Site Inspection reference	SI-7732-01	**Date of inspection**	18/09/2024
Inspected by	Courtney Halstead, Assistant Ecologist, BSc (Hons) Rachel Barnes, Graduate Ecologist, BSc (Hons)		
Task description	White-clawed crayfish (WCC) Survey Manual search and eDNA sampling were undertaken to confirm the status of WCC within Ludhill Dike as it runs along the northern boundary of the Site. This survey was undertaken following recommendations in the Preliminary Ecological Appraisal carried out by Brooks Ecological in July 2024 (Report ref: ER-7732-01).		
Legal Background	White-clawed crayfish (*Austropotamobius pallipes*) is listed in Appendix III of the Bern Convention and Annexes II and V of the EC Habitats Directive. It is classed as Globally Threatened by IUCN/WCMC. It is protected under Schedule 5 of the Wildlife and Countryside Act (1981) in respect of taking from the wild and sale. American signal crayfish (*Pacifastacus leniusculus*) is listed under Schedule 9 of the Wildlife and Countryside Act 1981, and it is an offence to release or allow its escape into the wild.		
Method	eDNA Sampling Water samples were collected from the Ludhill Dike on 7th August 2024, following the method as set out in the SureScreen Scientifics Technical White Paper and Filtration Sample Collection Guide. This included collecting 20 subsamples from the watercourse, avoiding disruption of sediment. As much of this sample was then passed through the filter as possible, the filter was emptied of water, filled with preservative and returned to the lab. Water samples were tested by SureScreen Scientific, with target species being white-clawed crayfish, American signal crayfish, and crayfish plague, a major threat to native crayfish populations. Manual Search Survey was carried out on 12th August 2022 according to the methodology outlined within the Common Standards Monitoring (CSM) Guidance for Freshwater Fauna (October 2015). Manual searching was chosen as the survey technique, being the preferred CSM method where conditions are suitable. The entire length of river adjacent to the Site was accessible, with exception to the stretch underneath the bridge. Water flow was measured at <20cm s^{-1}. The channel width was 1-2m wide, and the depth variable, averaging 5 – 10cm. Pockets >5cm deep were searched. To avoid disturbed sediment obstructing visibility, the watercourse was entered at a downstream location, with surveyors working in a		

	direction against the water flow. The substrate consisted of primarily gravel and cobbles, with some boulders, which were carefully searched as suitable refuges. Biosecurity protocol One of the greatest threats to white-clawed crayfish is crayfish plague. As such, all survey equipment prior and post survey complied with the Check, Clean, Dry Guidelines and was disinfected with FAM 30.
Results	eDNA analysis A negative result was returned for all three target species at this Site. (see **Appendix 1**). Manual Search After ~100 refuges had been searched, no crayfish were found. A further approximately 50 refuges were searched, however the conditions became unsuitable due to siltation. This was considered sufficient given the size of the watercourse being surveyed.
Summary	No evidence of white-clawed or American signal crayfish was found along the surveyed section of Ludhill Dike. While the presence of crayfish plague was not concluded, rivers are dynamic environments and appropriate care should always be taken to follow Clean, Check, Dry guidance to avoid the unintentional spread of pathogens and invasive species.
Further actions	It is not anticipated that development at the Site would impact upon white-clawed crayfish, therefore further action with respect to this species will not be required. **Spread of crayfish plague (Aphanomyces astaci)** Given the presence of White clawed crayfish within the Holme river catchment, crayfish plague still presents a significant risk. Crayfish plague spores can be spread on damp equipment such as footwear or machinery. Any works carried out within this waterbody pose a risk of introducing crayfish plague from other off-site water bodies through contaminated equipment - measures should be put in place during works including the following; - any machinery, tools or clothing (i.e footwear) which enters the watercourse should be either disinfected with iodine based disinfectant (such as FAM 30) or washed with clean tap water and allowed to dry fully for >24 hours before use.

Appendix 1 – SureScreen Scientific Results

eDNA Analysis

Summary

When aquatic organisms inhabit a waterbody such as a pond, lake or river they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm the presence or absence of the target species within the waterbody.

Results

Lab ID	Site Name	OS Reference	Target Species	Sample Integrity Check	Result	Positive Replicates
FK2341	Ludhill Dike, Gunn Ln, Honley	SE 14539 12183	Crayfish plague	Pass	Negative	0
			Signal crayfish	Pass	Negative	0
			White-clawed crayfish	Pass	Negative	0

Matters affecting result: none

Reported by:Chelsea Warner

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