

on behalf of

Swaledale and Arkengarthdale Archaeology Group

Hagg Farm

Swaledale

North Yorkshire

palaeoenvironmental assessment

report 5752

April 2022



**Contents**

1. Summary 1

2. Project background 2

3. Methods 2

4. Results 3

5. Discussion 3

6. Recommendations 3

7. Sources 3

Appendix 1: Data from palaeoenvironmental assessment 5

© Archaeological Services Durham University 2022

South Road ⋅ Durham ⋅ DH1 3LE ⋅ tel 0191 334 1121

archaeological.services@durham.ac.uk ⋅ www.dur.ac.uk/archaeological.services

**1. Summary**

**The project**

1.1 This report presents a palaeoenvironmental assessment of three bulk samples taken during archaeological excavations of a Romano-British settlement at Hagg Farm, Swaledale, North Yorkshire.

1.2 The works were commissioned by Swaledale and Arkengarthdale Archaeology Group (SWAAG) and conducted by Archaeological Services Durham University.

**Results**

1.3 Palaeoenvironmental evidence is consistent with the provisional Roman date, particularly given the presence of cf. spelt wheat, 6-row barley and probable charred remnants of heathland turves. The results are comparable to previous palaeoenvironmental data from Hagg Farm.

**Recommendations**

1.4 No further analysis is required for the samples.

1.5 The flots should be retained as part of the physical archive of the site. The residues were discarded following examination.

1.6 The following plant remains are recommended as the best options for radiocarbon dating and are ranked by their likelihood to provide a reliable date; other options are available if required (see Appendix 1):-

[159] <47> pit/linear ditch – Charred barley grain

[157] <46> burnt spread – Charred false oat-grass tuber

**2. Project background**

**Location and background**

2.1 Archaeological works were conducted by SWAAG at Hagg Farm, Swaledale, North Yorkshire. This report presents a palaeoenvironmental assessment of three bulk samples comprising a posthole fill [154], a burnt spread [157] and the fill [159] of a stone-lined pit or possible linear ditch, all probably Roman in date.

**Objective**

2.2 The objective of the scheme of works was to assess the palaeoenvironmental potential of the samples, establish the presence of suitable radiocarbon dating material, and provide the client with appropriate recommendations.

**Dates**

2.3 The samples were received by Archaeological Services on 21st February 2022. Assessment and report preparation was conducted between 1st and 30th April 2022.

**Personnel**

2.4 Assessment and report preparation was conducted by Dr Charlotte O’Brien. Sample processing was by Cyrus Edgcombe.

**Archive**

2.5 The site code is **HFS21**, for **H**agg **F**arm **S**waledale 20**21**. The finds, flots and charred plant remains are currently held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University awaiting collection.

**3. Methods**

3.1 The bulk samples were manually floated and sieved through a 500*μ*m mesh. The residues were examined for shells, fruitstones, nutshells, charcoal, small bones, pottery, flint, glass and industrial residues, and were scanned using a magnet for ferrous fragments. The flots were examined at up to x60 magnification for charred and waterlogged botanical remains using a Leica MZ7.5 stereomicroscope. Identifications were aided by comparison with modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University, and by reference to relevant literature (Cappers *et al.* 2006; Jacomet 2006). Habitat classification follows Preston *et al.* (2002). Plant nomenclature follows Stace (2010).

3.2 Selected charcoal fragments were identified, in order to provide material suitable for radiocarbon dating and to determine the nature and condition of the assemblages. The transverse, radial and tangential sections were examined at up to x500 magnification using a Nikon Eclipse microscope. Identifications were assisted by the descriptions of Schweingruber (1990), Gale & Cutler (2000) and Hather (2000), and modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University.

3.3 The works were undertaken in accordance with the palaeoenvironmental research aims and objectives outlined in the regional archaeological research framework and resource agendas (Roskams & Whyman 2007; Hall & Huntley 2007; Huntley 2010).

**4. Results**

4.1 The samples produced small flots comprising a few charcoal fragments and small to moderate quantities of charred plant remains. These include cereal grains, heather twigs, rhizome/tubers (including false oat-grass) and weed seeds (sheep’s sorrel, bedstraws, grass). Pit/ditch fill [159] has the largest quantity of cereal grains which are predominantly barley. Poor condition prevents further identification of most of the grains, although the twisted shape of some of them points to 6-row barley (*Hordeum vulgare*). The few wheat grains have the parallel sided-form typical of spelt wheat (*Triticum spelta*). Animal bone/tooth fragments are present in [159]. There are no finds in the other samples.

4.2 Detailed palaeoenvironmental results and a provisional date for each context are presented in Appendix 1. Material for radiocarbon dating is listed in the recommendations section.

