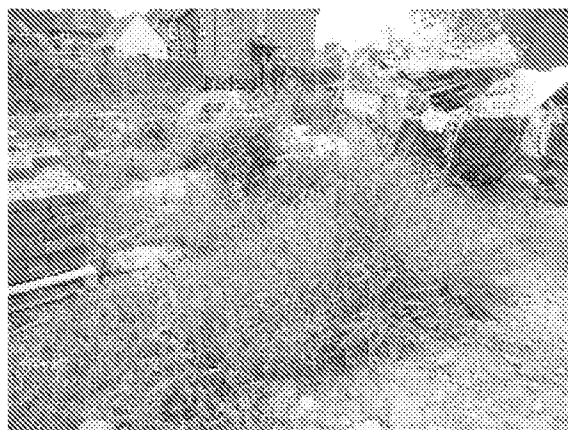


Plate A5: Tall ruderal vegetation

REFERENCES AND BIBLIOGRAPHY

British Standards Institution (2013). *British Standard 42020: 2013. Biodiversity – Code of practice for planning and development*. British Standards Institution, London.

British Standards Institution. (2012). *British Standard 5837:2012, Trees in relation to design, demolition and construction – recommendations*. British Standards Institution, London.

Department for Communities and Local Government (2012). *National Planning Policy Framework*. Available: <http://www.communities.gov.uk/planningandbuilding/planningsystem/planningpolicy/planningpolicyframework/>

Institute of Environmental Assessment. (1995). *Guidelines for Baseline Ecological Assessment, Institute of Environmental Assessment*. E&FN Spon, An Imprint of Chapman and Hall. London.

Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey: A technique for environmental audit (reprint)*. Joint Nature Conservation Committee, Peterborough.

Joint Nature Conservation Committee (2012). *UK Post-2010 Biodiversity Framework*. Available: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf

Middlemarch Environmental Ltd (2012) Extended Phase 1 Habitat Survey: Pine Close, Westergate, West Sussex. Report RT-MME-111856.

Middlemarch Environmental Ltd (2012) Reptile Survey: Pine Close, Westergate, West Sussex. Report RT-MME-112385.

Middlemarch Environmental Ltd (2012) Reptile Mitigation Strategy: Pine Close, Westergate, West Sussex. Report RT-MME-112844.

Middlemarch Environmental Ltd (2014) Preliminary Ecological Assessment: Pine Close, Westergate, West Sussex. Report RT-MME-116948. Revised June 2014.

Sussex Biodiversity Record Centre (no date) *Sussex Biodiversity Action Plan*. Available: <http://sxbrc.org.uk/biodiversity/>

APPENDICES

APPENDIX 1: Summary of Statutory Nature Conservation Sites Within 1 km

APPENDIX 2: Overview of Relevant Legislation and Policy

APPENDIX 1

Summary of Statutory Nature Conservation Sites Within 1 km

Site Check Report

Report generated on Fri Sep 05 2014
Centroid Grid Ref: SU939049

The following features have been found in your search area:

Local Nature Reserves (England)

No Features found

National Nature Reserves (England)

No Features found

Ramsar Sites (England)

No Features found

Sites of Special Scientific Interest (England)

No Features found

Special Areas of Conservation (England)

No Features found

Special Protection Areas (England)

No Features found

APPENDIX 2

Overview of Relevant Legislation and Policy

This section provides an overview of the framework of legislation and policy which underpins nature conservation and is a material consideration in the planning process in England.

GENERAL BIODIVERSITY LEGISLATION AND POLICY

Conservation of Habitats and Species Regulations 2010, as amended (Habitats Regulations 2010, as amended)

The Habitats Regulations 2010 consolidate and update the Conservation (Natural Habitats, &c.) Regulations 1994 and all its various amendments. The Habitats Regulations 2010 are the principal means by which the EEC Council Directive 92/43 (The Habitats Directive) as amended is transposed into English and Welsh law.

The Habitats Regulations 2010 place duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria are, in conjunction with the European Commission, designated as Sites of Community Importance, which are subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. The regulations also place a duty upon the government to maintain a register of European protected sites designated as a result of EC Directive 79/409/EEC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, form a network of sites known as Natura 2000. The Habitats Directive introduces for the first time for protected areas, the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of the site. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest.

The Habitats Regulations 2010 also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively. Schedule 2 includes species such as otter and great crested newt for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations.

