White-Clawed Crayfish Report

Henthorn Road, Clitheroe
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EXECUTIVE SUMMARY

Site Address	Land north and south of Henthorn Road, Clitheroe, Ribble Valley, BB7 2SN
Coordinates	E 372958, N 440590
Site Area	Approximately 7.21 ha
Current Site Use	The site comprised two modified grassland fields separated by Henthorn Road. Hedgerows and scattered trees were present surrounding the fields. A small area of lowland mixed deciduous woodland was present in the northwest of the site. An unnamed watercourse ran through the southern grassland field and Pendleton Brook formed the site's southern boundary.
Proposed Development	Development proposals comprise the construction of residential units with associated gardens, access roads, and hard and soft landscaping.
Results	No crayfish were noted during the hand searching, torching or within the baited traps. No field signs of white-clawed crayfish (WCC), such as burrows or crayfish remains in otter spraints, were noted within either watercourse.
Conclusions and Recommendations	While the habitat assessment identified both watercourses as having some suitability for WCC, no individuals were noted during the surveys. As such, WCC can be confirmed absent from the watercourses on site. No further considerations regarding white-clawed crayfish are required. However, pollution prevention measures will need to be followed throughout development.

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1. INTRODUCTION

1.1. BACKGROUND

E3P has been instructed by Gladman Developments Ltd to undertake a White-Clawed Crayfish Survey at Henthorn Road, Clitheroe, hereafter referred to as "the site".

This report has been prepared by Phoebe Parry, BSc (Hons), Consultant Ecologist at E3P, who has over two years of professional experience as an Ecological Consultant. Phoebe has experience undertaking Preliminary Ecological Appraisals, protected species surveys and ecological mitigation for a wide variety of projects across the UK.

1.2. PROPOSED DEVELOPMENT

Development proposals comprise an outline application for the construction of residential units with associated gardens, access roads, and hard and soft landscaping.

1.3. PREVIOUS SURVEYS

A Preliminary Ecological Appraisal (PEA) was undertaken by E3P in April 2025 (report reference 82-168-R1). The PEA did not identify any records of White-Clawed Crayfish (*Austropotamobius pallipes*) (WCC) within 2 km of the site. However, two watercourses were identified within the site boundary. An unnamed watercourse (WC1) runs through the centre of the southern parcel of the site, and Pendleton Brook runs along the southern site boundary. Both watercourses were assessed as having the potential to support white-clawed crayfish. Because of this, the PEA identified the need to undertake a WCC survey, should the development affect the watercourses on site.

1.4. SITE LOCATION

The site comprises two parcels of land located north and south of Henthorn Road. The site is located at the southwestern edge of Clitheroe. Pendleton Brook defines the site's southern boundary. The River Ribble is located 110 m northwest of the site at its closest point. An active railway line is located 180 m east of the site, and a sewage treatment works is located 120 m south of the site. See Figure 1 for an approximate location.

Figure 1 Approximate Site Location

1.5. OBJECTIVES

The aims of the survey were to:

- Complete a habitat suitability assessment on the stretch of the watercourses located within the site boundary:
- Undertake presence/likely absence surveys for WCC; and
- Produce a report detailing the results of the survey and provide recommendations, where required.

2. METHODOLOGY

2.1. DESK STUDY

A desk study was completed during the production of the Preliminary Ecological Appraisal (ref: 81-168-R1). The desk study was informed using the following sources of information:

- MAGIC – A web-based interactive mapping system, on which geographic information regarding key environmental schemes and designations are collated, including details of statutory conservation sites, consulted in December 2025.
- Aerial mapping and ordinance survey maps.
- Local data records, including Lancashire Environment Records Network (LERN) on 20th December 2024.

A 2 km search area was utilised for the data search, with this being deemed an appropriate distance for the Zone of Influence of the site, due to the size of the site and the surrounding habitat.

The data search included a request for details of protected and notable species of flora and fauna within 2 km of the central grid reference of the site. In addition, a request was made for any non-statutory designated sites within 2 km of the site boundary.

2.2. HABITAT ASSESSMENT

The basic requirements for the survival of WCC are suitable habitat for refuges, food supply, access to other crayfish for breeding, suitable water quality, freedom from competition by alien crayfish, and freedom from disease carried by alien crayfish.

