

# Excavating a Mid-Iron Age crouched inhumation on the shores of Loch Gruinart, Islay, Argyll and Bute

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## SUMMARY

*Human remains uncovered across Atlantic Scotland have displayed a variety of burial rites practised throughout the Iron Age. An excavation on the island of Islay, as part of the Historic Environment Scotland Human Remains Call-Off Contract, has uncovered a crouched inhumation eroding out of sand dunes near the western shore of Loch Gruinart. Osteological analysis of the skeleton revealed it is that of an adult male, aged between 26 and 35 years. The body was found in a crouched position on its left-hand side, aligned south-east to north-west, with the head raised up and turned to face the west. No artefacts or grave goods were found in association with the burial. Radiocarbon dating has established that the remains relate to the Mid-Iron Age. The evidence uncovered here adds to the evolving narrative of the nature and date of the varying burial rites practised throughout this region during the Iron Age.*

KEYWORDS: Iron Age; Crouched; Inhumation; Islay.

## INTRODUCTION

The Scottish islands and coastline are dotted with a palimpsest of burials reflecting Scotland's diverse prehistory and an increasing suite of burial evidence relating

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specifically to the Iron Age is being uncovered. A period which is previously documented as having a paucity of evidence in Atlantic Scotland, has seen an increase in sites being excavated in recent years, largely due to commercially funded archaeological works (Cook et al 2018). Funerary traditions in the Iron Age have never been well understood, due to the wide range of burial rites practised throughout this period (Tucker 2012). This article presents the findings from the excavation of a crouched inhumation at Loch Gruinart, Islay, contributing to the amassing evidence from the area and specifically the Mid-Iron Age period.

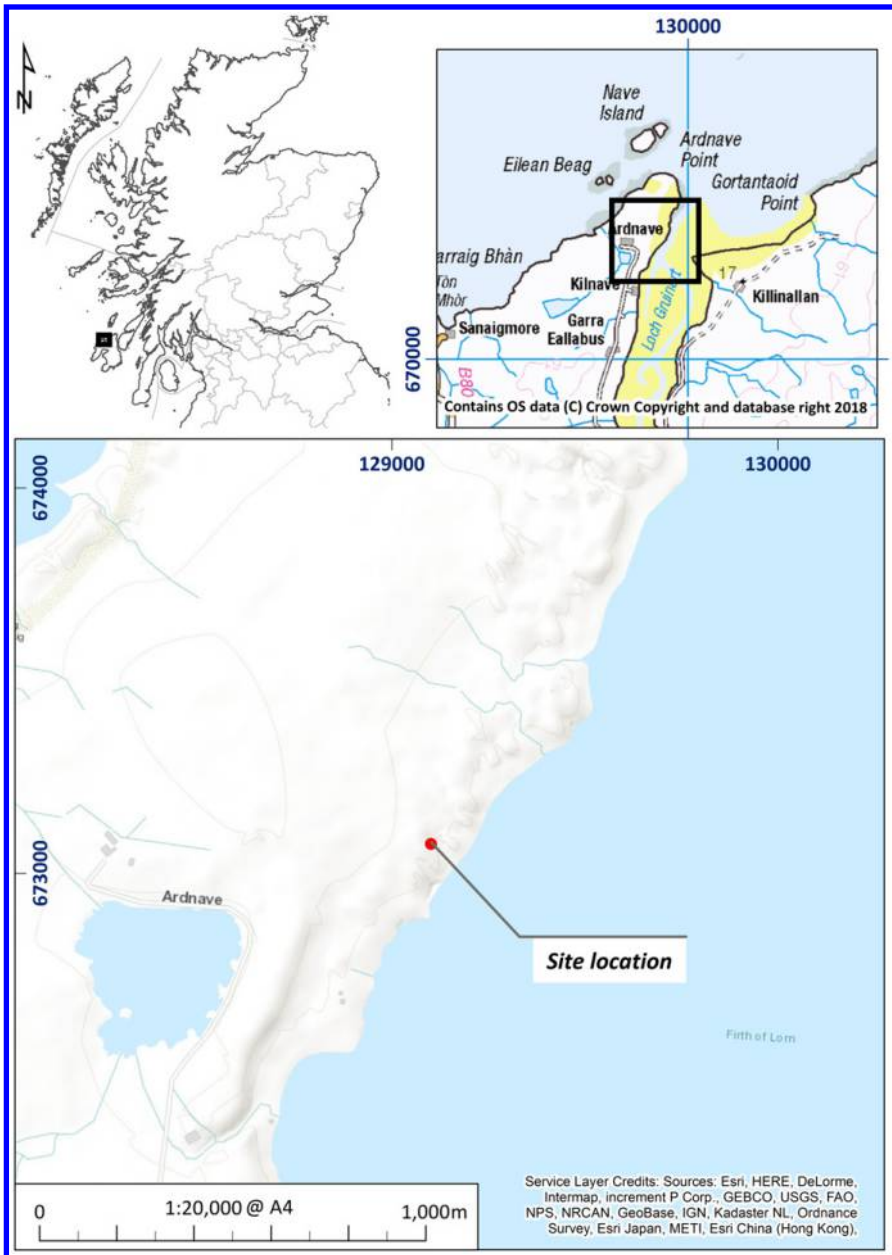
The excavation carried out by AOC Archaeology Group was commissioned following the discovery of human remains protruding from an erosion gully on the western edge of Loch Gruinart. The sighting was reported to the local police who requested assistance from Historic Environment Scotland, who instructed the works under the terms of the Human Remains Call-Off Contract. Due to their fragile location within the erosion gully, the remains were fully excavated and recorded. This article provides specific details about the excavation and recording, analysis of the human remains, processing and analysis of environmental samples and dating of the site. It also discusses the potential significance and context of the site with local and national comparanda.

