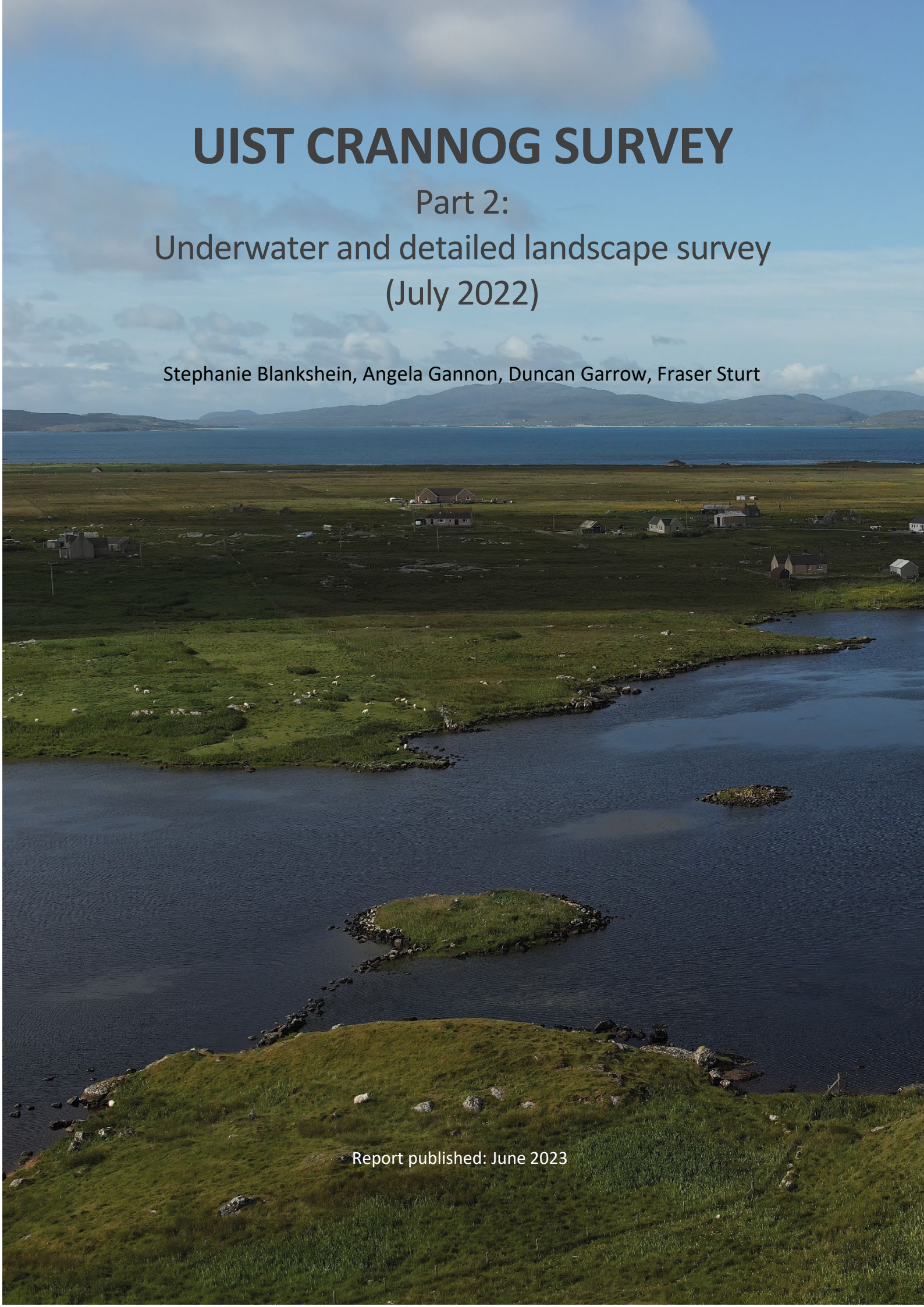

# UIST CRANNOG SURVEY

## Part 2:
## Underwater and detailed landscape survey
## (July 2022)

Stephanie Blankshein, Angela Gannon, Duncan Garrow, Fraser Sturt

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# 1. INTRODUCTION

This document is the second of two reports detailing the results of desk-based assessment and survey carried out in relation to all known crannogs (and related sites of potential interest) across the southern part of the Outer Hebridean island chain in North Uist, Benbecula, South Uist and Barra and associated smaller islands.

The Uist Crannog Survey (2020-22), undertaken as part of the wider 'Islands of Stone' project (see below), consisted of four main stages of work:

1. Desk-based assessment of all known 'archaeological island' sites in the Outer Hebrides
2. Preliminary site visits to as many Stage 1 sites as possible
3. Automated 'machine learning' analysis of all islands in the Outer Hebrides in order to identify potential sites not currently in the 'known' archaeological record
4. Underwater and detailed landscape survey of key sites of interest identified during Stages 2 and 3

This report presents the results of Stage 4. The results of Stages 1-3 are outlined within a separate document (Blankshein et al. 2023).

# 2. RESEARCH BACKGROUND

Crannogs, or artificial islands, are a multi-period category of archaeological site found in especially high densities in the Outer Hebrides. Previously considered to date from the Iron Age to the Medieval/Post-Medieval periods, recent work in the Isle of Lewis has clearly demonstrated the existence of Neolithic crannogs (Garrow & Sturt 2019), adding several new sites to what had been a list of one, the previously unique Eilean Domhnuill, North Uist, excavated in the 1980s (Armit 1986). Many of these newly discovered Neolithic sites have produced large quantities of pottery deposited into the lochs around them (Sheridan et al. 2014; Garrow & Sturt 2019).

The 'Islands of stone: Neolithic crannogs in the Outer Hebrides' project was set up in order to build on these exciting new discoveries. Funded by the AHRC, it is a collaboration between the Universities of Southampton and Reading and Historic Environment Scotland along with partners including the Uist Community Archaeology Group. The 'Islands of stone' project's primary stated aims are "to establish, through desk-based research and subsequent ground-truthing, whether Neolithic crannogs are widespread across the Outer Hebrides (and potentially also beyond)", as well as to "conduct underwater and dry-land excavation on a known, highly-promising 'showcase' Neolithic crannog" at Loch Bhorgastail, Lewis (for preliminary results of this excavation see Blankshein et al. 2022).

Underwater archaeological survey in lochs across the Isle of Lewis, undertaken initially by local divers Chris Murray and Mark Elliott and subsequently followed up on by the 'Islands of Stone' team, revealed five new Neolithic crannog sites (Garrow & Sturt 2019); a sixth Neolithic site, Loch Marabhat, also in Lewis, has been identified subsequently (Chris Murray pers. comm.; Copper 2022). As a result of this work, the existence of Neolithic crannogs in the northern parts of the Outer Hebrides has been conclusively demonstrated; Eilean Domhnuill is located at the northern end of North Uist. Within our wider crannog survey, as described in this Part 2 report, as well as Part 1, we therefore elected to focus specifically on the southern part of the island chain, namely North Uist, Benbecula, South Uist and Barra (and associated smaller islands), in order to investigate the presence (or not) of Neolithic crannogs across the full extent of the Outer Hebrides.

Work on Stages 1-3 was undertaken from January 2021 to June 2022. Full details about this phase of research can be found in our *Uist Crannogs Survey Part 1* report (Blankshein et al. 2023). In summary, a

comprehensive database of all 'archaeological islands' in the Outer Hebrides was compiled, drawing on the NRHE/HER, other relevant surveys and a holistic analysis of wider literature relating to crannogs (Stage 1). Preliminary field visits were then carried out by members of the Uist Community Archaeology Group (UCAG) to 114 sites, providing significant further information, including drone photos, of these sites (Stage 2). Finally, a process of automated machine learning was undertaken in order to identify new sites of potential interest that had previously not been recorded in the archaeological record (Stage 3).

# 3. SITE SELECTION FOR DETAILED STAGE 4 SURVEY

The main aim of our Stage 4 phase of underwater and detailed landscape survey fieldwork was to identify new chronologically diagnostic material associated with crannog sites across North Uist, Benbecula and South Uist. Whilst we were certainly interested in securing further dating information for a broad chronological range of sites, given the nature of the wider 'Islands of Stone' project which was designed specifically to explore Neolithic crannogs, we were particularly keen to target our work at those with most potential to have Neolithic origins. Our fieldwork in July 2022 was planned to last four weeks. Consequently, a manageable sub-sample of the 53 sites identified across North Uist, Benbecula and South Uist had to be identified. Given the time available to us, we needed to draw up a shortlist of c. 20-30 sites to visit in the four-week period.

The process of deciding which sites in our target region to visit was not straightforward. Even those crannog sites already known to be Neolithic in Lewis do not have a particularly well-defined set of characteristics. The two sites we had previously excavated – Loch Bhorgastail and Loch Langabhat – and which had seen only limited post-Neolithic activity, are both relatively small, simple, roughly circular stone forms, c. 15 m diameter (above-water), with low profiles above the loch surface and no obvious buildings. However, Eilean Domnhuill is much larger in size (c. 19 x 24m) and did have Neolithic buildings just below the surface, whilst the islet in Loch Arnish, Lewis, which has produced a substantial assemblage of Neolithic material, is considerably larger (c. 13 x 30m) and associated with an apparently much later, stone outer wall. Some crannogs which have Neolithic origins will certainly have seen later alterations and activity on them.

In an attempt to draw up a shortlist of sites that were most likely to be Neolithic in origin, we took the decision to focus primarily on islets that were broadly comparable in shape and size with Loch Bhorgastail and Loch Langabhat – small and relatively simple in form. We excluded sites which clearly had substantial architectural elements on top, as – even where the site's date had not yet been established – it seemed more likely that these might have had later, Iron Age or Medieval origins. Two additional criteria were used during the site selection process, drawing on wider knowledge and trends picked up within our data mining research in Stage 2. Thus we also targeted sites observed to be adjacent to a steep drop-off in the depth of the loch (a feature of both islets at Loch Bhorgastail and Loch Langabhat); and lochs with two artificial islets, where one was submerged and therefore likely older than the (typically Iron Age) other(s) (see Dixon 2004: 22).

One final consideration that could not be taken lightly was the ability to access the site with the personnel and equipment needed to conduct on adequate survey. Fortunately, most sites of interest were located adjacent to a road or could be relatively easily accessed from one; however, several promising sites were ultimately discarded from the survey list due to the difficulties in accessing them and the health and safety risks posed by their remoteness.

Using the various selection criteria set out above – and it must be admitted this was not a very precise science – a shortlist of 22 known sites (in 17 lochs) to visit was drawn up (Fig 1). Eilean Domhnuill, a known Neolithic crannog, was also added to the site list to provide a point of comparison for later investigations. In addition, three Iron Age and/or medieval sites were added to the list. Although two of these sites are Scheduled Monuments and all three appear to sit outside our scope of interest, all are sited in lochs that

also contain sites on our primary list and were thus deemed beneficial to also inspect. All sites are referred to by their names and IoS [Islands of Stone database] numbers throughout this report; concordance between IoS numbers and Canmore site numbers is provided within the individual site entries in Section 5 and also in the overall database. The latter is available open access via the project's Archaeology Data Service webpage: https://doi.org/10.5284/1100101.

In addition to this list of promising, already archaeologically-known sites, as a secondary priority we also determined a target list of sites found through the machine learning process (Stage 3) to visit in the field. As discussed in the Part 1 report, ideally these field visits would have been completed prior to Stage 2; however, for various reasons this was not possible. While the criteria listed above formed the primary basis for site selection, for the machine learning sites an emphasis was placed on geographic distribution across our target region. This allowed for the regions with few NRHE sites to also be investigated, filling in the gaps within a densely populated yet geographically biased map of recorded sites.

A sub-set of 8 of the most promising machine learning sites was identified for these additional preliminary field visits. With over 1900 islands identified through the machine learning results, the process of site selection had to be highly discriminate. The selection process was based on the same criteria used to select the NRHE sites – i.e. sites that were comparable in shape and size with Loch Bhorgastail and Loch Langabhat. This was determined through the statistics generated for each island through the machine learning results. In addition, a visual inspection of potential sites was made using Edina Getmapping (25cm) aerial imagery in order to select those that appeared most visually similar to known Neolithic crannogs (i.e. circular islands with a stone perimeter and surface vegetation). We also made an effort to select islets that were located outside of the predominate geographical areas already being investigated through our shortlist of known sites. Thus sites were selected along the east coast of North and South Uist, as well as in Benbecula more generally.

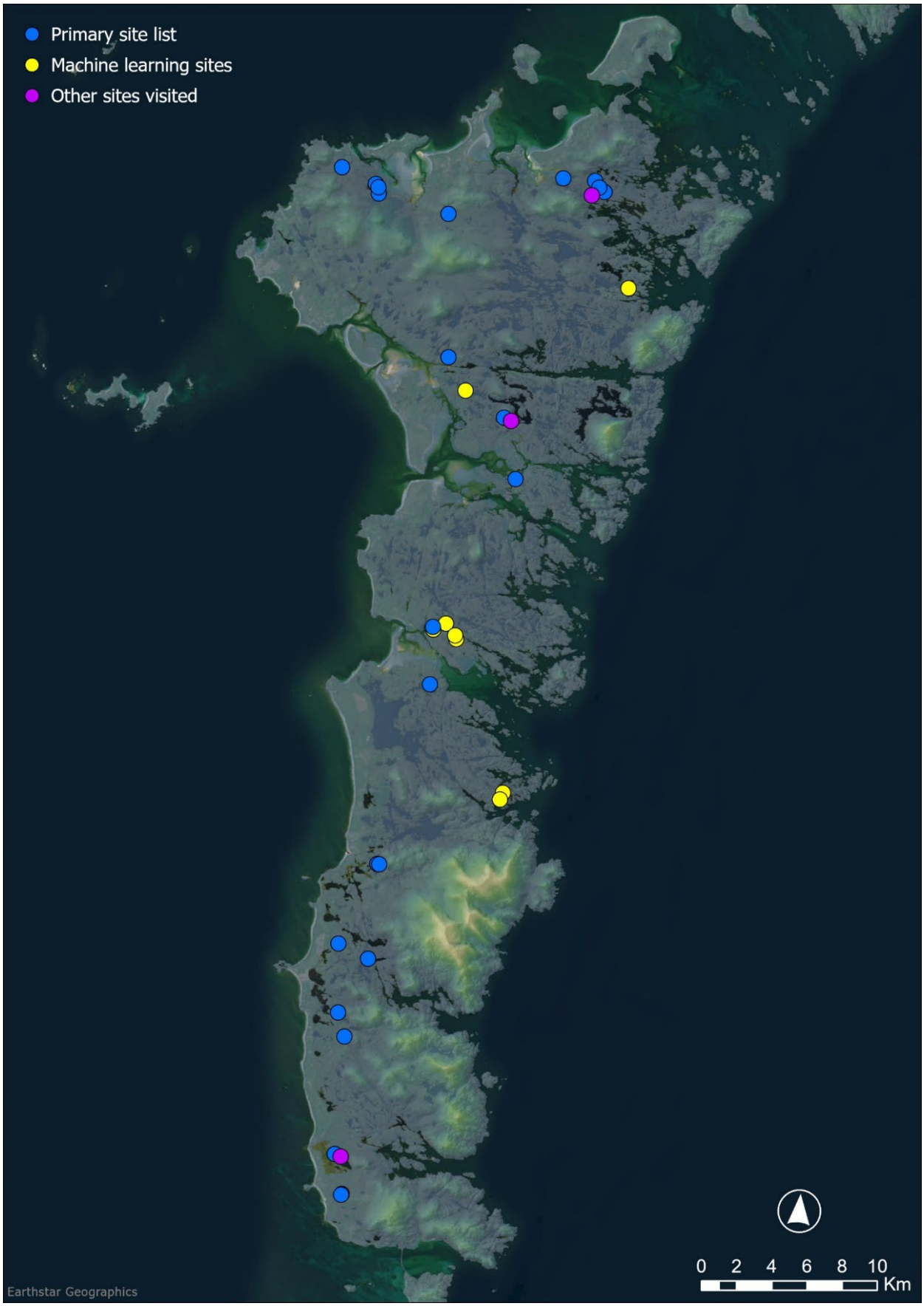


FIG 1. MAP OF ALL SITES SURVEYED DURING 2022 FIELDWORK

# 4. METHODS

Given the architectural complexity of these sites and their mixed terrestrial-underwater contexts, survey of them involved two primary aspects: above water and below water investigations. Aerial survey and physical on-islet inspection provided useful information regarding the nature and construction of these sites (as well as indications of period, if the island supports structures). However, our primary means of understanding these sites was in-water inspection. This was done on snorkel for shallower sites and on SCUBA for deeper sites. Given the nature of the sites visited, snorkel was all that was required on sixteen sites, with SCUBA employed on five.

## DIVE SURVEY

In-water inspection was the primary means of investigating our shortlisted sites. It was often the first method employed as it allowed the team to assess the ease of access to the site, the nature of the loch bed (e.g. depth, vegetation, sediments) and the islet (e.g. artificiality, construction materials, surface remains) before any additional survey methods, if deemed necessary, were employed. Where water visibility was low (usually in lochs with heavy peat-stain or weed growth), a fingertip search was used to identify materials on the loch bed. Where feasible (and suitable) underwater imagery was collected using a GoPro Hero9.

Generally, on each site, the dive team (5-6 people), always initially on snorkels, would disperse evenly around the crannog, gaining a basic overall understanding of the site before investigating any areas of interest in further detail. Usually, an area extending out c. 10-20 m from the crannog was explored (further in some cases). The dive team spent a minimum of 30-60 minutes investigating each site, even where no artefacts were observed, and in the small minority of sites where conditions made detailed observations difficult to achieve. Where interesting material or features were encountered, more time was invested in the site (see site specific entries below).

Where finds were observed on the loch bed, these were bagged with separate small find numbers. Their spatial position was noted in-water and subsequently recorded on an iPad with position derived from a Garmin GLO2 GNSS, with final location selection augmented through reference to aerial photos and maps provided via ArcGIS Fieldmaps. This system was less accurate than use of an RTK GPS plotting of each find, but given the relatively rapid nature of our work and the uncertain specific archaeological context of most finds recovered was considered the most efficient and effective solution to finds recording.

## AERIAL SURVEY

Aerial surveys of all sites of interest were undertaken with a DJI Matrice 300 RTK drone. This UAV allows for rapid generation of accurate models through establishing an RTK GPS connection between base station and drone. Additional ground control points were recorded through use of a Leica Viva GNSS connected to the SmartNet correction service. Photogrammetry surveys were conducted with a Zenmuse P1 Payload with 35mm lens, and LiDAR surveys were carried out with a Zenmuse L1 Payload. Most flights were automated for increased accuracy, relying on DJI software and GPS connection to create an optimised flight path over the loch. All automated flights were flown at an elevation of 100 metres MSL, the lowest allowable altitude for manual surveys. This resulted in a resolution of c. 1 cm for the photogrammetry surveys and c. 3 cm for LiDAR surveys. Additional photogrammetry surveys were conducted without automated flight paths (enabling flights at lower altitudes and thus higher resolution) if more accurate and detailed models were desired, and additional images and videos were also collected at a range of altitudes. For sites that were more difficult to access, a lighter, smaller DJI Mavic Pro was used. All survey data was supplemented through the use of ground control points (GCPs) and in some instances more in-depth topographic surveys around the loch using an RTK-GPS.

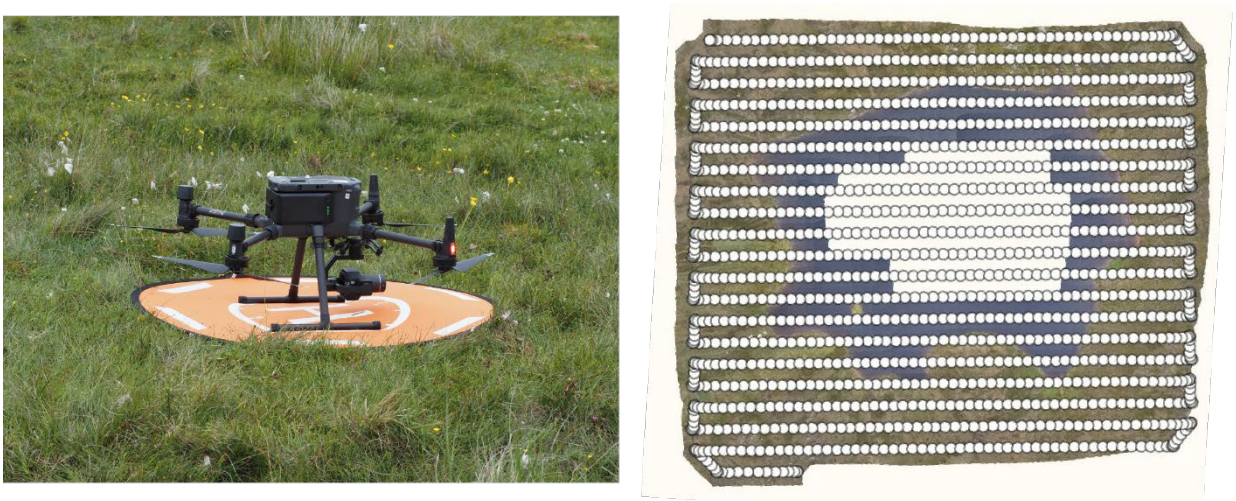

FIG 2. DJI MATRICE 300 RTK DRONE WITH ZENMUSE P1 PAYLOAD (LEFT). AUTOMATED FLIGHT PATH OVER LOCH (RIGHT)

In total, 14 lochs (including 20 islets) were recorded through automated photogrammetric survey, five of these were also recorded through automated LiDAR survey and three islets of interest were selected for more detailed photogrammetry surveys. Given the varying sizes of lochs, automated surveys generated between 700 to 2000 images. Automated photogrammetry surveys were processed in DJI Terra, where 2D orthomosaics and 3D outputs – digital terrain models (DTMs) and 3D objects (.obj files) – were produced. The LiDAR surveys were also processed in DJI Terra and then imported into Spatix-Terra Solid, DJI's LiDAR processing software, where noise and vegetation was removed to produce digital surface models (DSMs). For the more detailed crannog surveys, the drone was flown manually about 5-10 metres above the surface of the crannog, allowing fewer images (around 250) to be collected. These surveys were processed in Agisoft Metashape Professional, and orthomosaics, DTMs and .objs were produced. All 2D data was imported into ArcGIS Pro, where plans and profiles were generated for each site (see Section 5. Surveyed Sites). 3D models from these detailed surveys have been made available on SketchFab (https://sketchfab.com/IoS_Hebrides) and the project website (https://crannogs.soton.ac.uk/dissemination/3d-models).