The onsite watercourses were assessed for their suitability to support WCC. The habitats suitability assessment followed guidance produced by Peay (2002). Characteristics of a WCC suitable habitat include:

- Water quality – unpolluted, well-oxygenated water with a pH of 6.8-8.6;
- Food supply – leaf litter, aquatic invertebrates, aquatic macrophytes, other crayfish, dead fish or animal remains, and occasionally small live fish;
- Permanence – a permanent watercourse throughout the year;
- Flow rate – stable and often slow-flowing sections of a watercourse;
- Refugia – suitable refuge to rest or shelter from predation, including damaged brickwork, stonework, cracked concrete or rotten timber structures, cobbles and rubble, scattered boulders, logs, debris dams, or submerged vegetation/tree roots;
- Profile – crayfish construct burrows for shelter; for this reason, they may favour vertical, undercut banks, with overhanging vegetation, and

The types of habitats WCC are found in include upland headwaters, stoney rivers, chalk and clay streams, old gravel workings and clay pits, canals, and reservoirs.

2.3. WHITE CLAWED-CRAYFISH SURVEY

Field surveys were conducted by following guidance specified in the 'Monitoring the White - clawed Crayfish', Conserving Natura 2000 Rivers' monitoring series of guidance (Peay, 2003). Manual searching, trapping and night viewing were undertaken.

The optimal period for carrying out surveys for WCC is July through to September, when female crayfish have released their young. Crayfish surveys should not be carried out during periods of high flow and should avoid surveying when temperatures are 8 degrees or below.

The field survey was completed on 24th and 25th July 2025 by Vanessa Barlow, who holds a CL11 white-clawed crayfish licence, and assisted by Phoebe Parry, Consultant Ecologist at E3P.

The stretch of WC1 which runs through the site (Approximately 260 m in length) and Pendleton Brook, which runs parallel to the site boundary (Approximately 260 m in length), were surveyed. Refer to Appendix I for further details on the survey area and trap locations.

2.3.1. MANUAL SEARCHING

The manual hand searching survey involved upturning potential refugia, such as boulders, stones, cobbles, debris and logs to uncover any crayfish present.

Where necessary, a sampling net was used downstream of any upturned refugia to catch any escaping crayfish.

Manual searching by hand also allows for semi-quantitative surveys to obtain information on relative abundance and population structure, including size distribution and sex ratio.

2.3.2. TRAPPING

Trapping could not be undertaken in WC1 as the watercourse was too shallow to fully submerge the traps. However, the trapping survey could be undertaken in Pendleton Brook as it comprised deeper sections.

All traps and PPE/equipment entering the watercourse were disinfected with Virkon Aquatic beforehand and thoroughly dried, following 'Check Clean Dry' guidelines.

A total of seven traps were deployed by Vanessa Barlow and Phoebe Parry on 24th July 2025. All traps were within the specified size per the CR1 permit, with additional otter guards at the trap entrances. Traps were baited with oily mackerel and deployed into the watercourse, ensuring they were fully submerged. They were tethered to the bankside using twine to ensure they remained in place. All traps were tagged with EA permitting tags. Trap locations, including trap number, were marked on a map and photographed for easy locating and retrieval. The traps were retrieved the following morning, ensuring that they were lifted within 24 hours of deployment. Please see Appendix I for the location of the traps.

2.3.3. NIGHT VIEWING

Night viewing was undertaken on both watercourses on the evening of 24th July 2025 by Vanessa Barlow and Phoebe Parry.

The survey was undertaken from the banks of both watercourses. 1,000,000 lumen torches were used to search for crayfish within the watercourses after sunset during their active period. Any individuals were recorded to confirm presence; however, further details of species type and population structure cannot be ascertained during torching.

2.4. LIMITATIONS

Sections of WC1 comprised dense vegetation. As such, accessing these sections of the watercourse was not possible, and manual searching could not be undertaken. Furthermore, due to the shallow depth of WC1, baited traps could not be laid within the watercourse. However, this is not considered a major constraint as the majority of WC1 could be hand searched and torched.

3. RESULTS

The following sections should be read in conjunction with Appendix I, showing the survey area and trap locations.

3.1. DESK STUDY

During the Preliminary Ecological Appraisal (ref: 82-168-R1), the desk study did not identify any records of WCC within a 2 km radius around the site.

A search of MAGIC did not identify any granted European Protected Species Applications for WCC within a 2 km radius of the site.

No records of any invasive crayfish species were returned during the desk study assessment.

3.2. HABITAT ASSESSMENT

3.2.1. WC1

The habitat characteristics of WC1, which runs through the site, were assessed with regard to its suitability to support WCC. Refer to the general description and Table 1.

The stretch of WC1 located on site was approximately 260 m in length.

The survey section was approximately. 0.3 – 0.5 m in width. The majority of the surveyed area comprised earthy, vegetated banks ranging in height from 0.3 m – 1 m, with no obvious artificial restructuring. Two bridges were noted along the watercourse adjacent to the southern and northern site boundary. In the south of the site, where WC1 meets Pendleton Brook, the banks were artificially heightened to approximately 2 m and reinforced with boulders on the right bank.