#### SITE LOCATION

The inhumation was discovered within an erosion gully on the western edge of Loch Gruinart approximately 0.6km to the east of Ardnave House (centred on NGR: NR 2910 7310; Fig 1), in the north-west of the island of Islay, Argyll and Bute. Moving inland from Loch Gruinart, the area comprises a series of sand dunes, currently being eroded by winds from the east, creating gullies up to 100m long from the loch edge. The gully containing the inhumation measured 100m by 20m, sloping from north-west to south-east. Within the base of the gully, covered by up to 3m of sand, was a partially exposed shell midden (Fig 2). This area is already noted as the location of two middens of unknown date (Canmore ID 350161 and 350162) and the find spot of pottery and flints (Canmore ID 37505). The site is located within a rich prehistoric landscape with a number of sites in close proximity reflecting the long-standing use of the area. Within a few hundred metres of the site there are further middens, a hut circle, a building and further find spots of flints and pottery. In the immediate landscape, to the north of the site, there are also two cists, one undated, containing a fragmented cremation burial (Canmore ID: 37495), and one pertaining to the Bronze Age (Canmore ID: 80049) with no evidence of human remains.

#### EXCAVATION RESULTS

The inhumation was partially exposed upon arrival to the site, protruding from the south-western slope of an active erosion gully. The inhumation was located 1.5m above the shell midden at the base of the gully and approximately 4.5m below the current ground surface (Fig 3). The skeleton had been temporarily protected from disturbance by plastic sheeting covering the protruding remains. Upon removal it was apparent that the right arm and parts of the rib cage had become disarticulated



**Fig 1** Site Location

by erosional processes, with the humerus, radius and ulna observed on the sloping sand to the north-east (Fig 4).