## SONAR

Sonar survey was conducted at seven lochs in order to understand the depth of the loch bed, the presence of surface deposits and vegetation, and the nature of islet construction underwater. A lightweight consumer grade sonar (Lowrance HDS Live 12, with 3-in-1 live site transducer) was selected for survey due to the need for portability and variety of mounting options. Data from the sonar was processed in SonarWiz and BioBase before being imported into ArcGIS Pro.

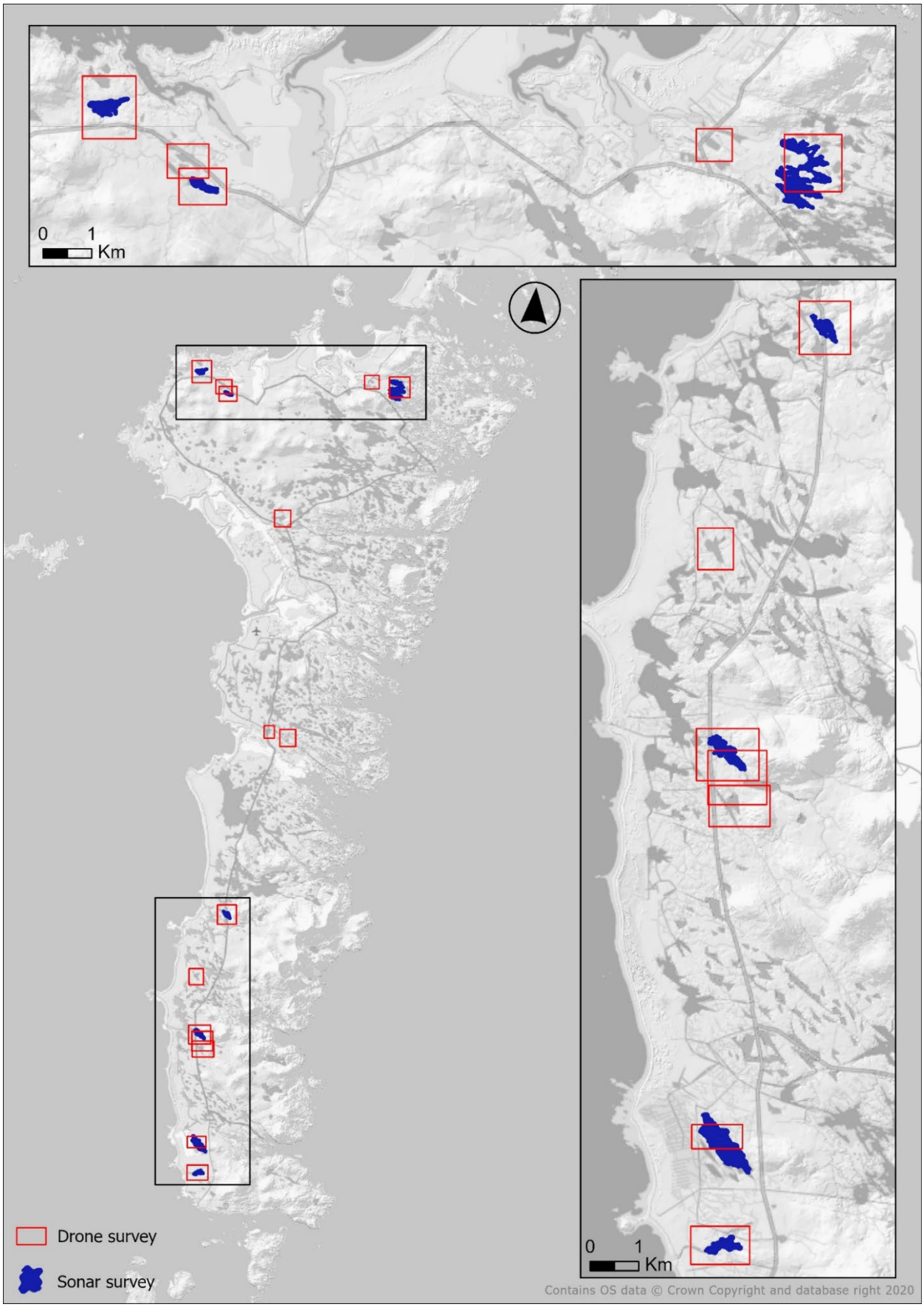


FIG 3. DRONE AND SONAR SURVEY FOOTPRINTS

## CORING

A single core was taken close to the islet in Loch nan Clachan. Although Kildonan could also have benefited from coring, it is a scheduled monument (in addition to being composed of more consolidated sediments overlying bedrock) and was thus not cored. The core taken at Loch nan Clachan was retrieved in order to resolve questions relating to loch level fluctuations, the impact of sea level rise/isostacy on the loch and overall environmental change at the site. The core was taken with a 1 metre gouge at around 4.5m from the exposed margin of the islet and a loch depth of 1m. Sediments were recorded in the field prior to further examination at the British Oceanographic Sediment Core Research Facility (BOSCORF) in Southampton.

FIG 4. ONE METRE CORE FROM LOCH NAN CLACHAN SHOWN IMMEDIATELY AFTER RETRIEVAL

## LANDSCAPE SURVEY (HES)

Fieldwork as a broader part of the Islands of Stone project was undertaken by Historic Environment Scotland (HES) during the final week of July 2022. The landscapes around four Neolithic crannogs were investigated, all of which have produced evidence for occupation dating to this period. Two of these are situated in the south-east of Lewis (Loch Arnish, Canmore ID 4316 and Loch an Duna, Canmore ID 4227), one in North Uist (Loch nan Clachan, Canmore ID 10094) and the other in South Uist (Kildonan, Canmore ID 9846). Fieldwork involved a review of the positional accuracy and classification of all previously recorded sites in the national record, Canmore, as well as ground prospection for new sites. The majority of all new discoveries relate to the post medieval period. QGIS was used in the field on a handheld computer with downloaded maps, site records and aerial photographs, with lidar data where there was coverage. All archaeological features were plotted by dGPS at mapping scales and brief descriptive accounts were created supplemented by photography where appropriate. The results of this fieldwork have been processed and are available online through Canmore.

## SURVEY STATISTICS

The following statistics detail the work undertaken during this four-week field season (Table 1).

| Site Name | Snorkel time (min) | No. of snorkellers | SCUBA time (min) | No. of SCUBA divers | Drone | Sonar |
|---|---|---|---|---|---|---|
| Eilean Domhnuill (IoS 6) | 60 | 5 | n/a | n/a | photogram. | yes |
| Loch nan Gearrachun (IoS 13) | 30 | 5 | n/a | n/a | photogram. | no |
| Loch nan Gearrachun (IoS 14) | 30 | 5 | n/a | n/a | photogram. | no |
| Loch nan Clachan (IoS 18) | 60 | 5 | n/a | n/a | photogram., LiDAR | yes |
| Dun Eashader (IoS 23) | 60 | 5 | n/a | n/a | no | no |
| Oban Trumisgarry (IoS 11) | 15 | 4 | n/a | n/a | photogram. | no |
| Dunan Dubh (IoS 12) | 60 | 5 | n/a | n/a | photogram. | yes |
| Loch an Duin (IoS 15) | 60 | 5 | 40 | 4 | photogram. | yes |
| Loch Bru (IoS 16) | 60 | 3 | n/a | n/a | photogram. | no |
| Clachan (IoS 51) | 120 | 5 | n/a | n/a | photogram. | no |
| Loch Carabhat (IoS 69) | 60 | 5 | n/a | n/a | imagery | no |
| Loch an Fhaing (IoS 81) | 60 | 5 | n/a | n/a | no | no |
| Gunisary Bay (IoS 100) | 30 | 5 | n/a | n/a | photogram. | no |
| Gunisary Bay (ML2) | 10 | 5 | n/a | n/a | photogram. | no |
| Loch an Daill (IoS 105) | 60 | 5 | n/a | n/a | no | no |
| Tobha Bheag (IoS 115) | 120 | 5 | 60 | 2 | photogram., LiDAR | yes |
| Tobha Bheag (IoS 116) | 30 | 3 | n/a | n/a | photogram., LiDAR | yes |
| Ormiclate (IoS 122) | 60 | 5 | n/a | n/a | no | no |
| Ormacleit (IoS 121) | 120 | 5 | n/a | n/a | photogram. | no |
| Kildonan (IoS 126) | 60 | 5 | 60 | 5 | photogram., LiDAR | |
| Mingearraidh (IoS 128) | 60 | 5 | n/a | n/a | photogram. | no |
| Eilean Chreamh (IoS 132) | 60 | 4 | n/a | n/a | photogram., LiDAR | yes |
| Loch an Eilean (IoS 135) | 30 | 5 | 30 | 3 | photogram., LiDAR | yes |
| Loch an Eilean (IoS 136) | 30 | 5 | 60 | 4 | photogram., LiDAR | yes |
| Loch Shior Thomais (ML 1) | 15 | 4 | n/a | n/a | no | no |
| Loch na Chraoibh Moire (ML 3) | 60 | 5 | n/a | n/a | no | no |
| Loch na Creige Glaise (ML 4) | 60 | 5 | n/a | n/a | photogram. | no |
| Big Fish Loch (ML 5) | 60 | 5 | n/a | n/a | no | no |
| unnamed (ML6) | 20 | 2 | n/a | n/a | no | no |
| Loch Deanadach (ML7) | 30 | 5 | n/a | n/a | no | no |
| Ob Saile (ML 8) | 30 | 3 | n/a | n/a | photogram. | no |
| Dun Torcuill (IoS 20) | 30 | 3 | n/a | n/a | photogram. | yes |
| Dun Ban (IoS 70) | 60 | 5 | n/a | n/a | imagery | no |
| Dun na Cille (IoS 133) | 30 | 1 | n/a | n/a | photogram., LiDAR | no |
| **Totals** | **1740 (min.)** | **152 (persons)** | **310 (min.)** | **20 (persons)** | **24 sites** | **10 sites** |
| **Total person hours** | **4408 (hours)** | | **103 (hours)** | | | |

TABLE 1. STATISTICS OF WORK UNDERTAKEN

# 5. SURVEYED SITES

In total, 34 sites were surveyed over the course of four-weeks. The following section details each site and any material information extracted (Fig 5 and Fig 6).

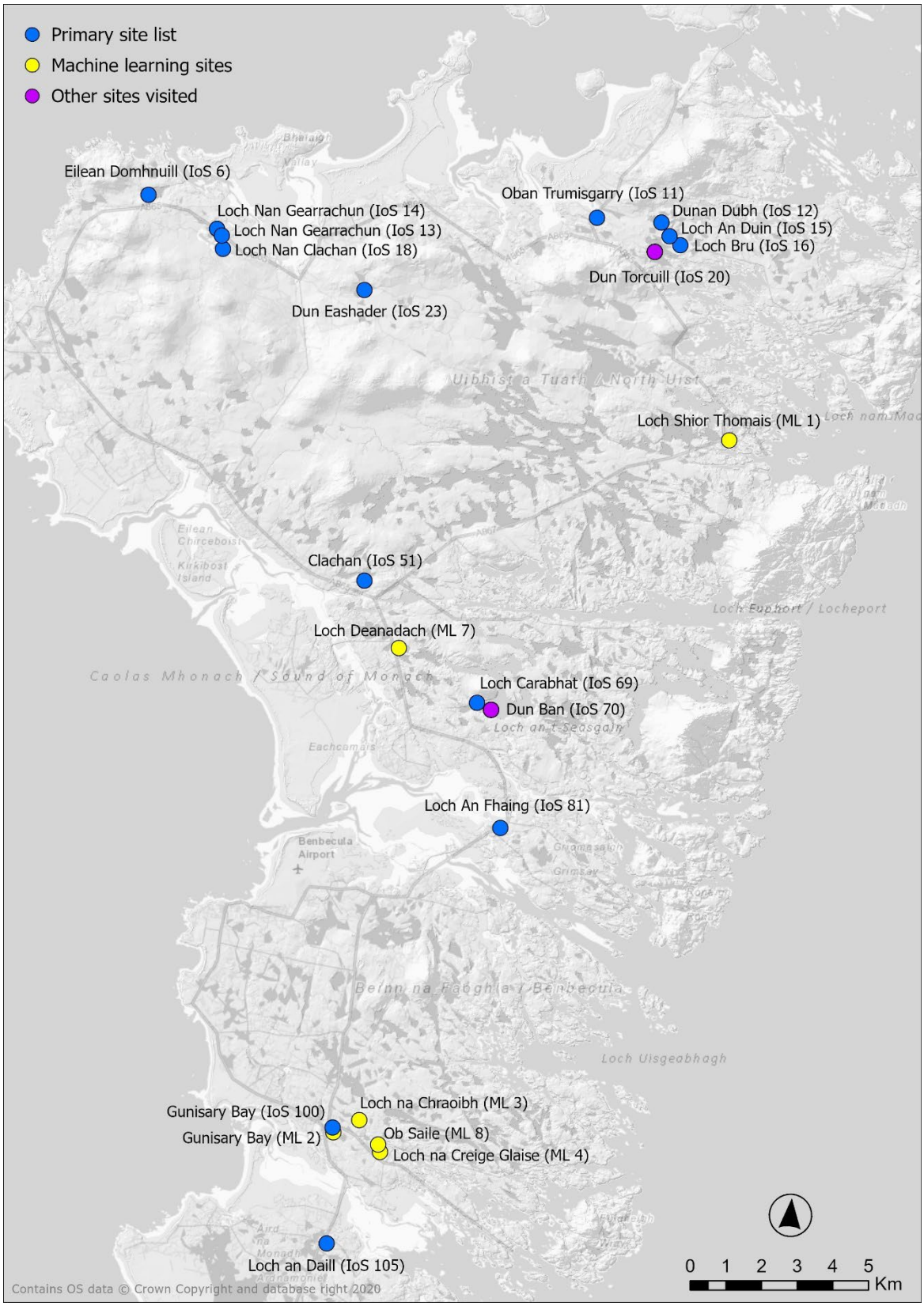


FIG 5. ALL SITES SURVEYED IN NORTH UIST AND BENBECULA IN JULY 2022

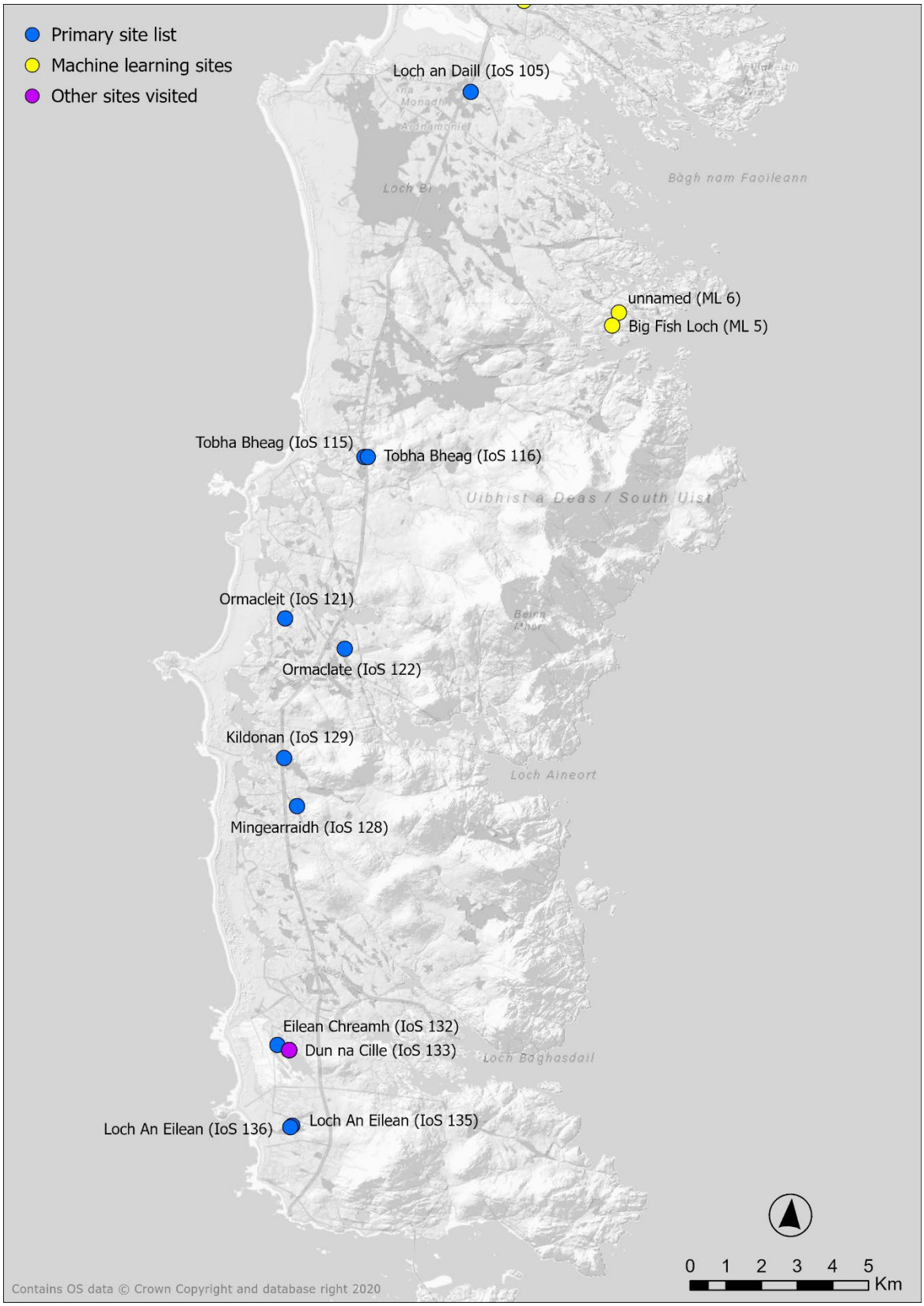


FIG 6. ALL SITES SURVEYED IN SOUTH UIST IN JULY 2022

## NRHE/HER SITES

**Eilean Domhnuill (IoS 6)**

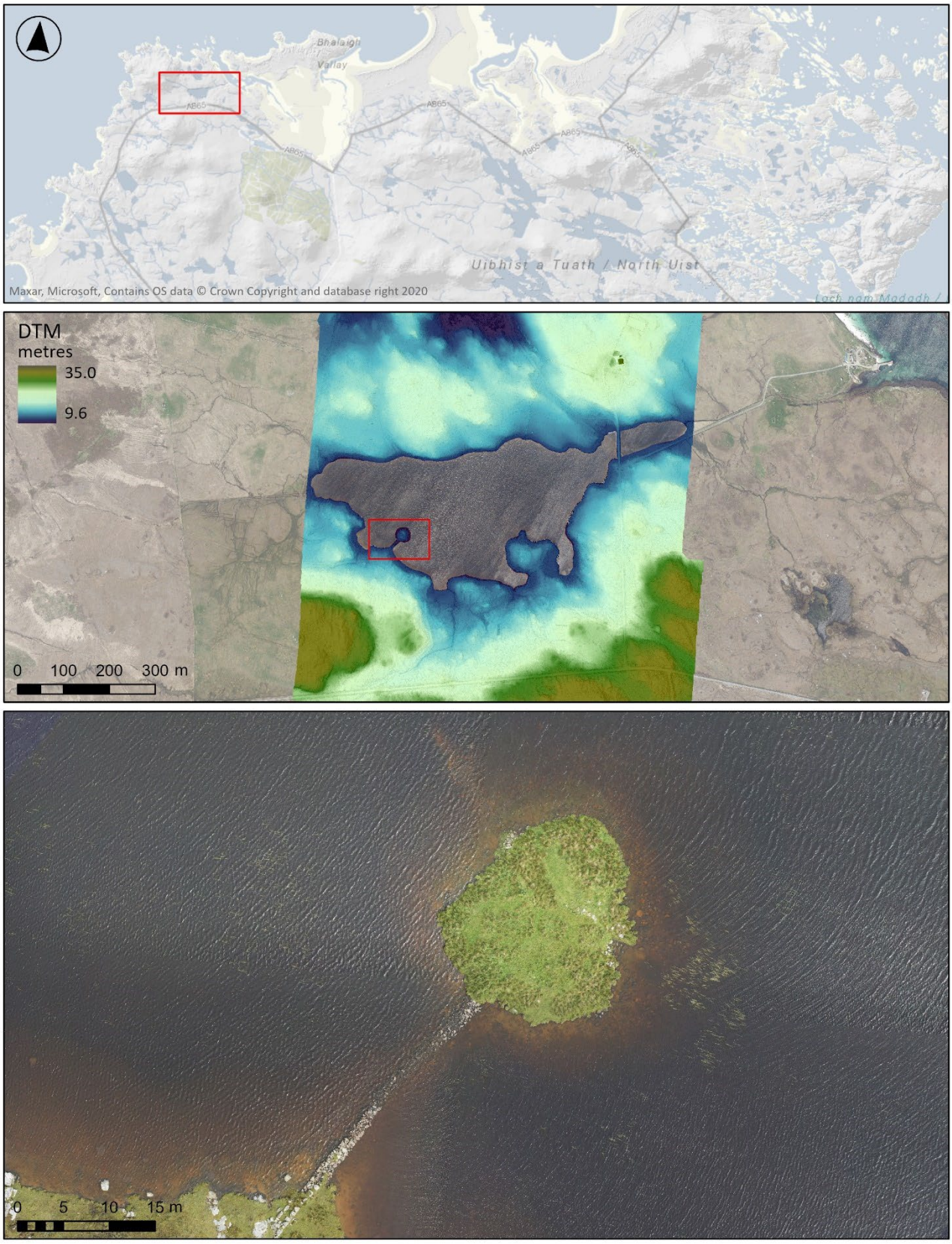


FIG 7. LOCATION OF EILEAN DOMHNUILL

| | |
|---|---|
| **Site name:** | Eilean Domhnuill (IoS 6) |
| **Loch name:** | Loch Olabhat |
| **Canmore ID:** | 10069 |
| **Grid Reference:** | NF 74696 75332 |
| **Island:** | North Uist |
| **Date visited:** | 05/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry, sonar survey |
| **Islet description:** | ▪ 19x24m diameter (extent visible above July 2022 loch level)<br>▪ 1m height (above July 2022 loch level)<br>▪ Artificial islet comprised of portable stones piled on shallowing in loch |
| **Loch description:** | Islet sits on area of consistent depth (c. 1.2m). |
| **Sediment description:** | Stones appear bedded on coarser grained (sandy/gritty) sediments. |
| **Archaeological materials:** | Pot fragments and knapped quartz are visible around the island. No wood was visible – neither timber structures nor exposed sections. |
| **Remaining questions:** | Questions regarding the construction sequences of the lowest levels of the site remain. |
| **Canmore URL:** | https://canmore.org.uk/site/10069/ |

Eilean Domhnuill is located in Loch Olabhat to the northwest of North Uist. As the only previously known Neolithic crannog in North Uist, Eilean Domhnuill was visited at the beginning of the 2022 field season to form a comparison with Neolithic crannogs already surveyed and excavated in Lewis and to generate an initial understanding of the site type being sought through the ensuing field survey in Uist. A detailed survey of the site was conducted through aerial photogrammetry and sonar. The aim of the survey was to generate a digital dataset of the islet and loch in order to generate statistics for future work and form comparisons to other Neolithic islets already surveyed in Lewis and those potentially yet to be revealed in Uist. Snorkel inspection around the site was also undertaken to further understand the nature of this site and generate a sense of the site type being sought.