The Habitats Regulations 2010 were amended in August 2012 to ensure clearer transposition of the provisions of Articles 2, 3, 4(4) (second sentence) and Article 10 of the Wild Birds Directive, by giving additional and specific duties to relevant bodies. A number of amendments were also made to transpose more clearly certain elements of the Habitats Directive.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Habitat Regulations 2010 (as amended), offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).

Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species. All relevant species specific legislation is detailed later in this Appendix.

The Countryside and Rights of Way (CROW) Act 2000

The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity, and provides increased powers for the protection and maintenance of SSSIs. The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

The Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all of their functions. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity. These lists superseded Section 74 of the CROW Act 2000.

The Hedgerow Regulations 1997

The Hedgerow Regulations make provision for the identification of important hedgerows which may not be removed without permission from the Local Planning Authority.

UK Biodiversity Action Plan

The United Kingdom Biodiversity Action Plan (UK BAP), first published in 1994 and updated in 2007, was a government initiative designed to implement the requirements of the Convention of Biological Diversity to conserve and enhance species and habitats. The UK BAP contained a list of priority habitats and species of conservation concern in the UK, and outlined biodiversity initiatives designed to enhance their conservation status. Lists of Broad and Local habitats were also included. The priority habitats and species correlated with those listed on Section 41 and 42 of the NERC Act.

The UK BAP required that conservation of biodiversity was addressed at a County level through the production of Local BAPs. These were complementary to the UK BAP, however were targeted towards species of conservation concern characteristic of each area. In addition, a number of local authorities and large organisations have produced their own BAPs.

Species and Habitats of Material Consideration for Planning in England

In 2011, the government published the 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' to replace the previous England Biodiversity Strategy. In 2012 the UK BAP was replaced by the UK Post-2010 Biodiversity Framework.

Previous planning policy (and some supporting guidance which is still current, e.g. ODPM Circular 06/2005, now under revision), refers to UK BAP habitats and species as being a material consideration in the planning process. Equally many local plans refer to BAP priority habitats and species. Both remain as material considerations in the planning process but such habitats and species are now described as Species and Habitats of Principal Importance for Conservation in England, or simply priority habitats and priority species under the UK Post-2010 Biodiversity Framework. The list of habitats and species remains unchanged and is still derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006. As was previously the case when it was a BAP priority species hen harrier continues to be regarded as a priority species although it does not appear on the Section 41 list.

NATIONAL PLANNING POLICY FRAMEWORK AND PRACTICE GUIDANCE

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives.

Chapter 11, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

If a proposed development would result in significant harm to the natural environment which cannot be avoided (through the use of an alternative site with less harmful impacts), mitigated or compensated for (as a last resort) then planning permission should be refused.

In March 2014 the Department for Communities and Local Government released guidance to support the National Planning Policy Framework (NPPF), known as the National Planning Practice Guidance (NPPG).

This has been produced to provide guidance for planners and communities which will help deliver high quality development and sustainable growth in England. The guidance includes a section entitled 'Natural Environment: Biodiversity, ecosystems and green infrastructure' which sets out information with respect to the following:

- the statutory basis for minimising impacts on biodiversity and providing net gains where possible;
- the local planning authority's requirements for planning for biodiversity;
- what local ecological networks are and how to identify and map them;

- the sources of ecological evidence;
- the legal obligations on local planning authorities and developers regarding statutory designated sites and protected species;
- the considerations for local (non-statutory) designated sites;
- definition of green infrastructure;
- where biodiversity should be taken into account in preparing a planning application;
- how development can enhance biodiversity;
- how policy is applied to avoid, mitigate or compensate for significant harm to biodiversity and how mitigation and compensation measures can be ensured; and,
- the consideration of ancient woodlands and veteran trees in planning decisions.

LOCAL PLANNING POLICY - ARUN DISTRICT, WEST SUSSEX

<http://www.arun.gov.uk/main.cfm?type=LOCALPLAN2&objectId=6221&searchtermredirect=planning%20policy>

New Local Plan 2014 – 2029

Once the Arun District Local Plan is adopted, all planning applications for development will be judged against its policies. It will replace the Current Local Plan 2003, however until this plan is adopted the Local Plan 2003 to 2011 will provide planning policy for the district.