The inhumation [008] was hand excavated, covering an approximate area of 1.0m by 0.65m. The entire skeleton could not be fully exposed during excavation



**Fig 2** Erosion gully with shell midden at base



**Fig 3** Inhumation and old ground surfaces [003] and [005] above

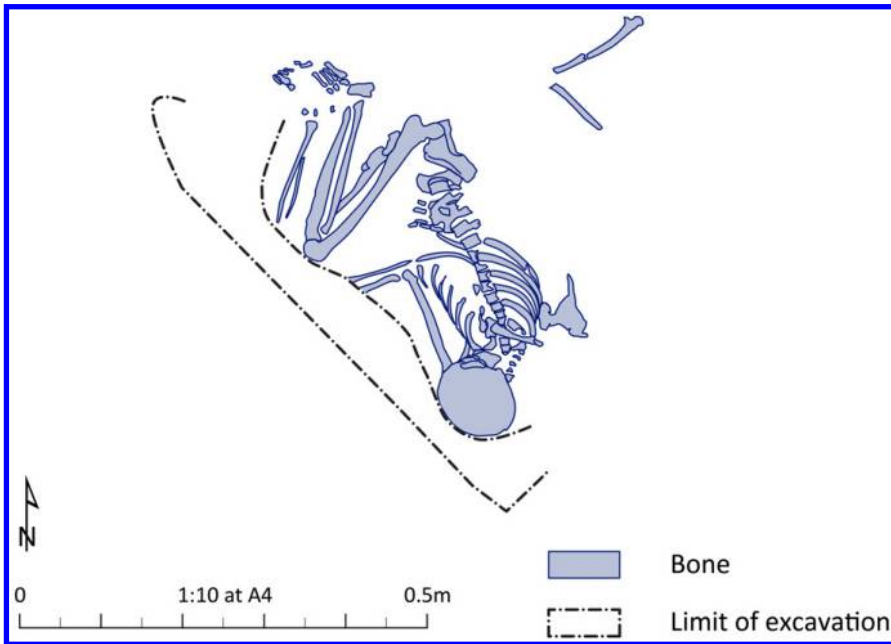


**Fig 4** Nature of exposure of inhumation upon arrival at site



**Fig 5** Excavated skeleton [008]

for photographic recording due to the significant depth of dune sand covering the left arm and knee. These parts were only exposed prior to lifting to minimise the possibility of collapse. Two former soil horizons [003] and [005], that post-date the burial, were noted on the side of the erosion gully at depths of 1.4m and 3.0m. There was no visible sign of a grave cut above or around the skeleton, most likely due to the sterile nature of the dune sand into which it had been interred.



**Fig 6** Illustrated Skeleton [008]

Once exposed it was apparent that the skeleton [008] (Fig 5 and Fig 6) was in a crouched position. The body was laid on its left-hand side, aligned south-east to north-west with the head raised up and turned to face the west. The legs and arms had been bent, with the right hand over the pelvis, the upper left arm parallel to the vertebrae, and the lower left arm parallel to the upper legs. The remains measured approximately 1m in length but if fully elongated would have measured close to 1.5m. No artefacts or grave goods were recovered in association with the skeleton.

#### POST-EXCAVATION ANALYSIS

The results below describe the post excavation analysis that was carried out on the human remains, the environmental analysis on bulk samples recovered and the radiocarbon dating of the skeleton.

##### *Human Remains by Rebecca Watts*

Osteological analysis was carried out on the human remains with the aim of compiling an inventory of the skeletal elements recovered in order to estimate the sex and age-at-death of the individual. The remains were also examined for any pathological conditions and evaluated for metrical analysis to potentially determine stature. The osteological analysis followed BABAO / IFA guidelines (Brickley & McKinley 2004), bone preservation guidance by McKinley (2004) and

skeletal completeness was determined according to Museum of London guidelines (Connell & Rauxloh 2003, Powers 2007).