The islet is located to the south of the loch and is connected to the shore via a c. 26m causeway. The oblong 19 x 24m islet is positioned on a shallowing within the loch and is comprised of portable stones bedded on course-grained sands and grits. The islet rises around 1 m above current loch levels and the surface is obscured by vegetation, although evidence of the 1980s excavations is apparent in the digital elevation model. No timber was observed, although the non-invasive nature of the survey work carried out does not preclude its existence below observable loch bed sediments. A substantial linear stone feature running underwater from the northwest side of the islet for a distance of around 13m was also observed. This feature was constructed by Armit's team, from stone removed from the islet during excavation, in order to gain access to fresh water for wet sieving (Ian Armit, pers. comm.).

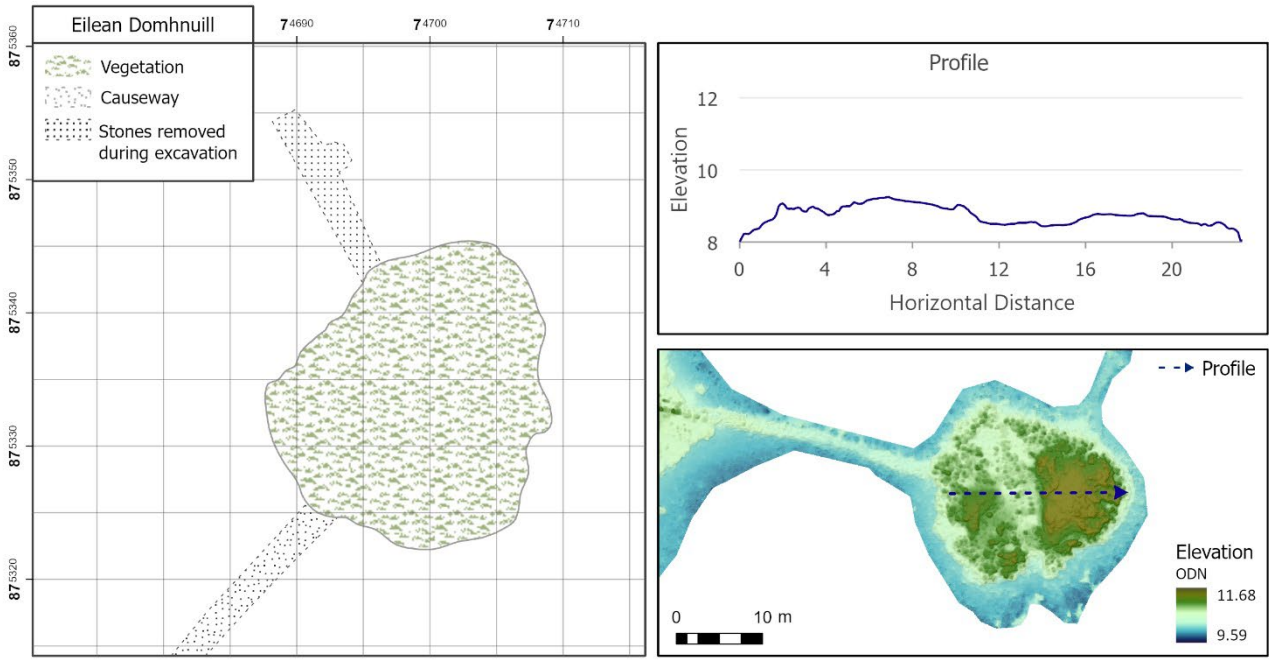


FIG 8. DIGITISED ISLAND AND ELEVATION PROFILE OF EILEAN DOMHNUILL DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

Numerous pottery fragments and worked quartz objects were noted on the loch bed around the site, as would be expected given the large quantity of these materials that were recovered from the site (Fig 9Fig 8). These finds were left in situ but indicate materials/dates congruent with those recovered during excavation.

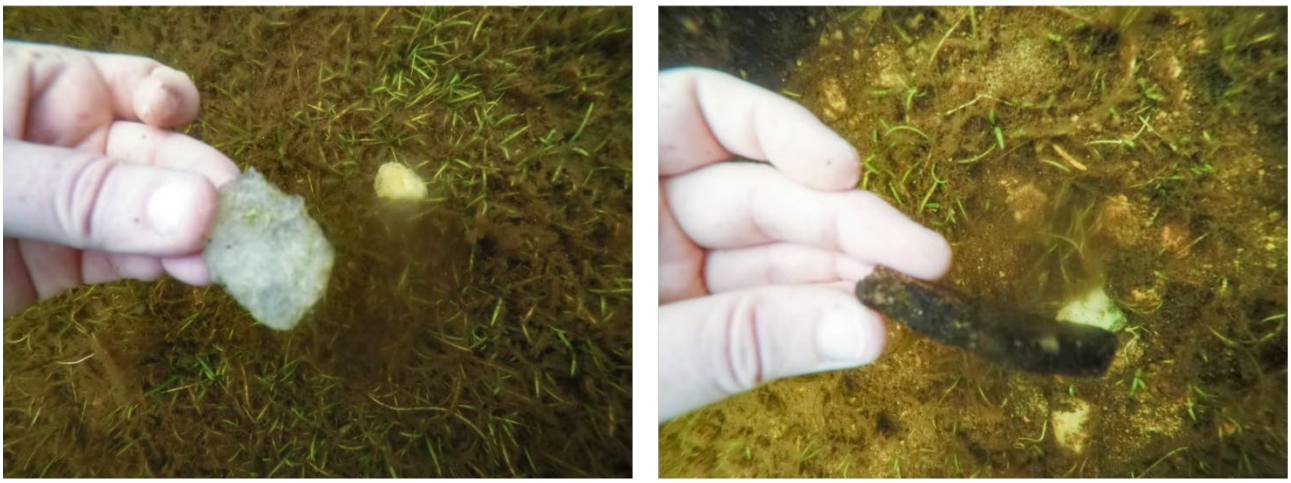

FIG 9. QUARTZ FLAKE (LEFT) AND POTTERY SHERD (RIGHT) OBSERVED ON LOCH BED AROUND EILEAN DOMHNUILL

**Bathymetry**

Bathymetric survey of the loch revealed its very shallow, and at times highly vegetated, nature. This shallow nature limited accessibility at the western edge of the loch even to a small inflatable craft. The islet sits in area with a shallow gradient with a consistent depth of water of c. 1.3m. The loch deepens to a maximum of c. 3m at the point where it constricts at its eastern edge where the modern road now crosses it (Fig 10). The strength of the sonar returns (Fig 11) show that the crannog sits within an area of softer sediment which gives away to exposed rocks to the east.

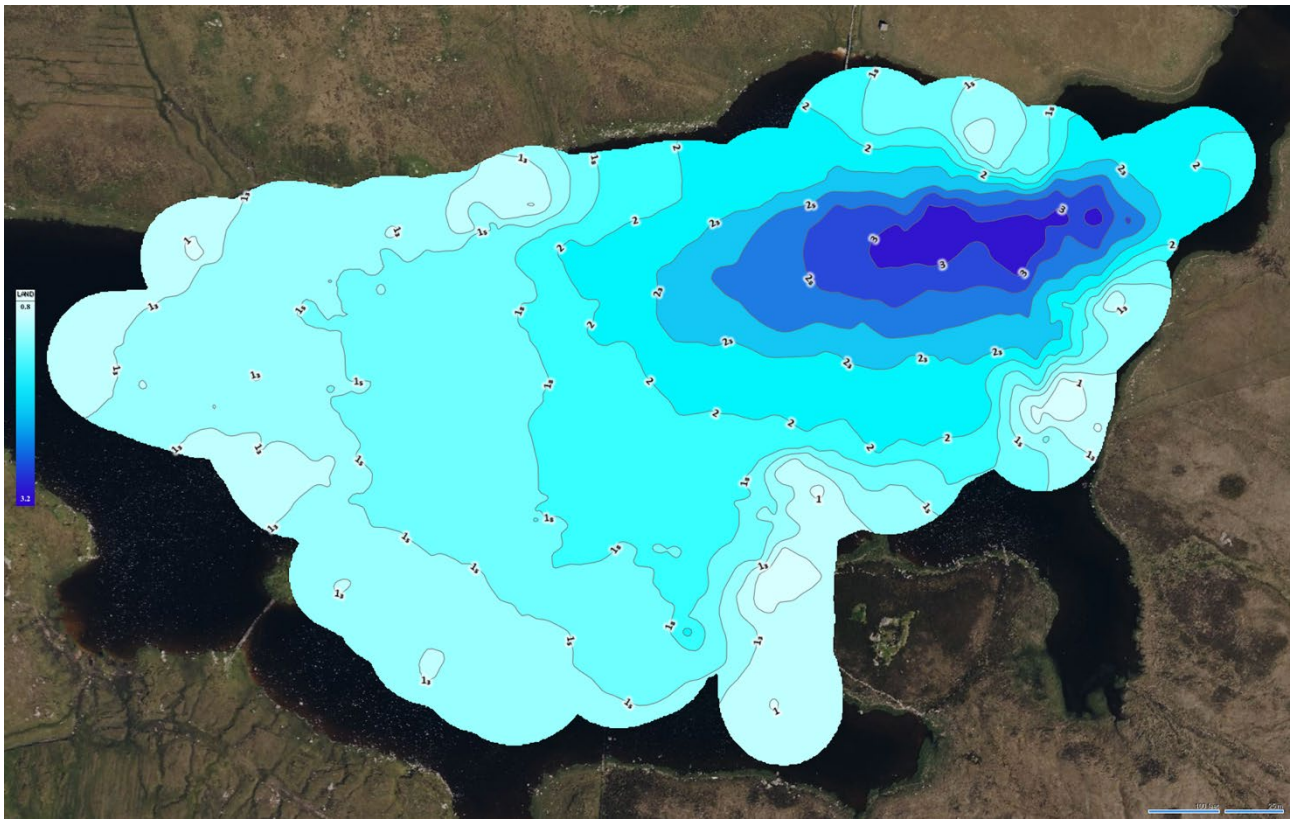

FIG 10. DEPTHS OF LOCH OLABHAT

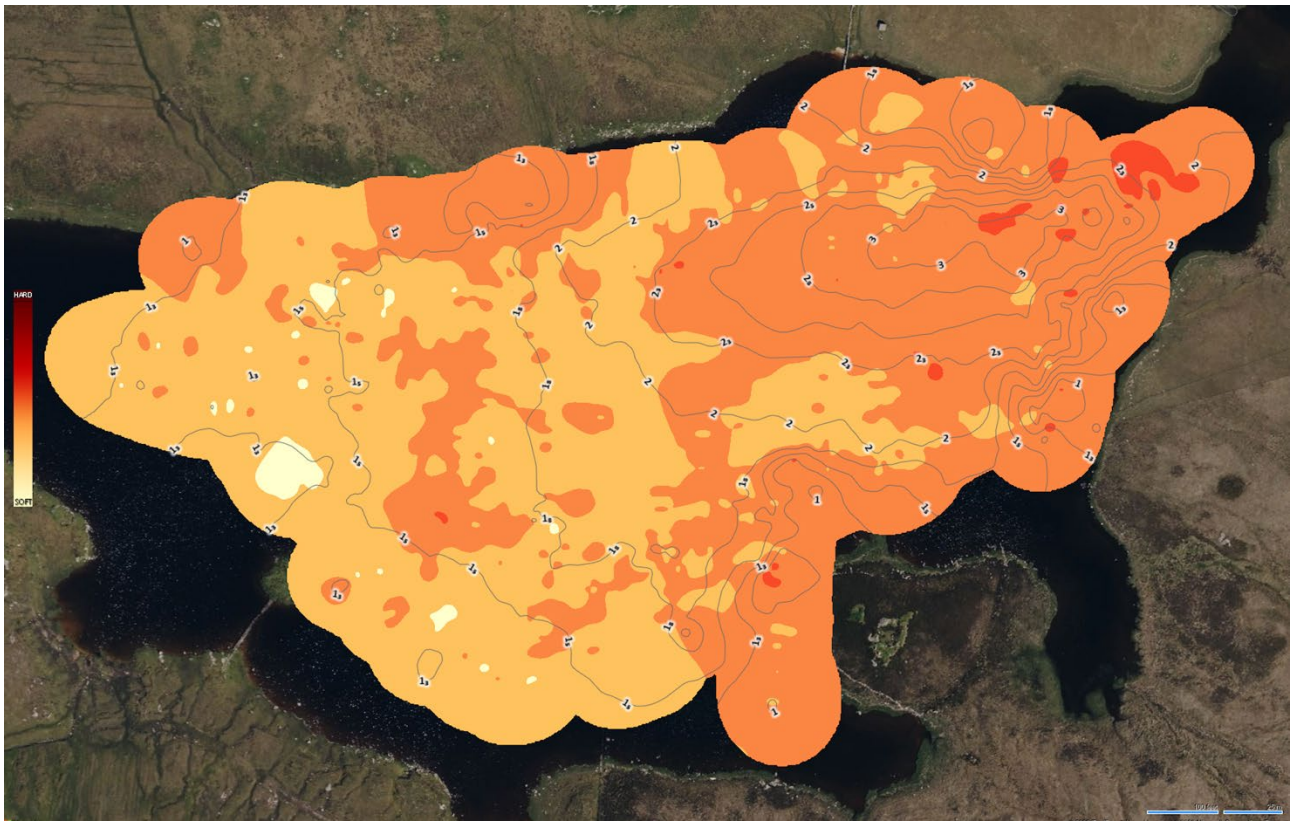


FIG 11. LOCH BED CHARACTERISTICS OF LOCH OLABHAT

**Loch nan Gearrachun (IoS 13), (IoS 14)**

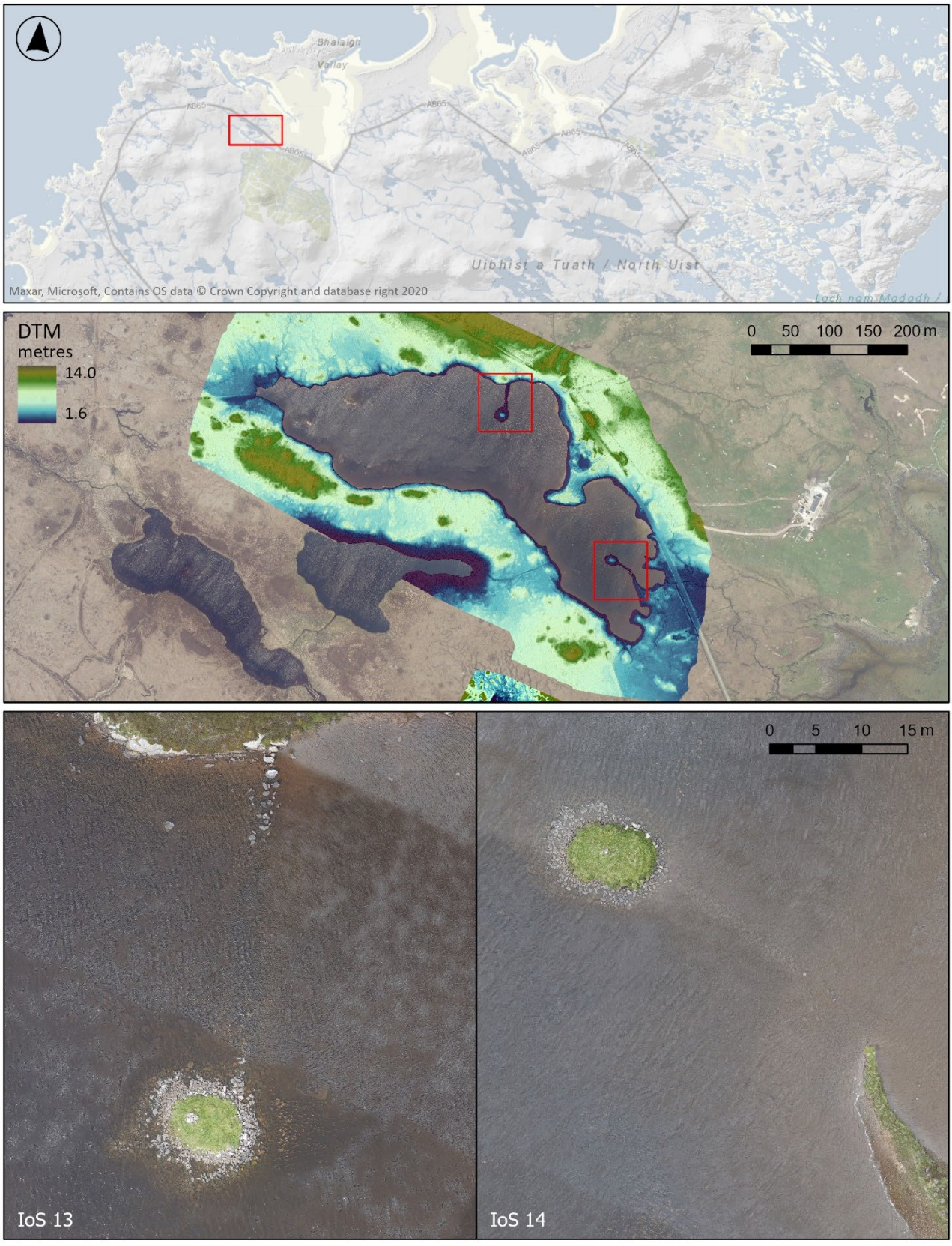


FIG 12. LOCATION OF TWO ISLANDS IN LOCH NAN GEARRACHUN

| | |
|---|---|
| **Site name:** | Loch nan Gearrachun (IoS 13) |
| **Loch name:** | Loch nan Gearrachun |
| **Canmore ID:** | 10087 |
| **Grid Reference:** | NF 76612 74375 |
| **Island:** | North Uist |
| **Date visited:** | 06/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry, LiDAR survey (of structure between Loch nan Gearrachun and Loch nan Clachan) |
| **Islet description:** | ▪ 9.5x11m diameter (extent visible above July 2022 loch level)<br>▪ 1m height (above July 2022 loch level)<br>▪ Artificial islet comprised of portable stones piled on a shallow loch bed |
| **Loch description:** | Islets sit on area of consistent depth (c. 1.2m). |
| **Sediment description:** | Stones appear bedded on compact sandy bedrock. |
| **Archaeological materials:** | A single sherd of undiagnostic pottery was recovered. |
| **Remaining questions:** | The absence of material culture at this clearly artificial site leaves more questions than answers as to its date, construction and use. The geographical proximity of Loch nan Gearrachun to the (now known) Neolithic site at Loch nan Clachan (see below) and the linear feature running between the two lochs highlights questions regarding the relationship between the two. |
| **Canmore URL:** | https://canmore.org.uk/site/10087/ |

| | |
|---|---|
| **Site name:** | Loch nan Gearrachun (IoS 14) |
| **Loch name:** | Loch nan Gearrachun |
| **Canmore ID:** | 10076 |
| **Grid Reference:** | NF 76752 74189 |
| **Island:** | North Uist |
| **Date visited:** | 06/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry, LiDAR survey (of structure between Loch nan Gearrachun and Loch nan Clachan) |
| **Islet description:** | ▪ 9x12.5m diameter (extent visible above July 2022 loch level)<br>▪ 1.1m height (above July 2022 loch level)<br>▪ Artificial islet comprised of portable stones piled on a shallow loch bed |
| **Loch description:** | Islets sit on area of consistent depth (c. 1.2m). |
| **Sediment description:** | Stones appear bedded on compact sandy bedrock. |
| **Archaeological materials:** | No material remains were observed. |
| **Remaining questions:** | The absence of material culture at this clearly artificial site leaves more questions than answers as to the date, construction and use of this site. The geographical proximity of Loch nan Gearrachun to Loch nan Clachan and the linear feature running between the two lochs also raises questions regarding the potential relationship between the crannogs in these respective lochs. |
| **Canmore URL:** | https://canmore.org.uk/site/10076/ |

Loch nan Gearrachun resides on the northwest coast of North Uist around 1.5km to the southeast of Eilean Domhnuill and 350m from the high-water mark of Vallay Sound. This loch contains two small stone islands, both of which were identified in the Stage 2 preliminary survey as having good potential for being Neolithic in origin – both are small (between 10-15m), clearly artificial and have no substantial architecture on their surface. In addition, Beveridge noted a significant increase in loch depth immediately beyond these islets, which provided an opportunity to explore a characteristic observed at two Neolithic crannogs in Lewis. Neither islet has been investigated to any extent with the exception of Beveridge's (1911, 198-99) description of them (see below).