Current Local Plan 2003

The Arun District Local Plan was adopted in April 2003 and covers the period up to 2011. It forms a statement of Arun District Council's planning policies which are used as a basis for decision making in planning applications. The key aim of the plan is to apply the principles of sustainable development in assessing development proposals, striking the balance between the need for development and the protection of scarce resources. Policies and proposals within the plan seek to guide development to meet needs, such as economic regeneration and housing, and ensure the provision of appropriate infrastructure, whilst protecting precious resources such as the countryside, open spaces and sites important for nature conservation.

From 27 September 2007, some of the policies in the Local Plan ceased to have effect. The remaining policies continue to be a part of the development plan and are known as 'Saved Policies'. The following policies are of relevance to ecology:

Policy GEN2 'Built-up Area Boundary' - Development or redevelopment will be permitted within the built-up area boundaries (as defined on the Proposals Map, see web resource detailed above), subject to the other policies in this plan. Outside the built-up area boundaries, development or redevelopment will not be permitted unless it is consistent with other Local Plan policies.

Policy GEN3 'Protection of the Countryside' - Outside the Built-up Area, as defined on the Proposals Map (see web resource detailed above), the countryside will be safeguarded for its own sake. Development will not be permitted unless:

- i) It meets the operational needs of agriculture, forestry, the extraction of minerals or the deposit of waste; or
- ii) For quiet, informal recreation; or
- iii) For the diversification of the rural economy; or
- iv) For essential road schemes; or
- v) It is in accordance with a policy in Sections 2 and 3 of the plan referring to a specific use or type of development.

Permission will not be given for the extension of isolated groups of buildings or the consolidation of linear or sporadic development unless the proposal accords with criteria (i) to (iii) or (v).

Policy GEN23 'The Water Environment' - Development will not be permitted if it would have a direct or indirect unacceptable adverse impact on the water environment, notably in relation to rivers, ponds, wetlands, public access in river corridors and water related recreation. Where appropriate, the Council will support initiatives which seek to restore or enhance the water environment.

Policy GEN25 'Water Resources' - Development will only be permitted where the Local Planning Authority is satisfied that adequate water resources are available or will be provided in time to serve the development, and that provision is not considered detrimental to existing abstractions, river flows, water quality, fisheries, amenity or nature conservation.

Policy GEN28 'Trees and Woodland' - Development will not be permitted if it would damage or destroy one or more trees protected by a tree preservation order, identified as ancient woodland or in a conservation area unless: the removal of one or more trees would be in the interests of good Arboricultural practice; or the benefits of the proposed development outweigh the amenity value of the protected trees. Conditions may be used to ensure that, for any trees which are removed as part of the development, an equivalent number are planted on site.

Policy GEN29 'Nature Conservation across the District' - Development will only be permitted on sites which contain semi-natural habitats, features of nature conservation interest, or within wildlife corridors, where these can be largely retained and sympathetically incorporated into the scheme. Legal agreements may be used to offset the loss of, or impact on, any nature conservation resource present on the site prior to development.

Policy GEN33 'Light Pollution' - Planning permission will be permitted for proposals which involve outdoor lighting schemes subject to: no adverse impact on neighbouring uses or the wider landscape; light levels being the minimum required for security and working purposes; and minimising the potential glare and spillage. Where appropriate, the Local Planning Authority will seek to control the times of illumination.

Policy AREA1 'Areas of Special Character' - Within Areas of Special Character, as defined on the Proposals Map, planning permission will be granted subject to:

- i) The retention of buildings and other features such as boundary walls, hedges, trees, railings, open spaces, etc. which make positive contributions to the special character of the areas;
- ii) The maintenance of an appropriate mix of uses where this is an important element in the character of an area;
- iii) The development makes a positive contribution to the special character of these area, particularly with regard to the characteristics included in the descriptions for each area given in supplementary planning guidance.

Policy AREA13 'Sites of International Importance for Nature Conservation' - Proposals for development in, or likely to affect (directly or indirectly) a site of international importance for nature conservation will be subject to the most rigorous examination. Development not directly connected with or necessary to the management of the site which is likely to have an adverse effect on the site, will not be permitted unless: there is no alternative solution, there are reasons of public health or public safety, or there are benefits of primary importance to the environment.

Where such sites do not host a priority habitat or species, development will not be permitted unless there are imperative reasons of overriding public interest.

Where development is permitted, the use of conditions or planning obligations will be considered in order to avoid and minimise harm to the site, to enhance the site's nature conservation interest, and to secure any compensatory or mitigation measures and appropriate management that may be required.