The remains uncovered represent a single individual and were found to be 95% complete with the majority of skeletal elements present. Bone preservation was classed as Grade 1 reflecting good condition with no erosion. The individual was identified as a mature adult due to the complete fusion of all long bone epiphyses and the late fusing epiphyses of the pelvis, sternal clavicle, and vertebral endplates. Examination of sexually dimorphic features of the pelvis and cranium suggested that the individual was male. Analysis of age-related degenerative changes to the pubic symphysis, sternal ends of the ribs and the auricular surfaces of the ilium revealed that the individual was aged 26–35 years at the time of death.

The good state of preservation and relative completeness of the skeleton allowed measurements to be taken from the long bones to calculate stature using the equations of Trotter (1970) and Trotter & Gleser (1952). This produced a range of estimates which placed the stature of the individual between 158.8cm–175.7cm.

The individual was found to have several pathological conditions which affected both the skeleton and dentition. Dental pathologies were indicative of poor oral hygiene with the presence of calculus, periodontal disease and caries. Calculus i.e. mineralised plaque adhering to the roots or enamel surfaces of teeth, affected six teeth and the roots of a further 18 teeth (24/32 surviving teeth (75%)). Resorption of the alveolar bone had exposed approximately 2–3mm of the roots of the maxillary and mandibular molars and the maxillary premolars and canines indicating that the individual suffered from mild periodontal disease. A destructive cavity (caries) was observed in the first maxillary right and had destroyed the enamel and dentine on the mesial surfaces of the crown (occlusal and approximal), leading to exposure of the pulp chamber within the tooth.

Further pathology was seen in the articular facets of the 10th and 11th thoracic vertebrae and the 1st, 2nd and 3rd lumbar vertebrae displaying mild degenerative joint disease, identified as slight contour change around the superior and inferior articular surfaces and slight ossification of the ligamentum flavum. Degenerative joint disease is a process in which the joints of the skeleton deteriorate due to ageing or excessive strain.

The skeletal analysis has demonstrated that this individual was a 26–35 year old male who had not succumbed to the rigours of physical labour and who consumed a chewy, carbohydrate-rich diet, most likely without a strict regimen for oral hygiene. These results provide novel details which contribute to the understanding of lifestyles and behaviours of individuals within this area in prehistoric Scotland.

#### *Environmental Remains by Jackaline Robertson*

Bulk samples collected in association with the inhumation were air dried at room temperature before dry sieving, with the aim of retrieving any surviving skeletal fragments, ecofacts or artefacts. Evidence of human remains was noted in contexts [007], [007pelvis], [007head] and [009], relating to the grave fill of the skeleton and the deposit immediately under the skeleton and totalled 16.1g. Preservation of

**Table 1** : Summary of radiocarbon dating evidence

<i>Context</i>	<i>Material</i>	<i>C14 Years BP</i>	<i>Calibrated date (68.2%)</i>	<i>Calibrated date (95.4%)</i>	<i>Laboratory code</i>
[008] Inhumation	Human tibia	1988 ± 32	37 calBC – 52 calAD	52 calBC — 78 calAD	SUERC-61630

these fragments ranged from mostly poor to good. The majority of the bone was fragmented but a complete phalanx was observed. Charcoal fragments were noted in [004] windblown dune sand, [007] grave fill and [009] beneath the skeleton, but these were all smaller than 4mm and not suitable for species identification or radiocarbon dating. Marine and terrestrial snail shell was noted within all nine contexts. This material was highly fragmented and was a natural inclusion within the sediment. No artefacts were recovered from any of the samples.

#### *Radiocarbon Dating*

A single piece of human bone (tibia) was recovered from the inhumation [008] and submitted for radiocarbon dating. The dating results can be seen in Table 1. A calibrated date of between 52 calBC and 78 calAD (95.4%) was obtained for the inhumation, indicating that the remains date to the Mid-Iron Age.