The westernmost islet (IoS 13) is roughly circular, measuring 9.5m (N-S) by 11m (E-W). It is connected to the north shore of the loch via a c. 36m causeway. The easternmost islet (IoS 14) is oblong in shape, measuring about 9m (NW-SE) by 12.5m (NE-SW), and connected to a peninsula extending from the eastern shore of the loch via a 29m causeway. The current extent of both islets is roughly the same as, although slightly larger than, the measurements given by Beveridge, suggesting modern loch levels to be broadly similar to or slightly lower than they were at the time of his inspection.

Both sites are artificial, comprised of portable stones piled on compact sandy bedrock. The surface of both islets is covered in vegetation, and small cairns are visible on both. The westernmost islet is largely submerged, rising around 1 m from the loch surface, its irregular perimeter reflects this submergence and reveals the many portable stones on which the surface of the islet rests. These submerged stones extend underwater from between 1m to 5.5m from the surface of the islet, forming a circular stone mound of around 15m in diameter. The easternmost islet is much more cohesively formed, rising 1.1 m above the loch surface, with submerged stones extending around 1.5m around the oblong islet.

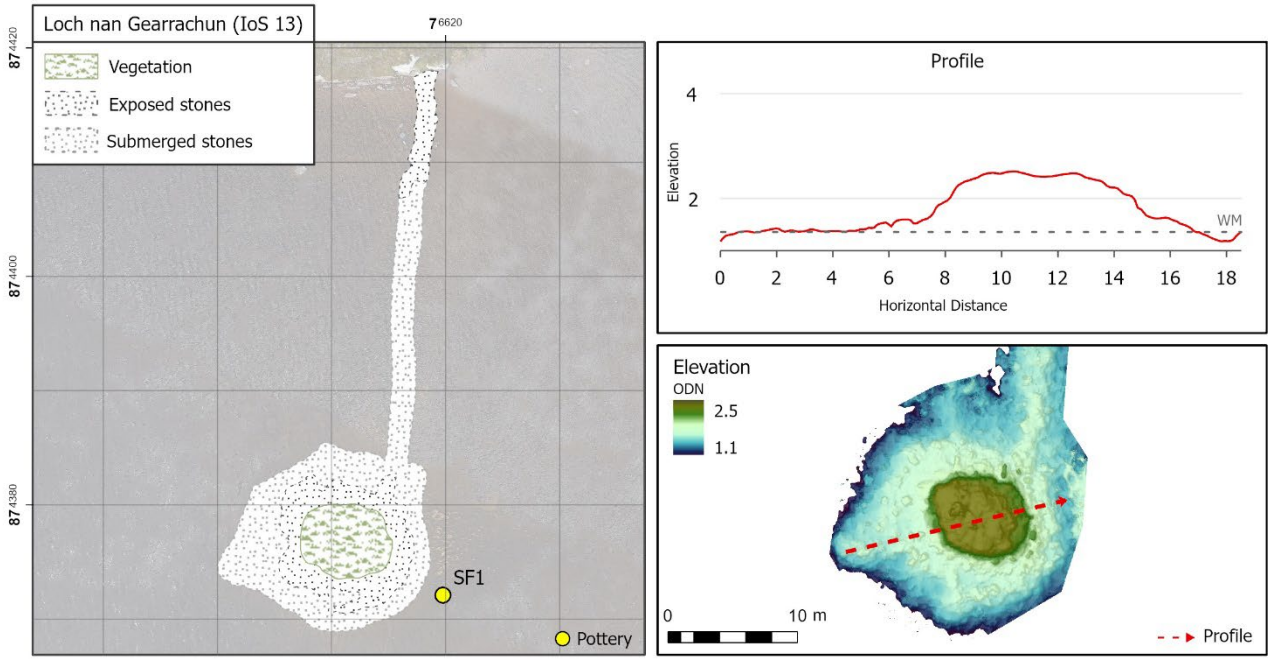


FIG 13. DIGITISED ISLAND AND ELEVATION PROFILE OF LOCH NAN GEARRACHUN (IOS 13) DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

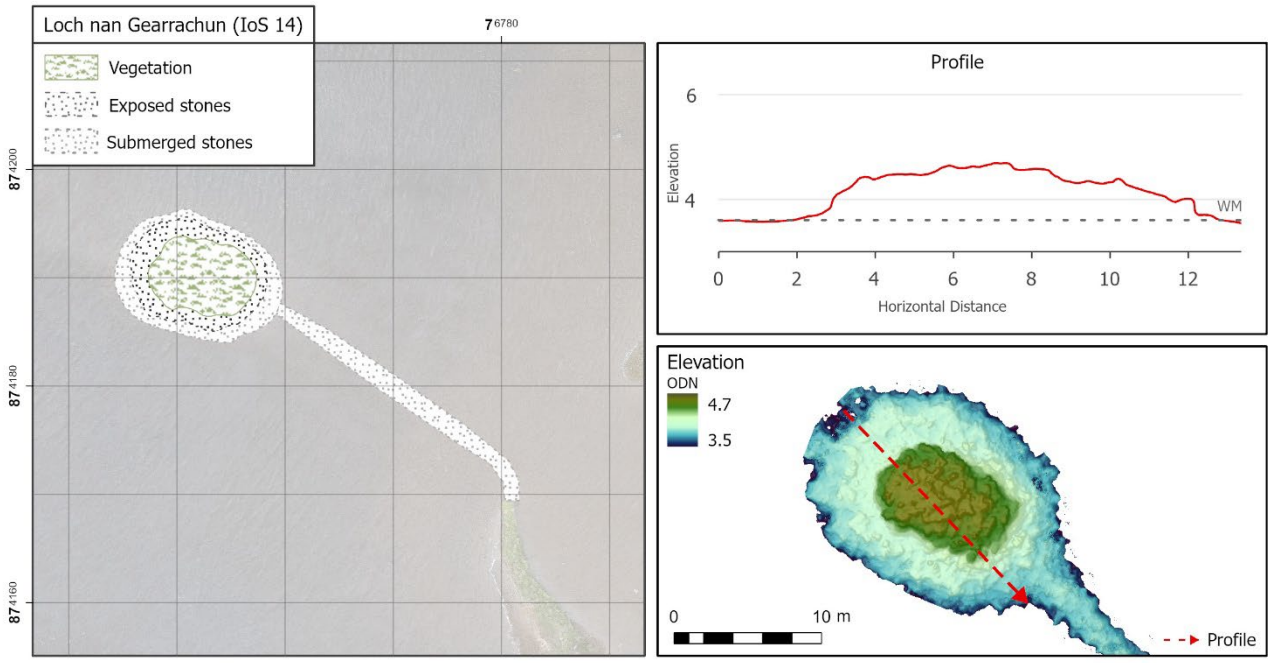


FIG 14. DIGITISED ISLAND AND ELEVATION PROFILE OF LOCH NAN GEARRACHUN (IOS 14) DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

According to Beveridge both islets were enclosed by a perimeter wall of up to three courses thick and observable around most of the circumference of these islets. Where submerged, the wall was suggested to be up to 2.7m from the margin of the island, and immediately beyond this point the loch bed was said to steepen significantly. Beveridge also mentions a 'substantial pier' on the south shore of the loch exactly opposite the western island and 'curving in its direction'. This pier was also noted during our survey and appears to form part of a broader linear feature (or stone wall) that extends from this loch to Loch nan Clachan to the east, connecting to the causeway of the islet in that loch ().

Although Beveridge's description of these sites broadly accords with our observations, there are also a number of discrepancies. Most significantly, no perimeter wall was observed at either site, either above or below the surface. With loch levels appearing to be broadly similar, the shallow nature of the loch around these islets and the good underwater visibility experienced by the team precludes the possibility of their existence. In addition, two cairns were observed on the surface of both islands which curiously were not noted by Beveridge. Given the above discrepancies and Beveridge's overall tendency to note these features on other islets, it is possible that these cairns were erroneously omitted or that they were constructed even more recently (using stone from the described perimeter walls?). The stone pier to the south of the eastern islet and running to Loch nan Clachan suggests later (medieval/post medieval) modifications (see Canmore ID 364945). Finally, although the entire loch was not inspected, the loch bed around these islands, between them and to the south of them was, and the significant drop off in loch levels noted by Beveridge was not observed.

Despite the clear artificiality of these two islets, only a single piece of undiagnostic pottery was recovered from the shallows around IoS 13. With little material culture and no organics recovered, it is not currently possible to establish the date of construction and use of these islets. The ease of access to this loch (the main road around North Uist runs along the shore of this loch) and the shallow nature of the loch around both islets raises the possibility of disturbance at these sites. For instance, the team was informed by a member of UCAG that the shore just north of the eastern islet is used as a 'lorry wash' with vehicles driving

off the main road into and along the shallow edge of the loch. This may have resulted in significant underwater disturbance to this site, although no evidence of this was observed around the islet.

Overall, the primary question pertaining to these sites revolves around the clear artificiality of the islets in contrast to the clear lack of material evidence for activity. Known Neolithic crannogs are usually associated with an abundance of pottery and worked quartz, while later Iron Age/Medieval islets generally contain architectural evidence on the surface of the islets. These two islets produced neither, and thus their construction and use remain a mystery.

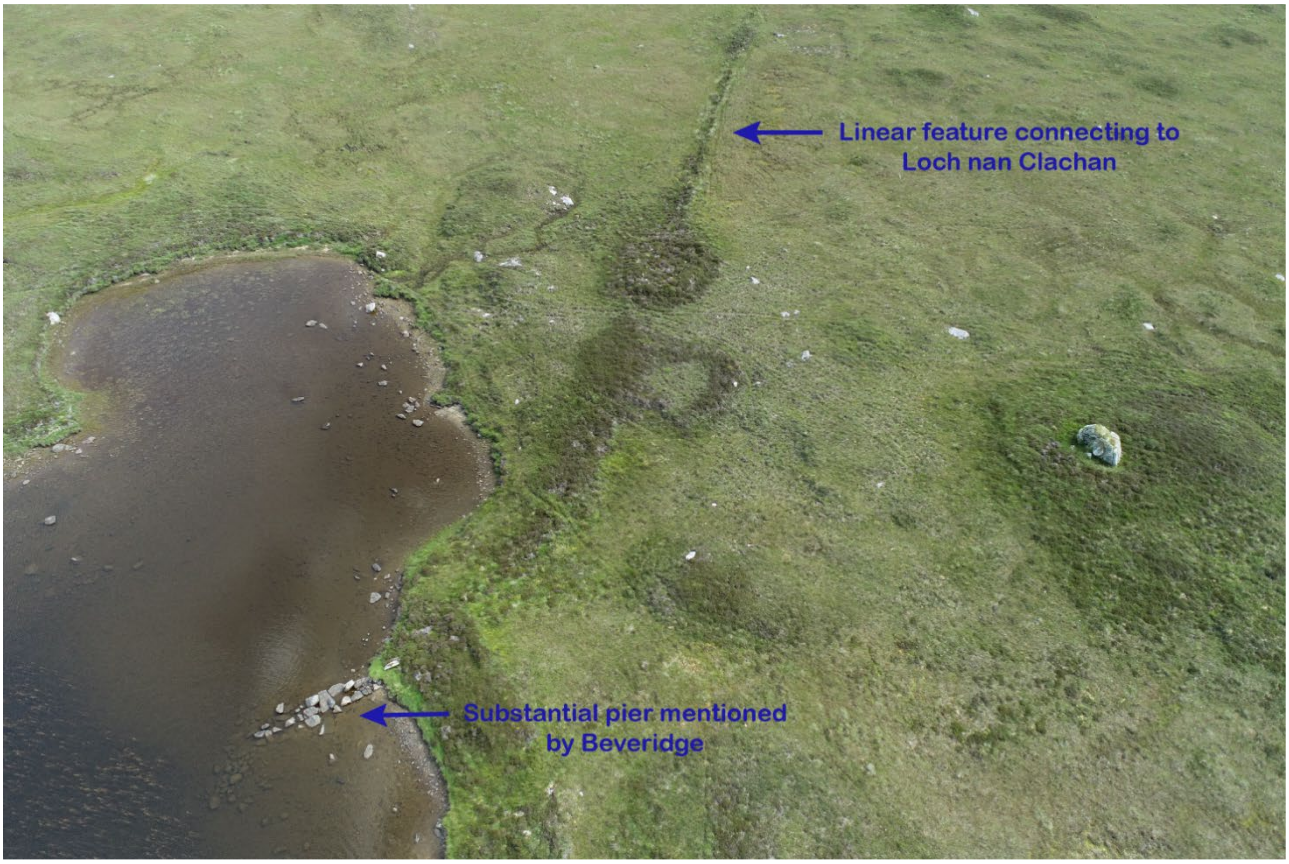


FIG 15. STONE PIER MENTIONED BY BEVERIDGE (1911, 198-99) AND LINEAR FEATURE RUNNING BETWEEN LOCH NAN GEARRACHUN AND LOCH NAN CLACHAN

**Loch nan Clachan (IoS 18)**

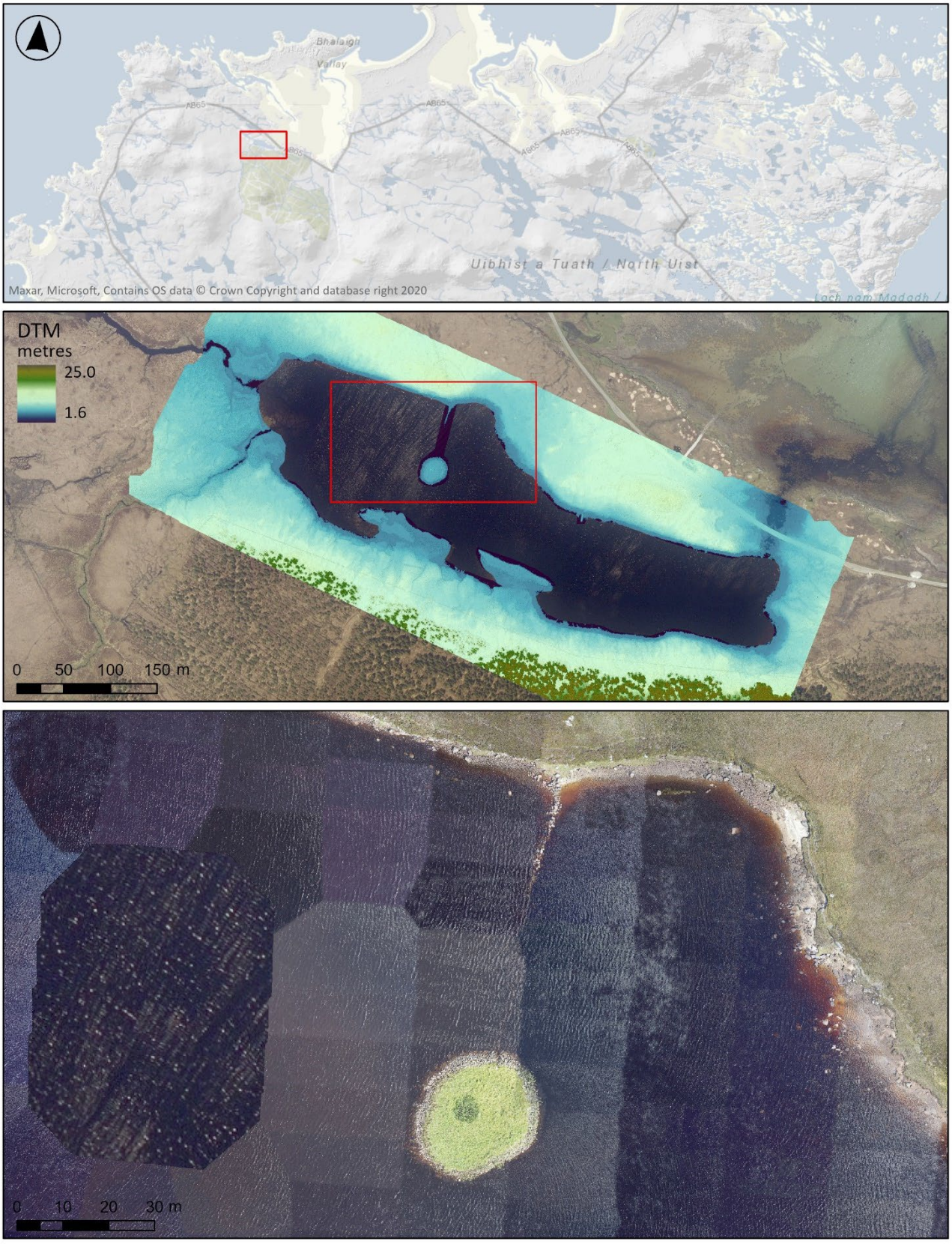


FIG 16. LOCATION OF LOCH NAN CLACHAN

| | |
|---|---|
| **Site name:** | Loch nan Clachan (IoS 18) |
| **Loch name:** | Loch nan Clachan |
| **Canmore ID:** | 10094 |
| **Grid Reference:** | NF 76780 73820 |
| **Island:** | North Uist |
| **Date(s) visited:** | 06/07/22, 15/07/22, 23/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry, LiDAR survey, 1m core, sonar |
| **Islet description:** | ▪ 30x25m diameter (extent visible above July 2022 loch level)<br>▪ c. 1m height (above July 2022 loch level)<br>▪ Artificial islet comprised of portable stones in shallow loch |
| **Loch description:** | Brackish tidal loch with peat-stained waters. Depth around the islet is fairly consistent (c. 0.5m) and deepens to the east. Notable loch level fluctuations were observed throughout month of fieldwork. |
| **Sediment description:** | Heavy silting around islet and peat-stained water prevented further observation. |
| **Archaeological materials:** | Numerous Neolithic Hebridean Ware and Unstan-type vessel sherds were recovered from within stones and on loch bed around islet. |
| **Remaining questions:** | With limited underwater visibility the construction of the islet remains unclear. The site is clearly Neolithic in origin, but it is unclear whether it contains later phases of use – later activity was noted around the loch but not on the islet itself. The tidal nature of the loch and surrounding infrastructure suggest changes in loch levels since prehistory which would require further environmental work to resolve. |
| **Canmore URL:** | https://canmore.org.uk/site/10094/ |

Loch nan Clachan is a brackish loch located on the northwest coast of North Uist. The loch is connected to Vallay Sound via a small channel running from its northeast shore, which is now crossed by the A865 (Fig 17). This channel as well as runoff from the road has caused substantial silting in the loch that, along with the heavy presence of peat in the water, limited underwater visibility. The loch is shallow around the islet (c. 0.5m) and increases in depth to the east.

The islet is roughly circular (c. 28m in diameter) and is connected to the north shore via a 60m causeway that is largely submerged. The islet is comprised of portable stones that rise from the loch bed to form a 1m high islet with low vegetation cover. Snorkel survey around the islet was hindered by the peat-stained waters, necessitating fingertip inspection, which was also challenged due to heavy silting around the site. Nevertheless, the islet appears to be entirely artificial, with its underwater perimeter also comprised of stones.

FIG 17. VIEW OF LOCH NAN CLACHAN FROM THE NORTHWEST, WITH VALLEY SOUND TO THE NORTH (BACKGROUND LEFT) AND THE A865 CHANNEL CROSSING (BACKGROUND CENTRE)

Beveridge (1911, p. 199-200) provided a description of the site that is rather puzzling in its contradictions, both to itself as well as to that which was observed by our team. While Beveridge claims the islet to be the site of a large island-fort (the prevailing view of artificial islets at the time), he also notes that the islet does not contain any surface structures thereby precluding his ability to make such assumptions. Similar to the islets in Loch nan Gearrachun, Beveridge describes a perimeter wall around the islet between 1.5-1.8m in thickness and seen especially to the north and east of the islet. He further suggests there to be a 1m wide 'main entrance' in the wall where the causeway meets the island. No such wall was observed during our investigations, and although it may have been obscured by vegetation covering the surface of the islet, according to Beveridge the islet was in a similar vegetative state at the time of his visit. Indeed, a photograph taken by Beveridge of the island (1911, p. 198-99) shows little evidence for an enclosing wall or indeed any substantial change at all to the island in the century since his investigation.