The substrate of WC1 largely comprised rocks and pebbles interspersed with softer soil. The watercourse was very shallow with an average depth of approximately 10 cm.

Some aquatic vegetation was present within the watercourse, entirely comprising flag iris (Iris pseudacorus). Vegetation on the bank face and bankside comprised modified grassland maintained at a short sward height as a result of grazing livestock.

Table 1 WC1 Habitat Assessment for WCC

KEY CHARACTERISTIC	DESCRIPTION
WATER QUALITY	No obvious signs of pollution. Some small signs of litter and debris within the channel. Several species of aquatic invertebrates.
FOOD SUPPLY	Macro invertebrates were present within the channel. Densely vegetated areas within the channel, as well as leaf litter.
PERMANENCE	The channel varied in depth. However, it is likely to hold water throughout the year.
FLOW RATE	Slow and steady, flowing northeast to southwest. Some sections flowed faster than others due to changes in the width of the channel and large rocks in the channel bed.
REFUGIA	Numerous available refugia throughout the watercourse under large rocks and underneath the overhanging banksides. Dense swathes of vegetation throughout the survey stretch offer suitable refugia. Soft banks also provide potential for burrow excavation.

KEY CHARACTERISTIC	DESCRIPTION
PROFILE	The profile of the banks was predominantly steep. There were several areas where they had been undercut, providing some shelter. The bank faces were densely vegetated with grasses and tall herbs.

3.2.2. PENDLETON BROOK

The habitat characteristics of Pendleton Brook, which runs along the southern site boundary, was assessed with regard to its suitability to support WCC. Refer to the general description and Table 2.

Pendleton Brook is located along the southern site boundary. The brook flows east to west and enters the River Ribble approximately 500 m southwest of the site.

The brook width was 5 m on average across the surveyed extent. The majority of the surveyed area comprised vegetated banks, with little management of the structure of the brook. However, parts of the left bank were reinforced with concrete.

The substrate of the brook was rocks and pebbles, with the fast flow of the brook creating riffles and small waterfalls along its course. Pebble "beaches" were present throughout the survey area along the banks. The depth of the brook varied; however, it was generally shallow with an average depth of approximately 30 cm.

No aquatic vegetation was present within the brook, whilst numerous mature trees were noted along both banks of the brook. Bankside habitats varied along the surveyed area from woodland to open grassland. Himalayan balsam (*Impatiens glandulifera*) was noted adjacent to the watercourse across the survey area.

Table 2 Pendleton Brook Habitat Assessment for WCC

KEY CHARACTERISTIC	DESCRIPTION
WATER QUALITY	No obvious signs of pollution. Some small signs of litter and debris within the channel. Some areas did have higher levels of siltation. Several species of aquatic invertebrates and fish were present.
FOOD SUPPLY	Fish and macro invertebrates were present within the channel. Vegetated areas within the channel, as well as fallen vegetation from bankside flora, provided leaf litter.
PERMANENCE	The channel varied in depth. However, it is likely to hold water throughout the year.
FLOW RATE	Fast flowing from east to west. Some sections flowed faster than others due to changes larger rocks in the channel bed. Deeper pools were present along the watercourse.
REFUGIA	Numerous available refugia throughout the watercourse under large rocks and within submerged tree roots.
PROFILE	The profile of the banks was predominantly steep. Both banks comprised artificial reinforcement, which limits burrowing potential.

3.3. FIELD SURVEY

No crayfish individuals were noted during the hand searching, torching or within the baited traps. No field signs of WCC, such as burrows or crayfish remains in otter (*Lutra lutra*) spraints, were noted within either watercourse.

4. CONCLUSIONS AND RECOMMENDATIONS

While the habitat assessment identified both watercourses as having some suitability for WCC, no individuals were noted during the surveys. As such, WCC can be confirmed absent from the watercourses on site. No further considerations regarding white-clawed crayfish are required. However, the pollution prevention measures as detailed in the Preliminary Ecological Appraisal (report reference: 82-168-R1) will need to be followed throughout development.

5. REFERENCES

- E3P (2025) Preliminary Ecological Appraisal. Report Reference: 82-168-R1.
- Natural England (2022) MAGIC website. Available at: http://www.natureonthemap.naturalengland.org.uk/home.htm [Accessed August 2025].
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END OF REPORT

APPENDIX I SURVEY AREA AND TRAP LOCATIONS

Key:

- Red Line Boundary
- Trap locations
- Survey area

Notes

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