## DISCUSSION

### *The inhumation*

The remains of the individual interred near the shores of Loch Gruinart contributes significantly to the evidence of mortuary behaviour being observed during the Mid-Iron Age in Atlantic Scotland. Osteological analysis of the human remains from Loch Gruinart, Islay confirmed the presence of a single adult individual, recovered from a crouched, inhumation burial, cut into sand dunes. The burial lies close to a number of known prehistoric sites, including middens, a cist, and a hut circle, but did not appear related to any of these or any other observable features. Funerary practices in the Scottish Bronze Age and Iron Age frequently included the crouched burials of single individuals like the one seen here (Curtis & Wilkin 2012; Cook & McLaren forthcoming).

The skeleton was well-preserved which allowed age and sex estimations to be carried out, revealing that the individual was an adult male, aged 26–35 years. Estimated stature was between 158.8cm–175.7cm which is consistent with the range previously observed for both Bronze Age (mean stature = 164cm) and Iron Age males (mean = 168cm) (Roberts & Cox 2003). Pathological changes were indicative of poor oral hygiene with some age-related degeneration beginning to develop in the spine. Prehistoric populations carried out a range of intensive, physical activities which is reflected in the generally high rates of joint disease recorded in assemblages from this time (Roberts & Cox 2003). The degenerative changes displayed by the male here were considered developmentally normal for an individual of this age (Rogers 2000), suggesting that if he had experienced a



physically active lifestyle, it had not yet begun to take its toll on his bones and joints.

Poor dental health is also a common finding in archaeological populations (Freeth 2000), and previous research has shown that rates of dental disease increased from the Neolithic to the Bronze Age, reflecting the increased consumption of cereal crops such as spelt wheat, barley and oats (Roberts & Cox 2003). The individual here displayed several dental conditions including caries, periodontal disease and calculus. Calculus builds up on the crowns and / or roots of teeth in individuals who consume chewy foods such as porridges and breads. Without a regular routine for dental hygiene these foods can stick to the teeth and become mineralised over time leading to the development of periodontal disease (Freeth 2000). The teeth of the individual uncovered here suggest that this male was consuming a sticky, carbohydrate-rich diet.

Caries develop when bacteria in the mouth secrete acid following the consumption of sugars and starchy carbohydrates (Freeth 2000). Prior to the introduction of refined flour in the post-medieval period caries tended to occur more frequently in the area of the cemento-enamel junction. This is believed to reflect the more abrasive diet of earlier populations which prevented the accumulation of bacteria between the teeth and on the occlusal surfaces (Freeth 2000). A study of caries in Scottish populations from the prehistoric to the medieval period demonstrated that lesions were located most frequently on the approximal surfaces of teeth, with the site of initial attack at the cemento-enamel junction (Lunt 1974). This is comparable to the type of caries seen in the Loch Gruinart individual suggesting that his diet was similar to that of other prehistoric Scottish populations.

### *Chronology and Dating*

The radiocarbon date retrieved from the skeletal remains, places the inhumation between the last century BC and first century AD. No artefacts were recovered, therefore there was no opportunity for typological dating. Looking at the nature of the inhumation alone it could have been speculated to be Bronze Age in date, due to the crouched burial nature, but radiocarbon dating confirmed a Mid-Iron Age date. A cemetery at Allasdale, Barra provides an example of a similar burial where a crouched inhumation was set in a grave with no cist (Cook & McLaren forthcoming), dating to the Bronze Age. This grave was found within a cemetery containing both short cists and cremations, signifying the varied style of burial rite at this time.

A site close to Loch Gruinart further west, at Sanaigmhor Warren Islay, was also originally deemed to be Bronze Age in date (Cook 1999), due to the nature of the urns and the burial rite. Excavations revealed two cremations within urns that had been placed in short cists. This site again emphasises the varied nature of funerary traditions during this period. Later radiocarbon dating provided an early and late Iron Age date for the skeletal material.