A survey by the Royal Commission on the Ancient and Historic Monuments of Scotland (RCAHMS) in 1914 suggested that the wall of the 'structure' had collapsed into the water. Again, no such collapse was evidenced by the team, although the overall lack of underwater visibility must be reiterated. It instead seems plausible that upon finding no evidence of Beveridge's enclosing wall, the RCAHMS believed it to have collapsed by that time, resulting in a perimeter of exposed stone. This perimeter of stone is characteristic of many crannogs and is simply the result of a lack of vegetation around the extreme edge of the islet, due to fluctuating loch levels. The metre wide 'main entrance' to the site is evident, although rather than being a gap in a perimeter wall, it appears to be a gap in the surface of the islet itself. This is typical of a boat naust, although in this case its position where the causeway meets the islet would prevent such a use. Beveridge also mentioned a 1.8m gap in the causeway about 18m from the islet. While the side scan sonar data did not demonstrate a complete gap in the causeway, its width and height does vary along

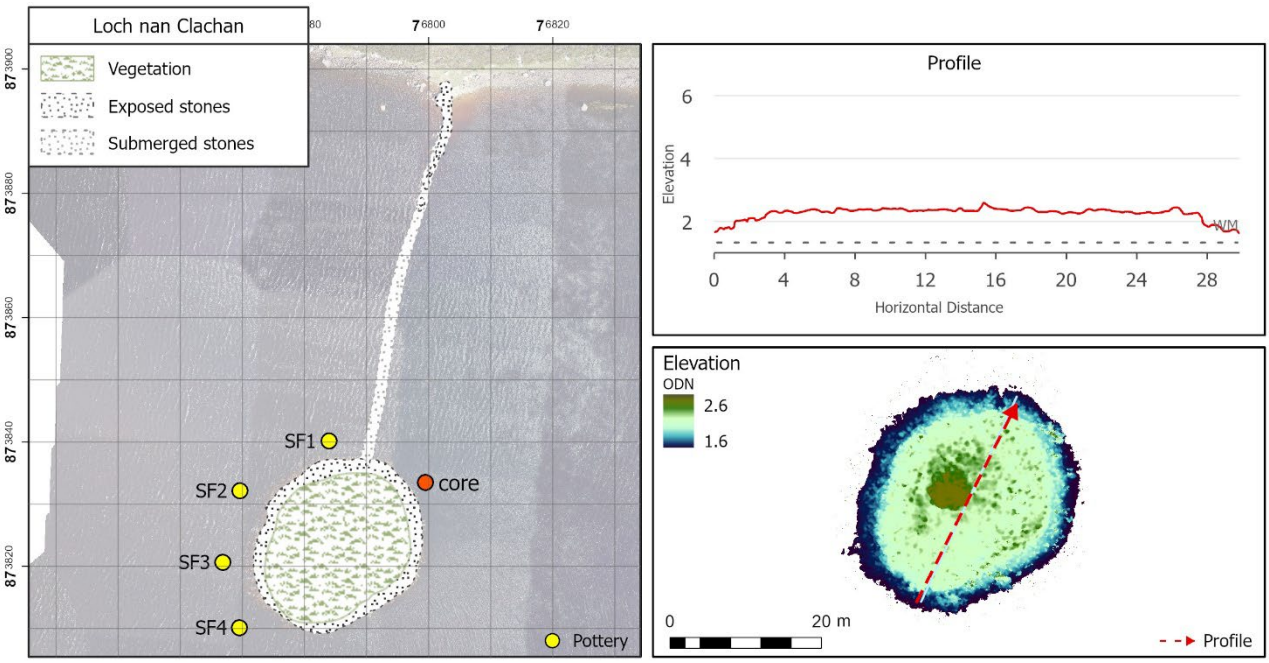


FIG 18. DIGITISED ISLAND (WITH LOCATION OF FINDS) AND ELEVATION PROFILE OF LOCH NAN CLACHAN DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

its length, with some low and narrow stretches, which may account for Beveridge's interpretation. This gap or narrowing in the causeway is also visible in aerial imagery taken by HES during good water visibility.

Despite the lack of underwater visibility and heavy silting, Neolithic pottery was recovered from amongst the stones at the base of the islet (a distance of around 2-5m from its surface) and on the loch bed around it. The recovered pottery is primarily decorated Hebridean Ware but a distinctive sherd from an Unstan-type vessel was also found. Charred residue from two of these sherds returned dates of 3510-3360 cal BC and 3480-3110 cal BC. This indicates a Neolithic date for the construction and use of the islet. Although no later materials were recovered, an investigation of the surface of the islet beneath the existing vegetation would be necessary to ascertain whether it witnessed multiple phases of use.

The landscape around the loch has certainly seen a lot of later activity. On the shore side of the causeway, an enclosure was noted on the digital elevation model derived from the aerial photogrammetry survey. This feature is recorded on Canmore as a post medieval stock enclosure and turf wall (Canmore ID 364945). Further investigation of the turf wall shows it to run from the end of Loch nan Clachan's causeway to the stone pier in Loch nan Gearrachun described by Beveridge (see Loch nan Gearrachun, above). This linear feature also passes through two rectilinear features near the shore of Loch nan Gearrachun. Although vegetation now obscures these features, a high-resolution DEM generated from the LiDAR survey shows them more clearly (Fig 19).

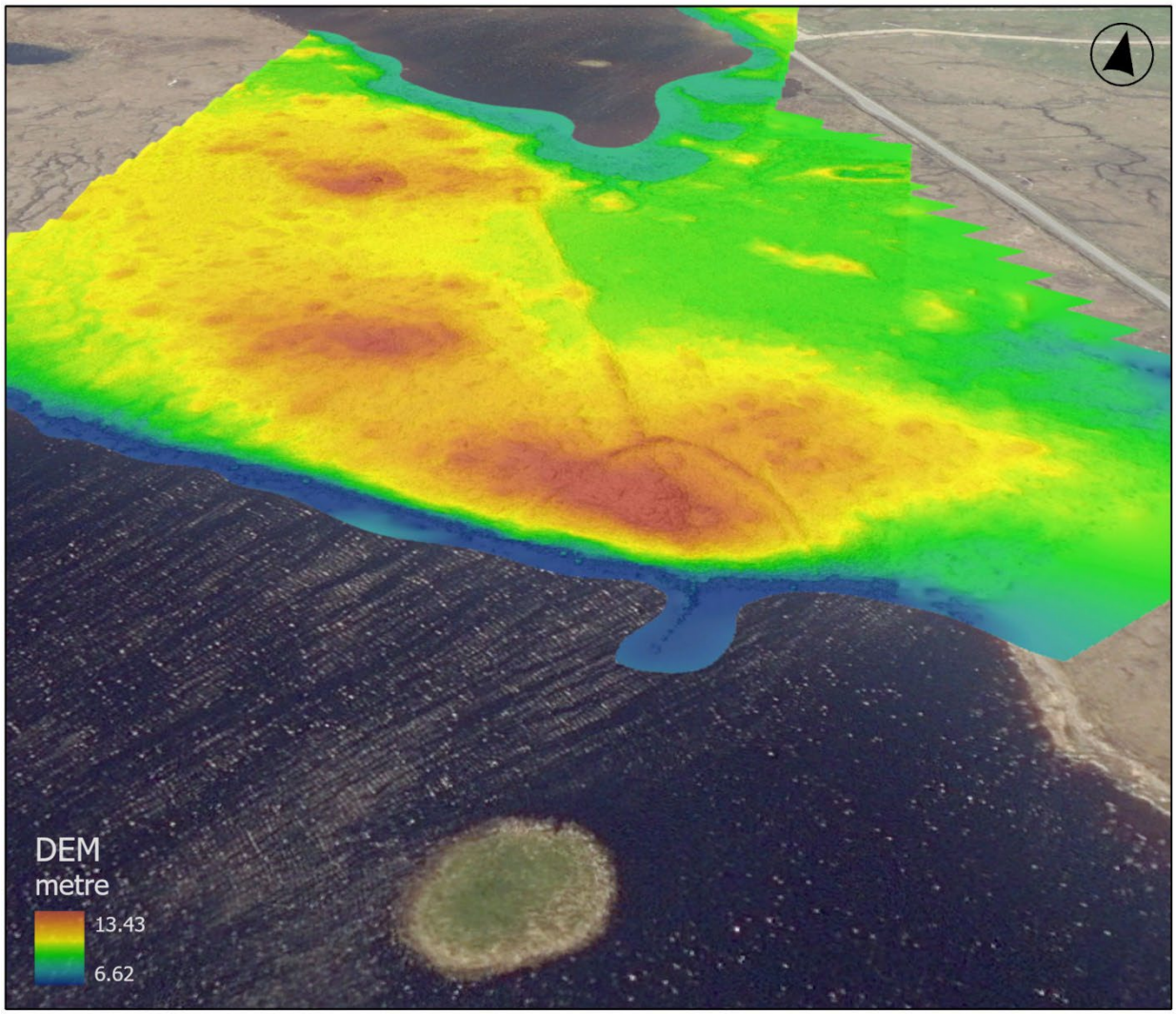


FIG 19. DIGITAL ELEVATION MODEL DERIVED FROM LIDAR SURVEY SHOWING EARTH AND STONE ENCLOSURE AROUND LOCH NAN CLACHAN CAUSEWAY AND LINEAR FEATURE RUNNING BETWEEN LOCH NAN CLACHAN AND LOCH NAN GEARRACHUN

While the date of this site's origin is now secure, the architecture of the islet itself remains somewhat unclear. The site appears to be entirely artificial, but this cannot be determined with certainty without further investigation in good underwater visibility. Furthermore, loch levels at the time of use are also unclear. Lower sea levels during prehistory would suggest that Loch nan Clachan was once a freshwater loch, and the now tidal nature of the loch suggests numerous fluctuations in loch levels over time. Indeed, loch levels were seen to fluctuate at the site throughout the month of fieldwork. To address these questions a core was taken to the northeast of the crannog around 3m from the islet's margin.

The core revealed a clear organic layer associated with islet construction, which is overlain by an organic peat rich deposit and later in-washed sands and silts. Samples taken for pollen and radiocarbon analysis will help to resolve issues relating to the dating of the sequence, its association with islet construction and the environmental context of construction.

**Dun Eashader (IoS 23)**

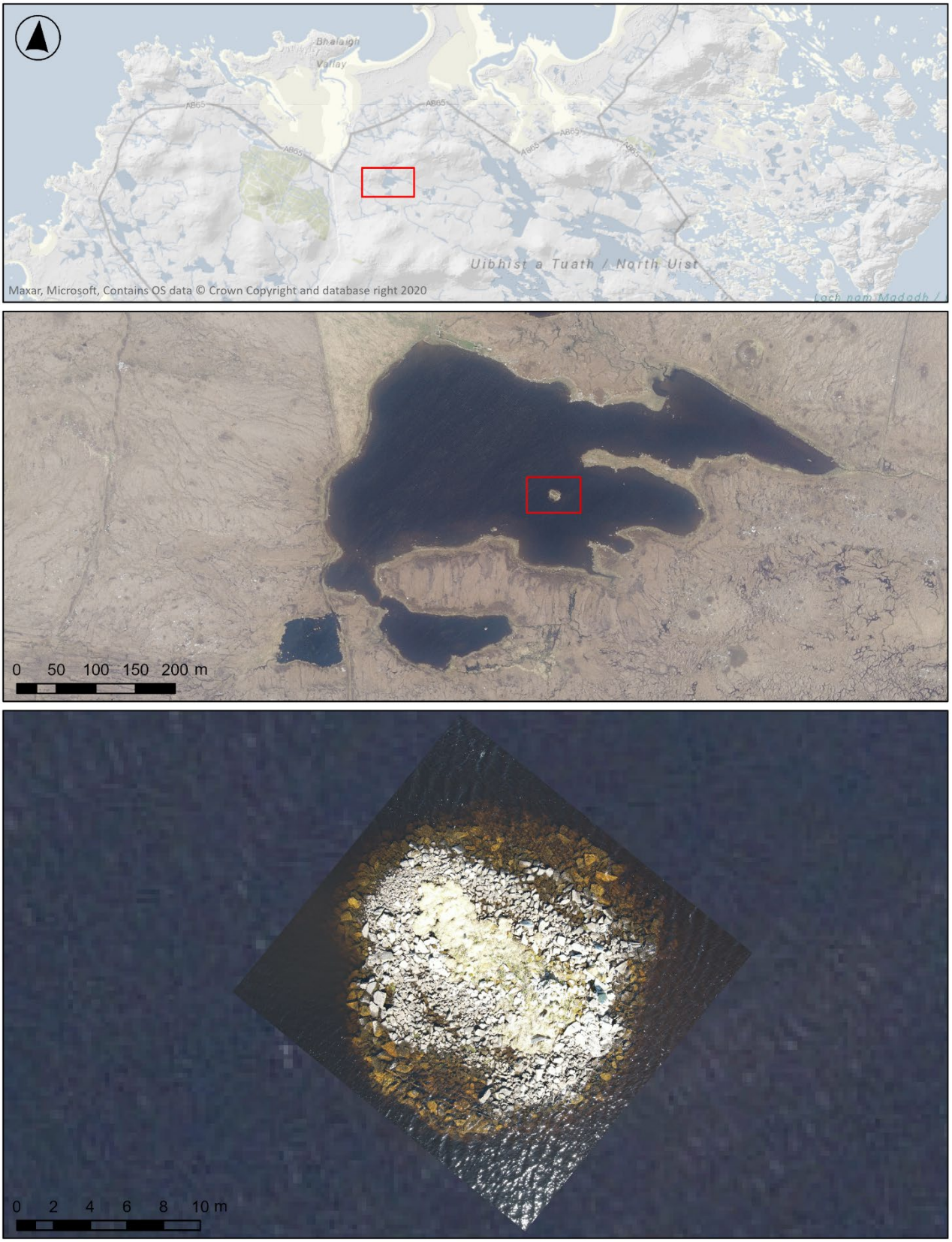


FIG 20 LOCATION OF DUN EASHADER (BOTTOM AERIAL IMAGE COURTESY OF UCAG 2021)

| | |
|---|---|
| **Site name:** | Dun Eashader (IoS 23) |
| **Loch name:** | Loch Eashader |
| **Canmore ID:** | 10375 |
| **Grid Reference:** | NF 80743 72659 |
| **Island:** | North Uist |
| **Date(s) visited:** | 06/07/22 |
| **Activities undertaken:** | Snorkel survey, drone images (from UCAG) |
| **Islet description:** | ▪ 11x16.5m diameter (extent visible above July 2022 loch level)<br>▪ < 1m height (above July 2022 loch level)<br>▪ Partially submerged artificial or substantially modified islet comprised of large stones built around natural outcrop<br>▪ Two standing stones on surface of islet |
| **Loch description:** | Islet sits on area of fairly consistent depth (> 1.5m) which shallows along a natural outcrop towards the northeast of islet. |
| **Sediment description:** | Loch bed sediments not observed due to deeper water level around site. |
| **Archaeological materials:** | No material remains were observed. |
| **Remaining questions:** | The tremendous undertaking required to create this modified island leaves more questions than answers regarding its date, construction and use. |
| **Canmore URL:** | https://canmore.org.uk/site/10375/ |

Dun Eashader is located in a rugged upland valley towards the north coast of North Uist. The loch is relatively shallow (no depth beyond c. 2m was observed in the northern portion of the loch) and remains at that depth around the islet. This made it impossible to inspect the base of the islet without SCUBA; however, given the difficult access to the site and the observed discrepancies from the predominate characteristics of Neolithic crannogs (see below), it was not deemed suitable or necessary to SCUBA dive the site.

The islet appears to be a substantially modified feature around a natural outcrop. The base of the islet is formed of large stones (larger than that which could be carried by a single person), perhaps built around a bedrock core, but rising at least 2m from the loch bed to reach the surface. The islet itself rises less than 1m above current loch levels and is topped with smaller portable stones. There are two erect stones on the island, one standing c. 1m tall and the other c. 2m tall (Fig 21). Cairns are a common feature on crannogs, but monoliths are a unique feature not observed at any other islet surveyed in Uist or Lewis (Garrow et al. 2017; Garrow and Sturt 2019).

FIG 21. TWO STANDING STONES ON DUN EASHADER VIEWED FROM THE SOUTHEAST

Beveridge (1911, 218-19) described Dun Eashader in a condition much as it exists today and noted a narrow promontory or pier jutting into the loch from the east shore that he believed to be the remains of a causeway. The promontory, which stretches nearly 150m into the loch and to within 45m of the islet, was also noted by the team. Further inspection of it revealed it to be a natural feature and no modification around it was observed. Although there are many large boulders between this promontory and the islet, perhaps part of the same outcrop or shallowing on which the islet is positioned, no submerged causeway was observed.

No materials were recovered; however, the need for SCUBA to observe the loch bed around the islet allows for the possibility that materials are present at this depth. Little can be said about the date of construction or use, but the depth of the loch around the islet, the large size of the stones that comprise it, and the lack of a causeway or any observable materials suggest a probable date outside our scope of interest (i.e. Iron Age or later).

**Oban Trumisgarry (IoS 11)**

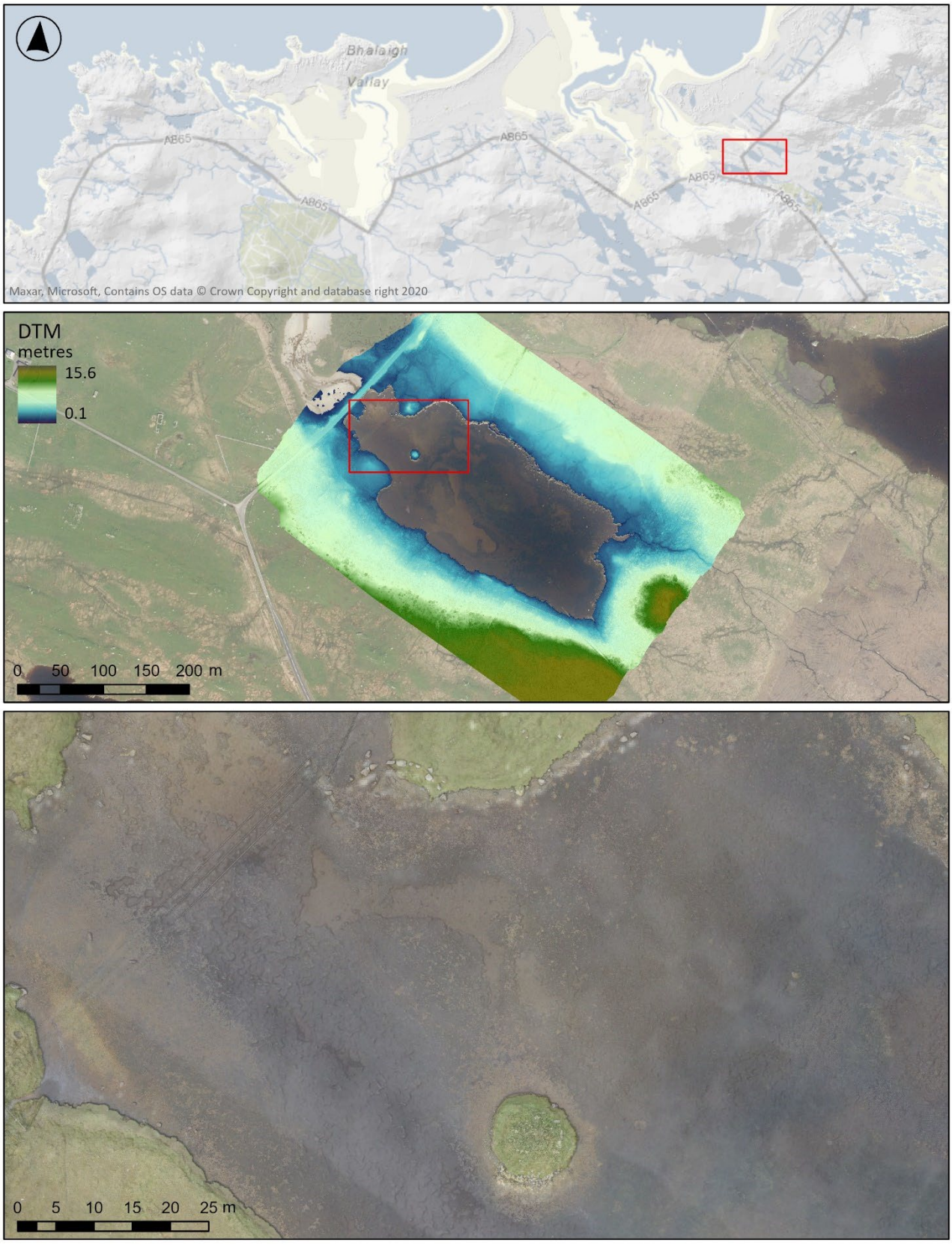


FIG 22. LOCATION OF OBAN TRUMISGARRY

| | |
|---|---|
| **Site name:** | Oban Trumisgarry (IoS 11) |
| **Loch name:** | Oban Trumisgarry |
| **Canmore ID:** | 10353 |
| **Grid Reference:** | NF 87268 74686 |
| **Island:** | North Uist |
| **Date(s) visited:** | 06/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry |
| **Islet description:** | ▪ 11.2x11.5m diameter (extent visible above July 2022 loch level)<br>▪ 2.5m height (above July 2022 loch level)<br>▪ Artificial or substantially modified islet comprised of small portable stones |
| **Loch description:** | Shallow tidal loch with heavy silting/sedimentation. |
| **Sediment description:** | Loch bed sediments around the islet could not be observed due to the intertidal nature of the site, with suspended sediments and deep alluvial deposits resulting in poor visibility around site. |
| **Archaeological materials:** | No material remains were observed. |
| **Remaining questions:** | Given that the interface between the stone and loch bed could not be observed due to water depth and no materials were found, questions remaining regarding the date, construction and use of this islet. Given its now tidal nature, further questions remain regarding the nature of loch before being breached by the sea. |
| **Canmore URL:** | https://canmore.org.uk/site/10353/ |

Oban Trumisgarry is located on the north coast of North Uist along the road to the island of Berneray. The loch has been breached by the sea and is now brackish, extremely shallow and filled with alluvium and vegetation. The islet is a circular (c. 11.5m in diameter) stone mound covered in vegetation. The stones that comprise the islet appear to be portable, and although extensive silting around the islet made underwater observations impossible, fingertip inspection suggested a perimeter of stones around the islet that are of a similar size. These stone rise 2.5m from the surface of the loch, creating a well-mounded islet. Despite our inability to observe the underwater margins, the islet does appear to be artificial. This islet was briefly described by Beveridge (1911, 225), who mentions a causeway reaching to the islet from the north shore. This causeway was not observed by the team due to zero visibility in the water but can be discerned on OS aerial imagery.