**5. Discussion**

5.1 The palaeoenvironmental evidence is consistent with the provisional Roman date, particularly given the presence of probable spelt wheat and 6-row barley which were the principal crops for this period (Hall & Huntley 2007; Greig 1991). Furthermore, the charred remains of heather twigs, rhizomes and propagules of acid grassland plants such as sheep’s sorrel, are all listed as characterising the remnants of burnt turves in the archaeological record (Hall 2003), which is another characteristic of late prehistoric and Roman sites within the region. The results are comparable to previous palaeoenvironmental data from Hagg Farm (Archaeological Services 2014; 2017; 2019; 2020).

**6. Recommendations**

6.1 No further analysis is required for the samples. If further work is undertaken at the site, the results of this assessment should be added to any additional palaeoenvironmental data produced.

6.2 The flots should be retained as part of the physical archive of the site. The residues were discarded following examination.

6.3 The following plant remains are recommended as the best options for radiocarbon dating and are ranked by their likelihood to provide a reliable date; other options are available if required (see Appendix 1):-

[159] <47> pit/linear ditch – Charred barley grain

[157] <46> burnt spread – Charred false oat-grass tuber

**7. Sources**

Archaeological Services 2014 *West Hagg Site 103 Swaledale, North Yorkshire: archaeological excavation.* Unpublished report **3360**, Archaeological Services Durham University

Archaeological Services 2017 *Hagg Farm, Swaledale, North Yorkshire: palaeoenvironmental assessment.* Unpublished report **4647**, Archaeological Services Durham University

Archaeological Services 2019 *Hagg Farm, Swaledale, North Yorkshire: palaeoenvironmental assessment.* Unpublished report **4951**, Archaeological Services Durham University

Archaeological Services 2020 *Hagg Farm, Swaledale, North Yorkshire: palaeoenvironmental assessment.* Unpublished report **5240**, Archaeological Services Durham University

Cappers, R T J, Bekker, R M, & Jans, J E A, 2006 *Digital Seed Atlas of the Netherlands*. Groningen

Gale, R, & Cutler, D, 2000 *Plants in archaeology; identification manual of vegetative plant materials used in Europe and the southern Mediterranean to c.1500*. Otley

Greig, J R A, 1991 The British Isles, in W Van Zeist, K Wasylikowa & K-E Behre (eds) *Progress in Old World Palaeoethnobotany*. Rotterdam

Hall, A, 2003 *Recognition and characterisation of turves in archaeological occupation deposits by means of macrofossil plant remains.* Centre for Archaeology Report **16/2003**. English Heritage

Hall, A R, & Huntley, J P, 2007 *A review of the evidence for macrofossil plant remains from archaeological deposits in northern England*. Research Department Report Series no. **87**. London

Hather, J G, 2000 *The identification of the Northern European Woods: a guide for archaeologists and conservators*. London

Huntley, J P, 2010 *A review of wood and charcoal recovered from archaeological excavations in Northern England*. Research Department Report Series no. **68**. London

Jacomet, S, 2006 *Identification of cereal remains from archaeological sites*. Basel

Preston, C D, Pearman, D A, & Dines, T D, 2002 *New Atlas of the British and Irish Flora.* Oxford

Roskams, S & Whyman, M, 2007 *Yorkshire Archaeological Research Framework: research agenda*. York

Schweingruber, F H, 1990 *Microscopic wood anatomy*. Birmensdorf

Stace, C, 2010 *New Flora of the British Isles*. Cambridge

**Appendix 1: Palaeoenvironmental data**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **Context** | **Feature** | **Volume processed (l)** | **Flot volume (ml)** | **C14 available** | **Rank** | **Notes** |
| 45 | 154 | F153 - posthole | 6 | 20 | ? | \* | Small flot comprising a trace of charcoal, a small charred heather twig and a charred wheat grain (cf. spelt) – probably too small for C14. The charcoal is Maloideae (apple, hawthorn, whitebeams). Two uncharred achenes of marsh cinquefoil (*Potentilla palustris*) are probably modern intrusions and reflect an area of damp ground. No finds.  **Iron Age / Romano-British?** |
| 46 | 157 | Burnt spread | 6 | 40 | Y | \* | Small flot comprising modern roots (some woody), a trace of charred rhizomes and a charred false oat-grass (*Arrhenatherum* *elatius*) tuber. Little evidence of fuel waste. A single uncharred nutlet of bugle (*Ajuga reptans*) is probably a modern intrusion and reflects an area of damp ground. No finds.  **Iron Age / Romano-British?** |
| 47 | 159 | Stone lined pit or linear ditch | 11 | 50 | Y | \*\* | Small quantity of charcoal in good condition (Hazel and Maloideae stemwood). Moderate assemblage (n=93) of charred cereal grains in poor condition (pitted). These are predominantly barley (some twisted), with a few wheat grains (one is spelt type). Low numbers of charred seeds from sheep’s sorrel (*Rumex acetosella*), cleavers (*Galium* *aparine*) and grass.  Finds: animal bone and a tooth.  **Iron Age / Romano-British** |

[Rank: \*: low; \*\*: medium; \*\*\*: high; \*\*\*\*: very high potential to provide further palaeoenvironmental information.

? = material may be unsuitable for AMS dating due to poor condition or long-lived species]