Two other inhumations uncovered at Griminish and Drimdsdale also initially appeared to represent burial in the Bronze Age cist tradition. However, radiocarbon dating placed them significantly later in the mid-late Iron Age at 260–540 cal

AD and 250–410 cal AD respectively (Cook et al 2018). These studies highlight the importance of radiocarbon dating in providing an accurate chronology for a site, with the use of burial rite to date individual graves often inaccurate, due to the wider variation of funerary practices adopted during the Iron Age in Atlantic Scotland.

### *Funerary Practice in Iron Age Atlantic Scotland*

During the Mid-Iron Age, a range of burial rites were practiced including cremation burials, formal inhumations (crouched and extended) and the placement of human remains on domestic sites (articulated and disarticulated). A study in 2012 identified 49 sites in Atlantic Scotland where human remains were recovered, 11 of which represented formal inhumations like the one uncovered at Loch Gruinart (Tucker 2012).

A number of sites in the Outer Hebrides on the islands of North Uist, Harris and Lewis, generally represent isolated formal inhumations, with a varied group of men, women and children, interred in a range of orientations and positions, with occasional grave goods and frequently within stone cists (Tucker 2012). More recently, four additional burial sites excavated in the Western Isles, on Harris, North Uist and South Uist, have been uncovered, that date to the Iron Age, representing the inhumation of articulated remains (Cook et al 2018). A single crouched inhumation was discovered at Griminish, North Uist and has placed the time of death of the individual in the first half of the first millennium AD. Similarly, to the inhumation discovered at Loch Gruinart, the individual here was an adult male aged between 26 and 35 years. At Drimdsdale, South Uist a partially crouched, fully articulated skeleton was uncovered, and again represents a male between the ages of 26 and 35, and dates to the late Iron Age (Cook et al 2018).

A single flexed inhumation was uncovered at Sangobeg, north-west Sutherland, and represents the remains of a juvenile aged approximately 8–10 years. The remains have been dated to the Mid-Iron Age (170 cal BC–30 cal AD). A comparable burial was also excavated at Galson on the Isle of Lewis, representing a flexed inhumation in a cist, dated to between the 1st and 5th centuries AD (Neighbour et al., 2000). At An Corran, Boreray, a contracted inhumation in a small cist and a flexed inhumation in a long cist were excavated along with a small corbelled structure; the inhumations dated to cal AD 20–250 and cal AD 120–340 (Badcock and Downes 2000). An inhumation uncovered at The Sands of Breckon, Shetland dates to the same period (120–440 cal AD) and represents a male less than 36 years old (Carter et al., 1996).

The interesting parallel with the sites discussed above is that, unlike many other burials during this time e.g. at Loch Borrallie (MacGregor 2003) and Sandwick (Bigelow 1984), the bodies are flexed or crouched rather than extended. The reason for the reappearance of this practice of formal inhumation in Atlantic Scotland during the last few centuries BC is unknown, but it can be speculated that it must represent an indigenous change in the means of demonstration of social status, belief in the fate of the dead or attitudes to the individual body. How this relates to the parallel practice of the deposition of human remains on domestic sites is also unclear but may point to two separate funerary cultures in Mid-Iron

Age Atlantic Scotland. By the late Iron Age, formal inhumation was present in all regions of Atlantic Scotland with extended inhumations becoming the dominant burial rite.

### CONCLUSIONS

The crouched inhumation of an adult male uncovered in dune sand near Loch Gruinart has provided an interesting parallel for the amassing evidence of Iron Age burial rites in Atlantic Scotland. Radiocarbon dating of the remains have placed it confidently in the Mid-Iron Age, which on examining the evidence appears to be a time of varied funerary traditions. With a revival of the more typical Bronze Age practice of crouched burial within cists, a mixture of extended formal inhumations, and internment on domestic sites all being observed within this period. The societal implications of this are unclear and a person's burial rite may relate to the beliefs, character or status of the individual. Further speculations could not be made about the status of the individual interred at Loch Gruinart in the absence of artefacts or grave goods, but the form and pathology of the skeleton have contributed significantly to the discussion of Mid-Iron Age funerary practices.

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