With no finds and no ability to see the structure of the islet underwater, little more can be said about the site at this time other than it is clearly an artificial or substantially modified islet. Although the loch has been heavily disturbed by its connection to the sea, it is possible that materials remain buried under alluvial deposits around the islet. The wider landscape around the loch suggests a region of prehistoric interest with two burnt mounds located to the southwest and west of the loch, the latter now in the intertidal zone. A circular stone feature was also observed on the orthometric and digital elevation models on the north shore of the loch around 8m to the west of the causeway (see Fig 23). The stone feature appears as an arc on land but also extends into the loch perhaps forming a semi-circle during lower loch levels. Beveridge also mentions this arc of stones, but it is not recorded in the NRHE/HER.

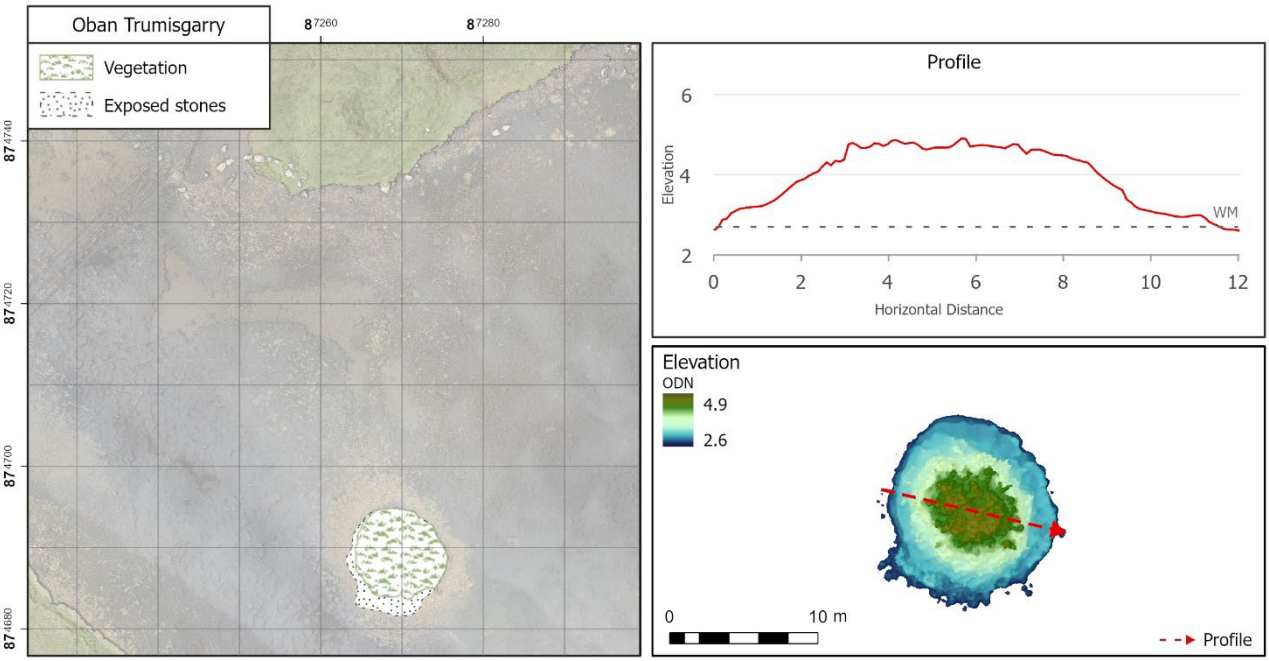


FIG 23. DIGITISED ISLAND AND ELEVATION PROFILE OF OBAN TRUMISGARRY DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

**Dunan Dubh (IoS 12)**

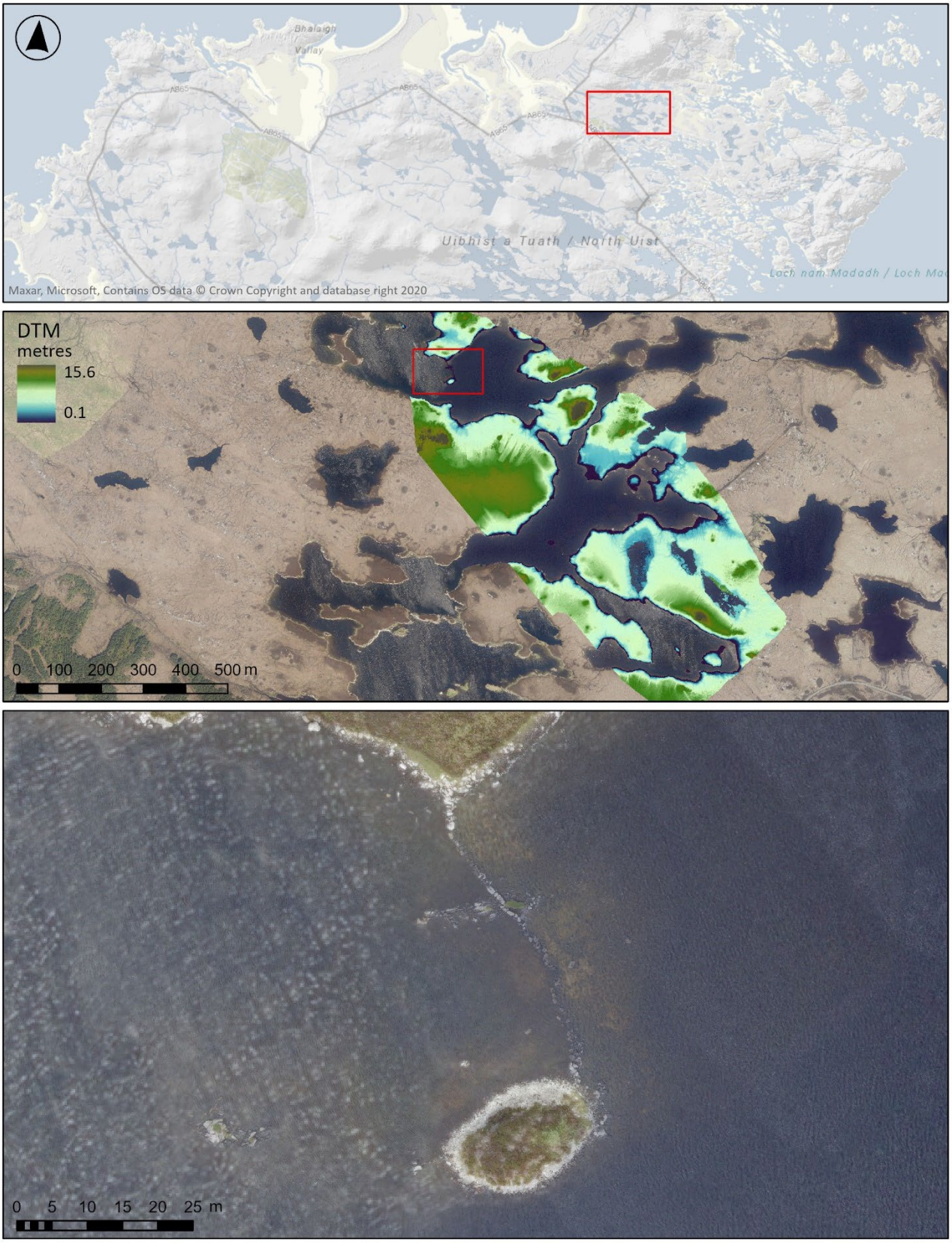


FIG 24. LOCATION OF DUNAN DUBH IN LOCH AN DUIN

| | |
|---|---|
| **Site name:** | Dunan Dubh (IoS 12) |
| **Loch name:** | Loch a' Mheribh/Loch an Duin |
| **Canmore ID:** | 10376 |
| **Grid Reference:** | NF 89083 74553 |
| **Island:** | North Uist |
| **Date(s) visited:** | 13/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry, sonar |
| **Islet description:** | ▪ 14x23m diameter (extent visible above July 2022 loch level)<br>▪ 3.5m height (above July 2022 loch level)<br>▪ Substantially modified islet comprised of large stones topped with smaller portable stones built around bedrock outcrop<br>▪ Mounded nature of islet suggests the remains of a stone structure |
| **Loch description:** | Intricate branch of Loch an Duin marked by varying depths and erratic shoreline. The loch is shallow (< 0.5m) to the north (causeway side) of the islet and deepens to the east/southeast, where heavier silting and vegetation also occurs. |
| **Sediment description:** | Gravel sands with lots of degraded stone interspersed with silty sandy sediments (predominately to the east and abutting the causeway). |
| **Archaeological materials:** | Heavily abraded pieces of pottery were recovered in the shallows to the east of the islet. Numerous quartz flakes were noted around the islet. |
| **Remaining questions:** | Although the site appears most likely to be Iron Age or later, no materials sufficient enough to date the islet were recovered. Further, questions were raised regarding the potential level of preservation of the likely structure (dun) on its surface. |
| **Canmore URL:** | https://canmore.org.uk/site/10376/ |

Dunan Dubh is located in the northwesternmost arm of Loch an Duin, a large and intricately shaped loch that resides to the northeast of North Uist. Given the shallow (< 1m deep), narrow (c. 9m wide) channel that connects this portion of the loch to Loch an Duin, this branch is also referred to by its own name, Loch a' Mheirbh. Loch an Duin is brackish, connecting to Loch Maddy through a small channel to the far southeast of the loch, but given the distance of Loch a' Mheirbh from this connection to the sea (c. 1.1km as the crow flies or c. 2.5km through the loch), this branch of Loch an Duin is less affected by the tides.

The islet is connected to the shore by a narrow winding causeway around 43m in length, which makes use of a natural bedrock outcrop sitting halfway between the shore and the islet. The causeway approaches the islet from the north but instead curves and connects to the islet on its northeast side. In some places it is only a single stone thick. The islet appears to be located on a natural shallowing in the loch and several natural outcrops were noted along the east south and west perimeters of the islet. Larger boulders were observed underwater, especially to the south, and smaller portable stones comprise its surface. The islet is well mounded, rising around 3.5m out of the loch.

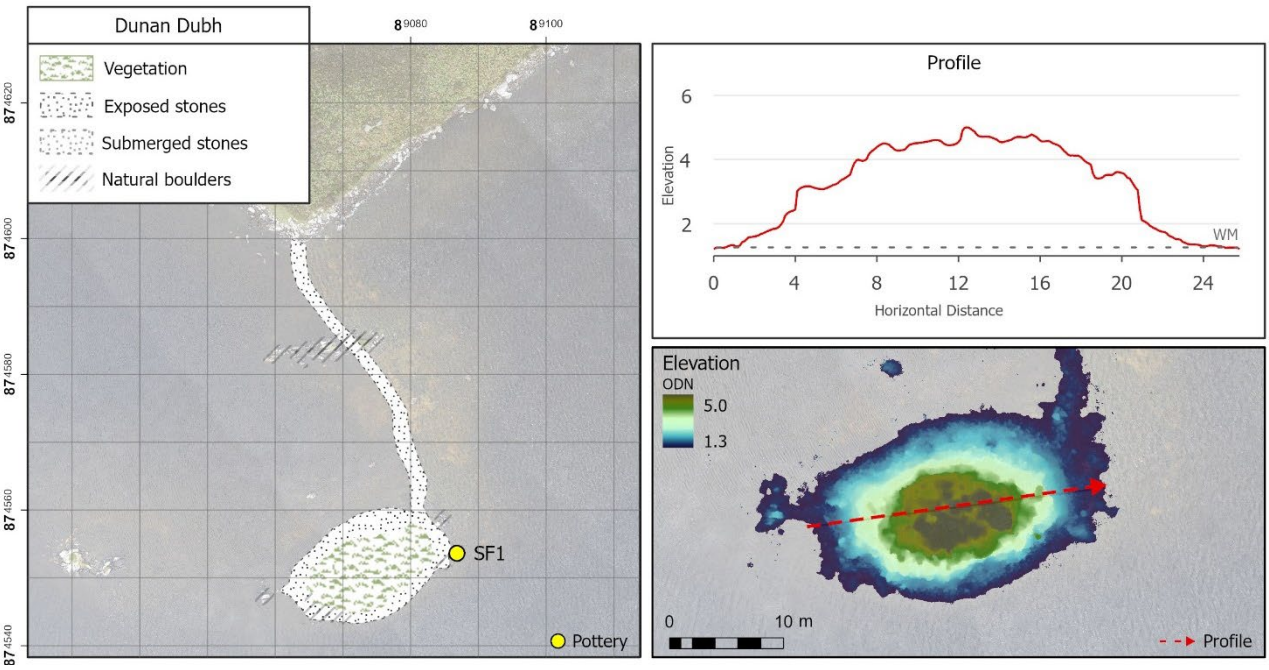


FIG 25. DIGITISED ISLAND AND ELEVATION PROFILE OF DUNAN DUBH DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

The water around Dunan Dubh is shallow to the north (< 1m) and grows deeper to the south and east (> 1.5m). According to a survey by Murray and Pullar in 1904, the loch deepens considerably beyond this point – only around 30m to the southeast of the islet the loch reaches a depth of c. 18m. The deeper portions around the islet are filled with weed and are more heavily silted than to the north and west of the islet. However, good visibility elsewhere allowed for adequate inspection of the islet's underwater margins. Loch bed sediments around the islet are a medium-grained sandy gravel filled with degraded stone and quartz and overlain by a thin layer of fine silts, predominately to the east of the islet and abutting the causeway.

A few highly abraded bits of pottery were found. Quartz is abundant on the loch bed around the site, but no clearly worked quartz was evident. Given its mounded profile, which is composed of large quantities of portable stone, it is possible that the remains of a dun or later structure still exists on the islet and is obscured by surface vegetation.

**Loch an Duin (IoS 15)**

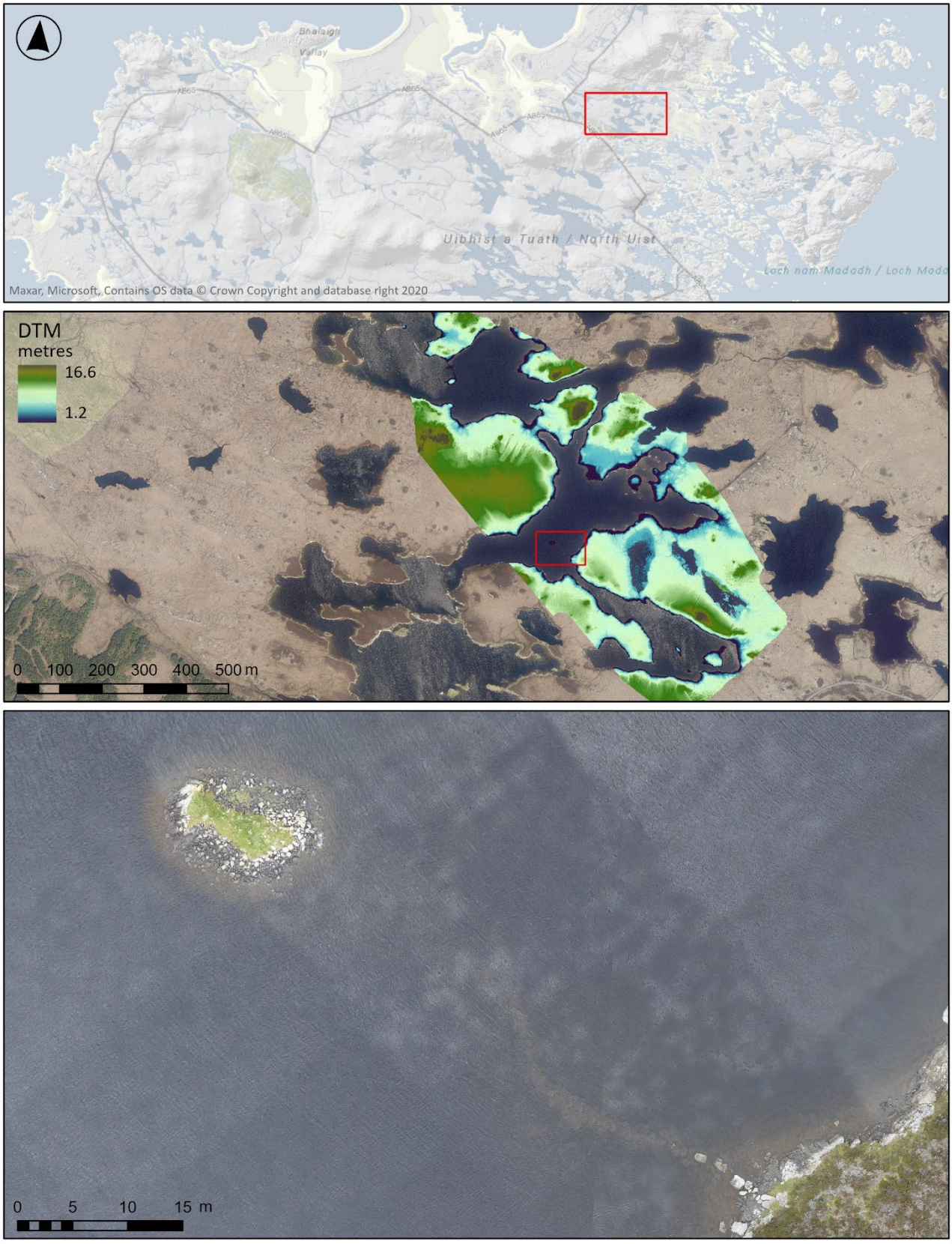


FIG 26. LOCATION OF LOCH AN DUIN

| | |
|---|---|
| **Site name:** | Loch an Duin (IoS 15) |
| **Loch name:** | Loch an Duin |
| **Canmore ID:** | 10351 |
| **Grid Reference:** | NF 89309 74168 |
| **Island:** | North Uist |
| **Date(s) visited:** | 13/07/22, 22/07/22 |
| **Activities undertaken:** | Snorkel/SCUBA survey, aerial photogrammetry, sonar |
| **Islet description:** | ▪ 14 x 9.5m diameter (extent visible above July 2022 loch level), with visible submerged stones extending c. 2m beyond exposed edge of islet<br>▪ c. 0.5m height (above July 2022 loch level)<br>▪ Partially submerged, artificial or substantially modified islet comprised of portable stones built around natural outcrop |
| **Loch description:** | Shallow tidal loch marked by varying depths and erratic shoreline. The loch deepens northwest of the islet (c. 3m) where heavier silting and vegetation also occurs and shallows to c. 1.5m to the southeast or causeway side of the islet. |
| **Sediment description:** | Deep sediment deposits were observed around the islet and gravel sands were observed to the southeast. |
| **Archaeological materials:** | Late Bronze Age/Early Iron Age pottery and degraded bone (some burnt) were recovered from the submerged stones around the islet. Fragile roundwood and/or wood fibres were also noted in this location. |
| **Remaining questions:** | Although the site appears promising, sedimentation levels prevented any further understanding of date, construction and use. |
| **Canmore URL:** | https://canmore.org.uk/site/10351/ |

Loch an Duin is centrally located in a loch of the same name, a large tidal loch with erratic shoreline which sits to the north of Loch Maddy, North Uist. Dun Torcuill, the Iron Age broch constructed on an island, is located in the same loch to the southwest of this crannog, and the sites Dunan Dubh (IoS 12) and Loch Bru (IoS 16) are also connected to this loch via shallow narrow channels. Loch an Duin is connected to the shore via a substantial causeway which stretches in an S-shaped fashion for around 50m and is in some places up to 1.5m in width and c. 1m in height. The causeway terminates at a rocky shoreline that quickly rises 2m in elevation – an unusual feature as most causeways terminate at lower-lying locations that provide easy access between the causeway and the wider landscape.

The islet is oblong in shape and partially submerged, rising less than 1m out of the water. It is built around a natural outcrop which is visible to on the westernmost extent of the islet (or the opposite side of the islet from the shore). Diver inspection around the site reveals that it is much larger than it appears on the surface, quickly dropping in depth to around 3m on the far side (or natural outcrop side) of the islet.