Policy AREA14 'Sites of National Importance for Nature Conservation' - Proposals for development in, or likely to affect (directly or indirectly) Sites of Special Scientific Interest will be subject to special scrutiny. Where such development is likely to have an adverse effect, it will not be permitted unless the reasons for the development clearly outweigh the nature conservation value of the site itself and the national policy to safeguard the national network of such sites.

Where the site concerned is a National Nature Reserve, a site identified by the Nature Conservation Review or Geological Conservation Review, particular regard will be paid to the national importance of that site.

Where development is permitted, harm to the nature conservation interest must be minimised. The use of conditions or planning agreements will be considered to ensure the protection and enhancement of the nature conservation interest, and to provide appropriate compensatory or mitigation measures and site management.

Policy AREA15 'Sites of Local Importance for Nature Conservation' - Proposals for development in, or likely to have an adverse effect (directly or indirectly) on a Local Nature Reserve, Site of Nature Conservation Importance (including ancient woodlands or wildlife corridors) or Regionally Important Geological/Geomorphological Site will not be permitted unless it can be demonstrated that reasons for the proposal outweigh the need to safeguard the nature conservation value of the site/feature. Where development is permitted which would damage the nature conservation value of the site/feature, such damage should be kept to a minimum.

Conditions or planning obligations will be used to secure necessary compensatory or mitigation measures, enhancement and site management.

Where appropriate, the Authority will consider the use of legal agreements to provide appropriate compensatory measures, enhancement and site management.

SPECIES SPECIFIC LEGISLATION

This section contains a summary of legislation with relation to the species present or potentially present in the survey area. The reader should refer to the original legislation for definitive interpretation.

Badger

Badgers and their setts are protected under the Protection of Badgers Act 1992. The Protection of Badgers Act 1992 is based primarily on the need to protect badgers from baiting and deliberate harm or injury, badgers are not protected for conservation reasons. The following are criminal offences:

- To intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it.
- To wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so.

A badger sett is defined in the legislation as:

- *'Any structure or place that displays signs indicating current use by a badger'*.

'Current use' is not synonymous with current occupation and a sett is defined as such (and thus protected) as long as signs of current usage are present. Therefore, a sett is protected until such a time as the field signs deteriorate to such an extent that they no longer indicate 'current usage'.

Badger sett interference can result from a multitude of operations including excavation and coring, even if there is no direct damage to the sett, such as through the disturbance of badgers whilst occupying the sett. Any intentional or reckless work that results in the interference of badger setts is illegal without a licence from Natural England³⁰. In England a licence must be obtained from Natural England before any interference with a badger sett occurs.

Birds

The Conservation of Habitats and Species Regulations 2010 (as amended) places a duty on public bodies to take measures to preserve, maintain and re-establish habitat for wild birds.

Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended).

Subject to the provisions of the act, if any person intentionally:

- kills, injures or takes any wild bird;
- takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- takes or destroys an egg of any wild bird, he shall be guilty of an offence.

Some species (listed in Schedule 1 of the WCA) are protected by special penalties. Subject to the provisions of the act, if any person intentionally or recklessly:

- disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- disturbs dependent young of such a bird, he shall be guilty of an offence.

Several bird species are Species of Principal Importance for Nature Conservation in England, making them capable of being material considerations in the planning process.

Hedgehog

Hedgehogs receive some protection under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended); this section of the Act lists animals which may not be killed or taken by certain methods, namely traps and nets, poisons, automatic weapons, electrical devices, smokes/gases and various others. Humane trapping for research purposes requires a licence.

Hedgehogs are a Species of Principal Importance for Nature Conservation in England and are thus capable of being material considerations in the planning process.

Reptiles

All of the UK's native reptiles are protected by law. The two rarest species – sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) – benefit from the greatest protection; however these two species have a limited geographical distribution and specific habitat requirements. Common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix natrix*) are protected under the Wildlife and Countryside Act 1981 as amended from intentional killing or injuring.

In England and Wales, this Act has been amended by the Countryside and Rights of Way Act 2000 (CROW), which adds an extra offence, makes species offences arrestable, increases the time limits for some prosecutions and increases penalties. The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on Government Departments to have regard for the conservation of biodiversity and maintains lists of species and habitats which are of principal importance for the purposes of conserving biodiversity in England and Wales. All native reptile species are included on these lists.

This is a simplified description of the legislation. In particular, the offences mentioned here may be absolute, intentional, deliberate or reckless. Note that where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.