

**MOUNTFIELD FIRST TIME SEWERAGE SCHEME,
EAST SUSSEX**

WHITE-CLAWED CRAYFISH HABITAT ASSESSMENT

A Report to The Clancy Group Plc

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01 OF 02

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*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.*

Contract Number C115661

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1. INTRODUCTION

1.1 PROJECT INTRODUCTION

In December 2013, The Clancy Group Plc commissioned Middlemarch Environmental Ltd to undertake a series of ecological surveys at the proposed sewerage system and Wastewater Treatment Works at Mountfield in East Sussex. This report details the findings of the white-clawed crayfish *Austropotamobius pallipes* habitat assessment at River Line in East Sussex.

Middlemarch Environmental Ltd has also carried out the following surveys on this site:

Great Crested Newt HSI: Middlemarch Environmental Ltd Report number RT-MME-115661-01;

Water Vole Survey: Middlemarch Environmental Ltd Report number RT-MME-115661-02;

Badger Survey: Middlemarch Environmental Ltd Report number RT-MME-115661-03; and,

Dormouse Survey: Middlemarch Environmental Ltd Report number RT-MME-115661-05; and,

Ecological Protection Plan: Middlemarch Environmental Ltd Report number RT-MME-115661-06.

1.2 SITE DESCRIPTION

The site is located in Mountfield, East Sussex and is centred at National Grid Reference TQ 744 201. The site is located within the High Weald Area of Outstanding Natural Beauty (AONB). Areas of Outstanding Natural Beauty are areas of high scenic quality that have statutory protection in order to conserve and enhance the natural beauty of their landscapes. The proposed works involve the installation of a pipeline through various areas between TQ 736 199 and TQ 741 197. As well as construction of Water Waste Treatment Works and a compound with pumping station.

The area through which the pipeline route is proposed comprises a mixture of amenity grassland, improved grassland, semi-improved grassland, broad-leaved woodland, mixed wood, arable land, dense scrub, buildings and running and standing water.

1.3 WHITE-CLAWED CRAYFISH ECOLOGY

The white-clawed crayfish is the UK's only native freshwater crayfish. Their population has declined dramatically in recent years. The main threat has come from non-native crayfish, notably the American signal crayfish *Pacifastacus leniusculus*, in the form of competition and disease, with the latter species carrying the 'crayfish plague', to which white-clawed crayfish have no resistance. Pollution and habitat loss have also been contributory factors in the decline.

White-clawed crayfish inhabit a range of watercourses and waterbodies, preferring clear, well-oxygenated water and locations without too much sediment. Primarily nocturnal, they take refuge during the day in

crevices in rocks and walls, gaps between stones, or amongst submerged plants and tree roots. They are omnivorous, feeding on a wide variety of vegetable and animal matter and detritus.

1.4 WHITE-CLAWED CRAYFISH LEGISLATION

White-clawed crayfish are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), making it an offence to take them from the wild or sell them. They are also protected internationally under Annexes II and V of the EC Habitats Directive and listed in Appendix III of the Bern Convention. It is classed as *Globally Threatened* by IUCN/WCMC.

In England and Wales, the WCA 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. White-clawed crayfish are included on these lists.

The reader is referred to the original legislation for the definitive interpretation.

2. METHODOLOGY

2.1 DESK STUDY

A desk study was undertaken as part of an Ecological Constraints Report done by Atkins in 2012 to determine records of white-clawed crayfish 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.

The results of this desk study are detailed in Section 3.1.

2.2 WHITE-CLAWED CRAYFISH HABITAT ASSESSMENT

The white-clawed crayfish habitat assessment involved a walkover survey of the River Line to check if the stretch of the river being affected by the development is capable of supporting white-clawed crayfish. Table 2.1 list the crayfish habitat preferences.

Features preferred by WCC	Features generally unsuitable for WCC
Slow-flowing sections of stony rivers	Uniform clay channels
Boulder riffles in chalk and clay streams	Areas of deep or soft silt
Submerged tree roots	Dense filamentous algae
Debris dams	Narrow fast-flowing channels
Crevices in old or damaged submerged brickwork, stonework, cracked concrete, or rotten wooden structures	Areas of sand and gravel, or bedrock, which are lacking in cobble or boulder (thou they might feed or walk through these areas)
Un-mortared stone revetting which protects banks from erosion	Pebble or cobble shingle regularly exposed by changing river levels
Stands of submerged and emergent aquatic plants	Areas of armoured bed, where the substrate is compacted by the river flow
Old gravel workings and chalk pits	Acidic streams or ochreous drainage
Good water quality	Poor water quality or salinity

Table 2.1: Crayfish Habitat Preferences (Peay, 2000)

3. RESULTS

3.1 DESK STUDY

As part of the Extended Phase 1 Habitat Survey completed by Atkins, a desk study for records of protected species was completed. This desk study identified no records of white-clawed crayfish within a 1 km radius of the proposed pipeline route.

3.2 WEATHER CONDITIONS

The survey was undertaken on 16th December 2013, the weather conditions are detailed in Table 3.1. The survey was undertaken by David Smith (Ecology and Landscapes Director and WCC Licence Holder).

Weather Conditions	Daytime
Cloud Cover %	12
Temperature °C	90
Rain	F1
Wind (Beaufort)	None

Table 3.1 Weather Conditions During Survey

3.3 HABITAT ASSESSMENT

The habitats within River Line were assessed 50 m each side of the proposed pipeline route for their suitability for crayfish.

The section of River Line surveyed was approximately 400m in length. This section of the river was heavily shaded with steep bare earth banks scattered with leaf litter. The river was approximately 1-1.5 m wide and 400mm deep (Plate 3.1 and 3.2). There were no boulders, stones or other similar features that white-clawed crayfish could utilise for refuge. The substrate of the river was mainly silt with accumulation of detritus, although WCC will use areas of deep detritus for feeding, the silt and lack of refuge features such as boulders, tree roots etc. is considered unsuitable habitat for WCC. At the time of the survey water was very murky indicating a poor water quality. All this combined makes this section of the river suboptimal for white-clawed crayfish.



Plate 3.1: River Line



Plate 3.2: River Line

4. DISCUSSION AND CONCLUSIONS

White-clawed crayfish inhabit a range of watercourses and waterbodies, preferring clear, well-oxygenated water and locations without too much sediment or pollution. Primarily nocturnal, they take refuge during the day in crevices in rocks and walls, gaps between stones or brickwork, or amongst submerged plants and tree roots. They are omnivorous, feeding on a wide variety of vegetable and animal matter and detritus (Peay, 2000).

The deep silt and lack of suitable refuge areas (i.e. rocks/large stones or tree roots) makes the section of River Line being affected by the proposed development unsuitable for WCC. This combined with lack of records provided by the desk study suggest that WCC are not currently present within the development area. Therefore no further surveys are required and works can proceed as planned with regards to WCC.

5. RECOMENDATIONS

No further works are recommended, however should a white-clawed crayfish be found during works, all works must cease and advise sort from a licensed white-clawed crayfish worker.

REFERENCES AND BIBLIOGRAPHY

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