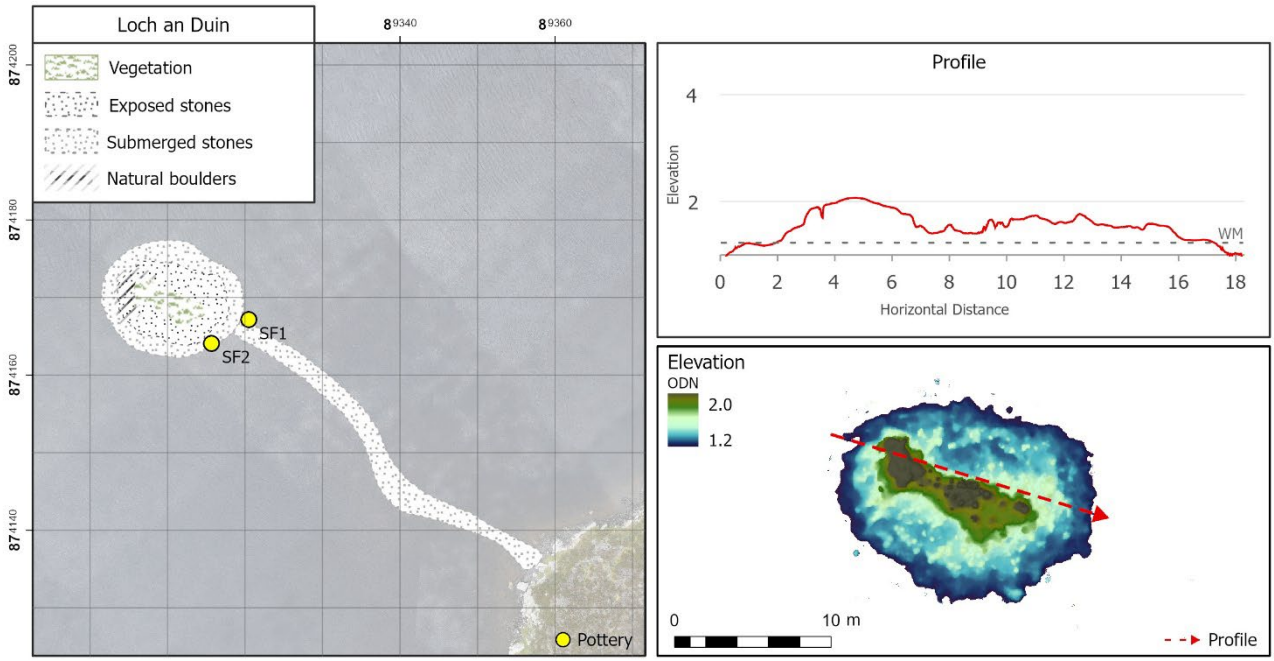


FIG 27. DIGITISED ISLAND AND ELEVATION PROFILE OF LOCH AN DUIN DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

Small pieces of abraded pottery were found amongst the submerged stones on either side of the causeway at a depth of around 30cm, and bits of bone and small pieces of wood/wood fibres were also noted. Residue from the pottery was radiocarbon dated to 740-410 cal BC. Some of the recovered bone was too burnt to be identified but one fragment was identified as a possible humerus of a sheep or goat. This bone was radiocarbon dated to 1880-1650 cal BC. Beyond this depth the stones of the islet steepen and heavy silting at this point and beyond obscured any observation of the base of the islet, although gravel sands were observed to the southeast and along the causeway.

The depth of the artificial components of the islet raises questions regarding loch levels at the time of its construction. Beveridge (1911: 152) suggested that loch levels are the same now as they were at the time of construction, but this relies on the assumption that firstly the causeway was originally built as a submerged feature and secondly it was constructed at the same time as the islet. Instead, the depth and complexity of the submerged artificial components around the islet as well as the partially submerged nature of the islet itself suggest that loch levels were substantially lower at the time of its construction. Given the connection of Loch an Duin to Loch Maddy, a sea loch, via a small channel, loch levels have likely risen in this loch since prehistory. This would explain why two branches of Loch an Duin, Loch a' Mheribh and Loch Bru, are referred to by different names. A drop of loch levels by only 1m would be enough to separate both of these adjacent bodies of water from the main loch basin. Even the bathymetrical survey conducted by Murray and Pullar in 1904 shows Loch Bru as being separate from Loch an Duin. Further, given that the causeways at Dunan Dubh and Dun Torcuill are still exposed in places, it is possible that the submerged causeway at Loch an Duin (if built at the same time as the crannog) indicates its construction at an earlier date than these other islets. This suggestion is supported by the Bronze Age dates recovered from Loch an Duin crannog compared to the Iron Age dates for Dunan Dubh and Dun Torcuill.

The Early Bronze Age bone recovered at Loch an Duin is the only Bronze Age date produced during our 2022 survey. Given that Loch Bhorgastail revealed a Middle Bronze Age phase (c. 1317 BC) overlying an earlier Neolithic phase (Blankshein et al. 2021), it is possible that a similar stratigraphic sequence exists at Loch an Duin with the earlier Neolithic materials being submerged in the thicker deposits around the islet.

**Loch Bru (IoS 16)**

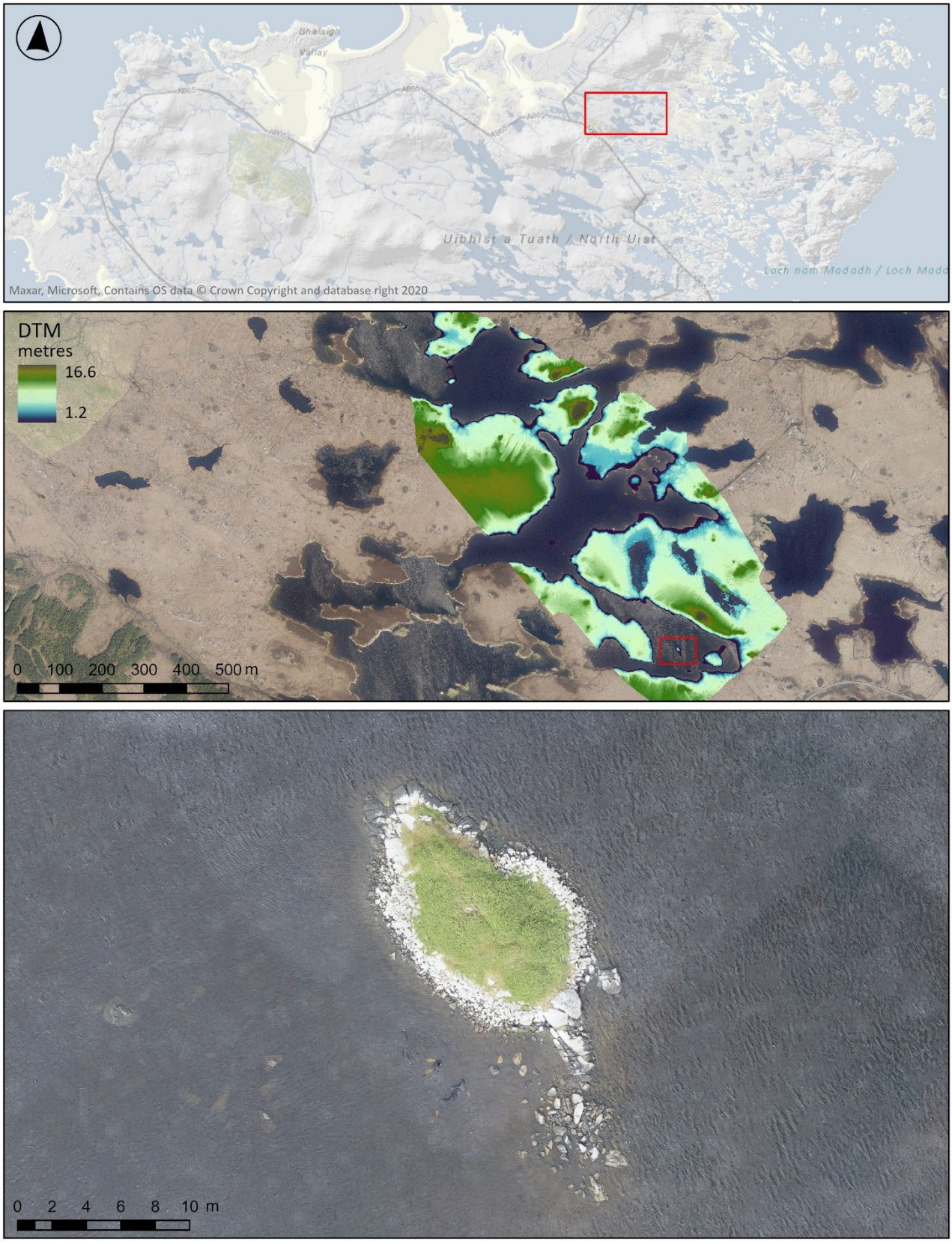


FIG 28. LOCATION OF LOCH BRU IN LOCH AN DUIN

| | |
|---|---|
| **Site name:** | Loch Bru (IoS 16) |
| **Loch name:** | Loch Bru/Loch an Duin |
| **Canmore ID:** | 10369 |
| **Grid Reference:** | NF 89618 73916 |
| **Island:** | North Uist |
| **Date(s) visited:** | 22/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry |
| **Islet description:** | ▪ 9.5x17m diameter (extent visible above July 2022 loch level)<br>▪ 3.5m height (above July 2022 loch level)<br>▪ Modified natural island<br>▪ Bedrock outcrop with some modification (portable stones) around portions of the islet |
| **Loch description:** | Shallow tidal loch in branch of Loch an Duin with heavy weed growth and some silting. Observed depth around islet is fairly consistent (c. 0.5m). |
| **Sediment description:** | Coarse-grained sandy gravel overlain by silts and interspersed with an abundance of boulders of varying size. |
| **Archaeological materials:** | No material remains were observed. |
| **Remaining questions:** | The largely natural construction of the site and absence of any materials suggest this site resides outside our scope of interest, but questions remain regarding date of activity at site. |
| **Canmore URL:** | https://canmore.org.uk/site/10369/ |

The islet resides in an eastern and weedy branch of Loch an Duin known as Loch Bru, which is connected to Loch an Duin via a narrow (14m wide) and shallow (< 40cm deep) channel. The islet appears to be a natural modification, positioned on a natural shallowing in the loch with exposed outcropping appearing in several places within and around the islet and causeway. Larger boulders are evident to the south and east of the islet where the loch bed deepens, and smaller portable stones have been placed around and on top resulting in a height of around 3.5m above current loch levels. Some modification is evident around the

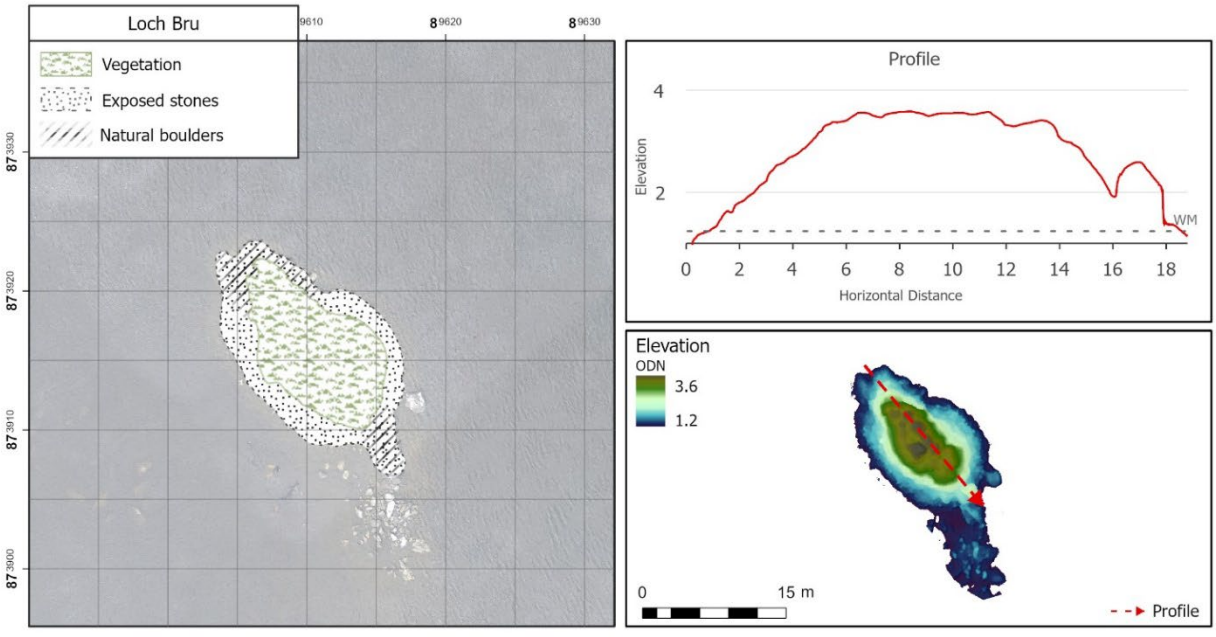


FIG 29. DIGITISED ISLAND AND ELEVATION PROFILE OF LOCH BRU DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

eastern and western margins, and there is evidence for structures built upon its surface although these are obscured by vegetation.

The islet is heavily obscured by weed growth underwater, but the shallow nature of the loch around the islet (< 1m depth) and good underwater visibility allowed for an adequate inspection of its underwater margins. Loch bed sediments around the islet are a coarse-grained sandy gravel overlain by a thin layer of fine silts. The bedrock outcrop which comprises the islet is clear and natural boulders and stones of various sizes are abundant around the site (Fig 30). Although Beveridge (1911, 153) mentions a 'ruinous causeway' extending from an outer rampart to the southeast of the islet, no causeway was observed and even the 'outer rampart' appears to be a natural scatter of stones.

No materials were recovered from the site, and the shallow loch levels and thin sediment layers make it unlikely that any substantial deposits were missed during inspection; however, given the substantial vegetation growth and stone scatter, it is possible that smaller, isolated material remains were obscured. The nature of the islet (clear lack of artificiality) suggests a site outside our scope of interest, although the date of construction and use of the structure on the island and the modifications around it remain unknown.

FIG 30. HEAVY VEGETATION COVER AND NUMEROUS STONES ON LOCH BED AROUND LOCH BRU ISLAND

**Clachan (IoS 51)**

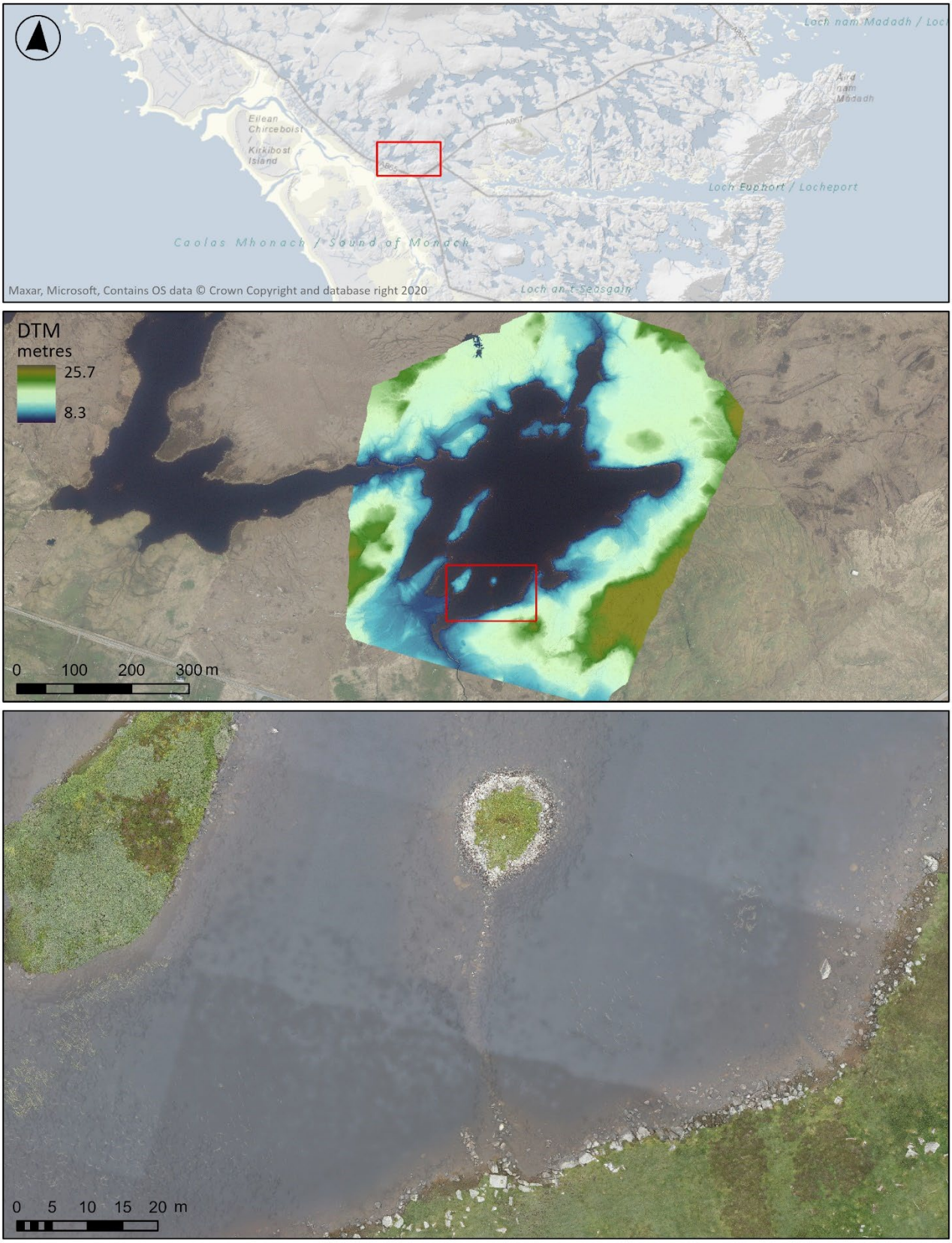


FIG 31. LOCATION OF CLACHAN

| | |
|---|---|
| **Site name:** | Clachan (IoS 51) |
| **Loch name:** | Loch nan Struban |
| **Canmore ID:** | 10256 |
| **Grid Reference:** | NF 80750 64513 |
| **Island:** | North Uist |
| **Date(s) visited:** | 04/07/22, 16/07/22, 22/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry |
| **Islet description:** | ▪ 14x17.5m diameter (extent visible above July 2022 loch level)<br>▪ 2m height (above July 2022 loch level)<br>▪ Artificial islet comprised of portable stones located on a shallowing within loch |
| **Loch description:** | Shallow loch (no depth greater than 1.5m was observed), with depth of c. 1m around islet. Some silting and vegetation to east of islet. |
| **Sediment description:** | Stones bedded in coarse-grained sediment overlain in places by very fine-grained material. |
| **Archaeological materials:** | No finds were recovered. Quartz flakes were noted in the shallows around the islet. |
| **Remaining questions:** | Although the site appears promising, the absence of materials at this clearly artificial islet leaves more questions than answers as to its date, construction and use. |
| **Canmore URL:** | https://canmore.org.uk/site/10256/ |

Clachan is located in Loch nan Struban towards the southwest coast of North Uist around 500m north of the junction that leads south towards Benbecula. The islet is located to the southwest of the loch and is connected to the shore via a 38m causeway. The loch appears relatively shallow and around the islet it reaches a depth of around 1m, deepening to around 1.5m to the east of the islet. Good underwater visibility and the shallow natural of the loch around the islet allowed for adequate inspection of the base of the islet as well as surrounding loch bed deposits.

The islet is oblong, roughly 14 x 17.5m, and rises c. 2m above the loch surface. It is positioned on a shallowing in the loch and is comprised of coarse-grained sediments that are in some places, especially to the east, overlain by very fine-grained materials. The islet is composed of portable stones; some larger stones were noted in the matrix, but no bedrock was observed, suggesting the islet to be entirely artificial. The gradual deepening of the loch to the east of the islet and where the fine-grained sediments occur was obscured by weed growth and the loch bed to the north and west of the site contains a scatter of large boulders and cobbles that is a continuation of the shallowing on which the islet is located.

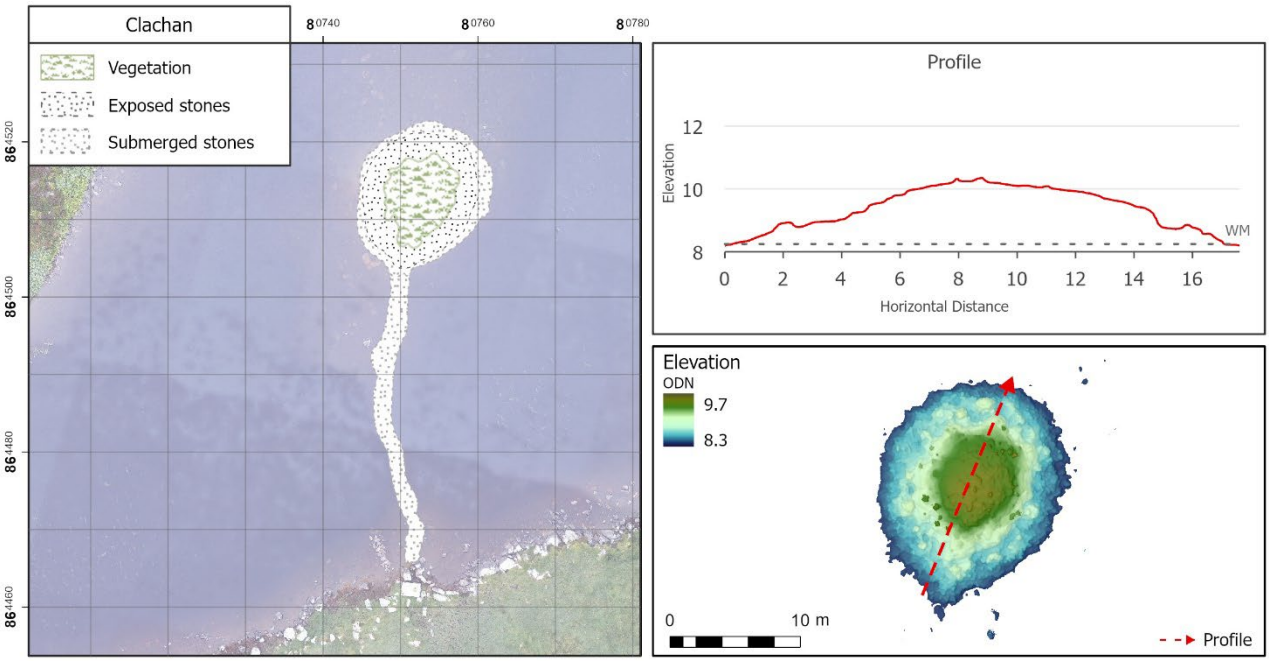


FIG 32. DIGITISED ISLAND AND ELEVATION PROFILE OF CLACHAN DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

Some quartz flakes were noted around the site but no pottery was found. The consolidated nature of sediments around the islet (with the exception of the deeper deposits to the east) and the thorough snorkel inspection undertaken (aided by good underwater visibility) make it unlikely that substantial quantities of material exist at the site. This is somewhat perplexing as the islet is clearly artificial and presents many of the characteristic features of Neolithic crannogs. Other than the possibly worked quartz (which is not clearly diagnostic), no materials of any period (even modern) were observed. With no materials or organics observed, little can be said about the date of construction and use, although the overall characteristics of the islet and its clear artificiality make it a promising site that would require underwater coring or test pitting to further investigate.

**Loch Carabhat (IoS 69)**

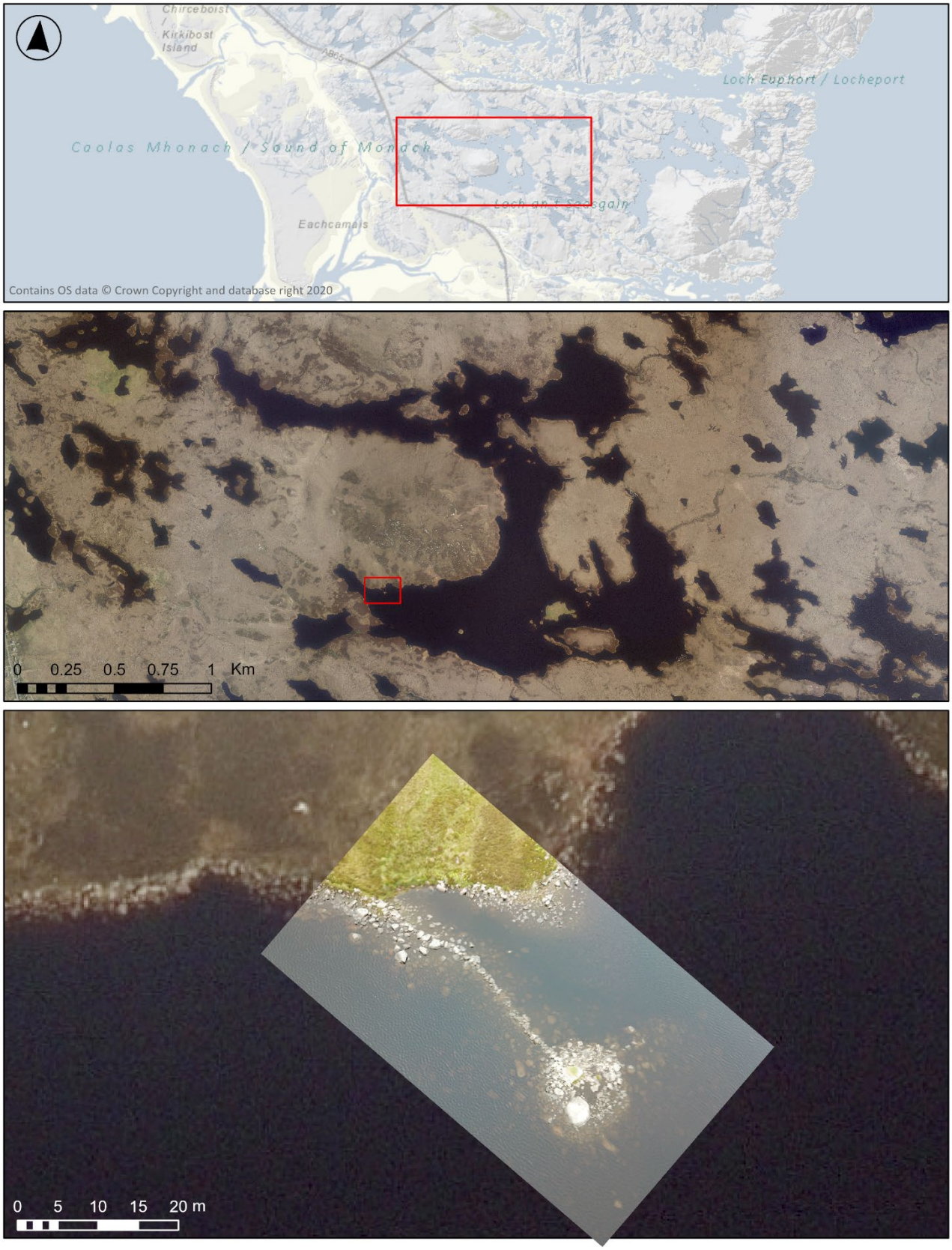


FIG 33. LOCATION OF LOCH CARABHAT

| | |
|---|---|
| **Site name:** | Loch Carabhat (IoS 69) |
| **Loch name:** | Loch Carabhat |
| **Canmore ID:** | 278048 |
| **Grid Reference:** | NF 83905 61081 |
| **Island:** | North Uist |
| **Date(s) visited:** | 12/07/22 |
| **Activities undertaken:** | Snorkel survey, drone imagery |
| **Islet description:** | ▪ 9x11.5m diameter (extent visible above July 2022 loch level)<br>▪ < 1m height (above July 2022 loch level)<br>▪ Mostly submerged, substantially modified islet comprised of large stones built around bedrock outcrop |
| **Loch description:** | Large loch of varying depths (< 74m). Islet sits in a shallower area (c. 2.5m) of loch. Some vegetation to the east of the islet. |
| **Sediment description:** | Coarse-grained sands and grits around islet with fine-grained sediments building up against the causeway. |
| **Archaeological materials:** | No material remains were observed. |
| **Remaining questions:** | With no materials/organics recovered, the tremendous undertaking required to create this modified island leaves more questions than answers regarding its date, construction and use. |
| **Canmore URL:** | https://canmore.org.uk/site/278048/ |

This islet is located in Loch Carabhat, which sits just to the north of the North Ford Causeway, which connects North Uist to Benbecula. The loch can be accessed by following the Hebridean Way walking trail where it diverges from the main road towards the Neolithic chambered tomb of Caravat Barp. The loch is large and irregularly shaped, being divided nearly in two by the rugged landform, Beinn na Coille. The southern portion of this loch is much deeper than all others visited during our July 2022 survey. According to a bathymetric survey by Murray and Pullar (1904), the loch reaches depths of up to 74m at its southeast extent. Depths greater than 10m were observed by the team on approaching the islet from the south, and around the islet itself the loch remains relatively deep (c. 3m), dropping off quickly to even deeper depths. The depths around the islet prevented good observation of the interface between islet and loch bed as well as the deposits around it. However, the islet clearly resides on a natural outcrop and is comprised of very large boulders underwater. On the surface some modification in the form of smaller portable stones is evident, but the islet is now largely submerged and rises less than 50cm out of the water. Around the causeway, which is connected to the shore at the southern slopes of Beinn na Coille, finer sediments overlying coarse-grained sands and grits were observed.

The depth of the loch around the site necessitates scuba gear for further inspection, but given the remoteness of the site, the largely natural nature of the islet and the fact that no finds were observed, this was not deemed feasible or necessary. Although the snorkel survey was limited, the team are confident the islet has been reasonably well characterised.

**Loch an Fhaing (IoS 81)**


FIG 34. LOCATION OF LOCH AN FHAING

| | |
|---|---|
| **Site name:** | Loch an Fhaing (IoS 81) |
| **Loch name:** | Loch an Fhaing |
| **Canmore ID:** | 10191 |
| **Grid Reference:** | NF 84500 57570 |
| **Island:** | North Uist |
| **Date(s) visited:** | 04/07/22 |
| **Activities undertaken:** | Snorkel survey |
| **Islet description:** | ▪ 11x16m diameter (extent visible above July 2022 loch level)<br>▪ c. 1m height (above July 2022 loch level)<br>▪ Natural islet with some evidence for modification/activity<br>▪ Connected to a second smaller islet (6x8.5m) to the east through a shallowing with heavy weed growth |
| **Loch description:** | Shallow (less than 1m deep), weed-filled loch with some silting. |
| **Sediment description:** | Coarse grained sediment (sands and grit), some weed. |
| **Archaeological materials:** | No material remains were observed. |
| **Remaining questions:** | The largely natural nature of this islet and absence of any materials suggest this site resides outside our scope of interest, but questions remain regarding the date of activity on/around islet. |
| **Canmore URL:** | https://canmore.org.uk/site/10191/ |

Loch an Fhaing is located on the northwest extent of the island of Grimsay and sits less than 10m from the North Ford Causeway. The loch contains three islets, one of which is an NRHE site (Fig 35). This islet is located to the southeast of this shallow, weedy loch. No depth greater than 1m was observed and the loch shallows to within 50cm around the islet. The recorded islet appears largely natural with scant evidence for structures or other activity on the surface. No modifications were noted underwater. The NRHE islet is connected to a second smaller but also natural island to its east through a shallowing (< 30 cm) in the loch bed, which is composed of finer sediments and grit. This shallowing is filled with weed, forming the appearance of a single oblong island that is in fact two. A small islet to the northeast was also inspected and found to be natural (see Fig 35). The shore to the east of this island shows some modification that suggests the beginning of a causeway; however, no causeway was detected underwater.

FIG 35. NRHE ISLAND IN LOCH AN FHAING (BACKGROUND) AND SMALL NATURAL UNRECORDED ISLET (FOREGROUND) VIEWED FROM WESTERN SHORE (WITH THE A865 SKYLINED ON THE HORIZON)

Overall, no archaeological materials were found in Loch an Fhaing, and even the presence of a dun on the recorded island, as suggested by the RCAHMS in 1915, is questionable.

**Gunisary Bay (IoS 100)**

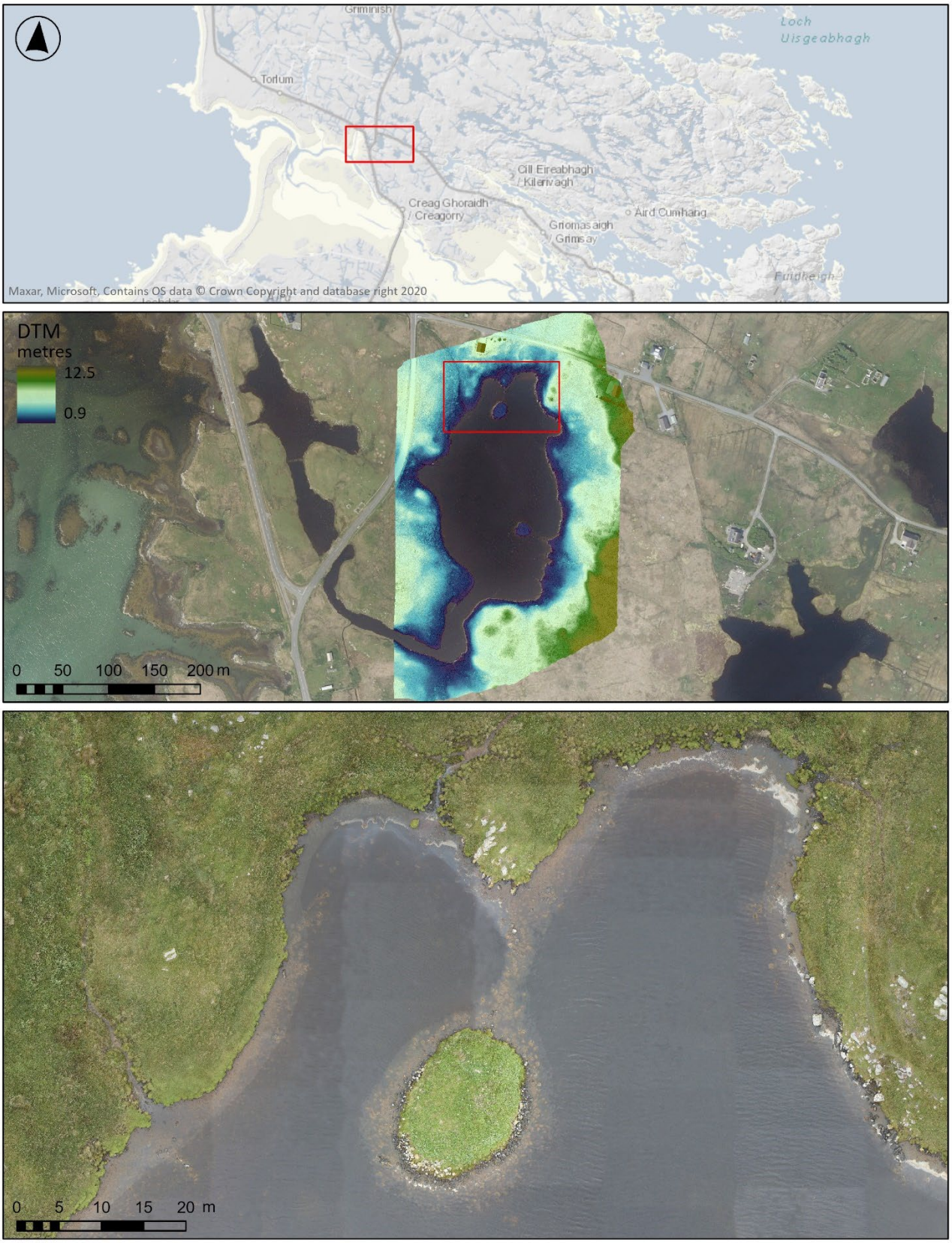


FIG 36. LOCATION OF GUNISARY BAY

| | |
|---|---|
| **Site name:** | Gunisary Bay (IoS 100) |
| **Loch name:** | Gunisary Bay |
| **Canmore ID:** | 9922 |
| **Grid Reference:** | NF 79853 49167 |
| **Island:** | Benbecula |
| **Date(s) visited:** | 11/07/22 |
| **Activities undertaken:** | Snorkel survey |
| **Islet description:** | ▪ 14.5x18m diameter (extent visible above July 2022 loch level)<br>▪ c. 1m height (above July 2022 loch level)<br>▪ Artificial or substantially modified islet comprised of small portable stones |
| **Loch description:** | Brackish, peat-stained loch filled with alluvial deposits. Shallow loch with consistent depth around islet (< 0.5m) but limited visibility. |
| **Sediment description:** | Islet sits in alluvial sediments and in area of considerable weed growth. Silting and peat-stained water limited visibility of stone/loch bed interface, although site appeared entirely artificial. |
| **Archaeological materials:** | No material remains were observed. |
| **Remaining questions:** | Although the site appears promising, sedimentation levels prevented any further understanding of date, construction and use. |
| **Canmore URL:** | https://canmore.org.uk/site/9922/ |

This islet is located in a boggy region around 300m from the south coast of Benbecula. The loch is more dynamic than it initially appears, being connected via a long winding channel to a parallel loch and from there to the sea. The loch is thus slightly brackish and has experienced substantial silting. This, in addition to the peat-stained nature of the loch, ensured that underwater visibility was limited.

The islet is connected to the north shore via a short 12m causeway. It is oblong (roughly 14.5 x 18m) and rises about 1m above current loch levels. The islet is comprised of portable stones and the surface is covered with vegetation. Although heavy silting, vegetation and the peat-stained nature of the water prevented further observation of the islet underwater, fingertip inspection suggested the underwater perimeter to also be comprised of portable stones. The islet thus appears to be artificial or substantially modified. A second island in this loch was identified in the machine learning results (ML2), appearing almost identical to the recorded island on aerial imagery. This islet was also inspected (see Site ML2 below) but was found to be natural.

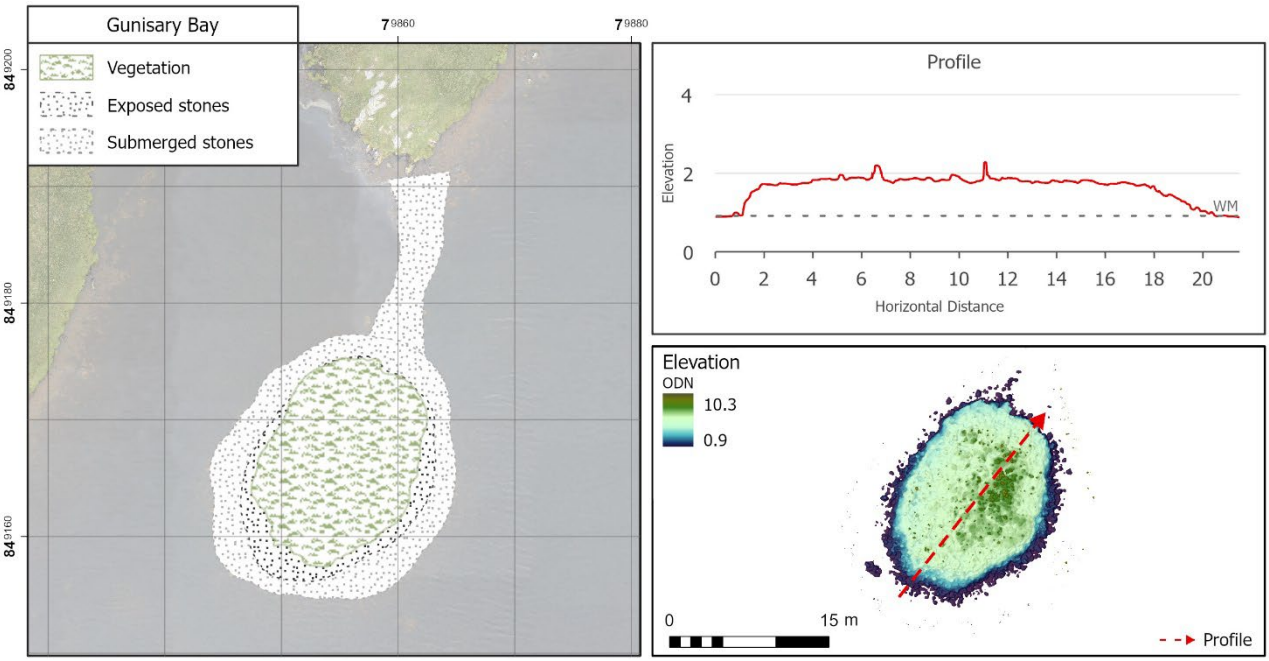


FIG 37. DIGITISED ISLAND AND ELEVATION PROFILE OF GUNISARY BAY DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

No materials were recovered, although the depth of silting and limited underwater visibility perpetuates the possibility of their existence. Little else can be said about the islet itself, but the heavy infrastructure around the loch along with its brackish and heavily sedimented waters suggest substantial changes to the loch since prehistory. Further understanding of this islet, loch and the landscape around it would benefit from environmental work.

**Loch an Daill (IoS 105)**

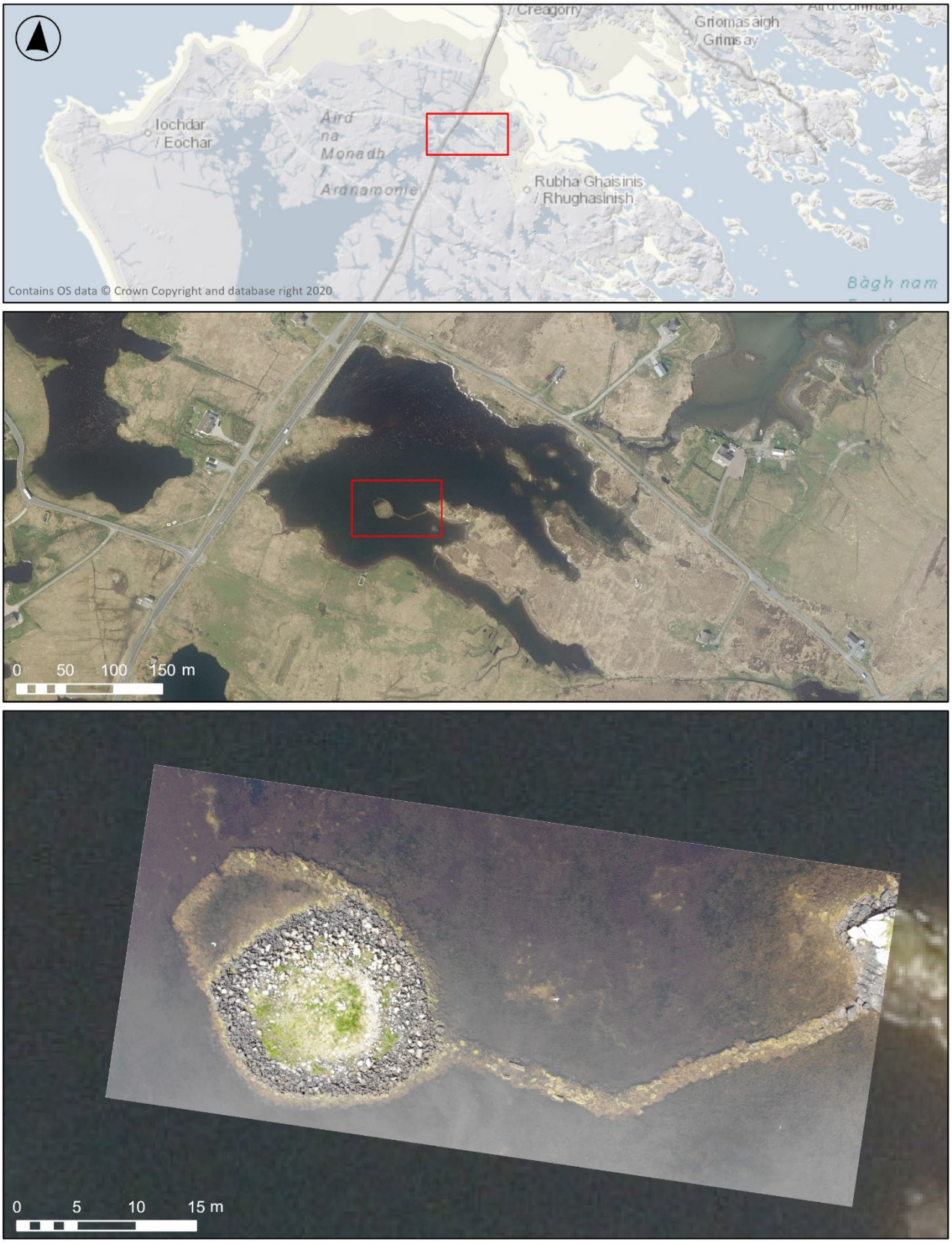


FIG 38. LOCATION OF LOCH AN DAILL (BOTTOM AERIAL IMAGE COURTESY OF UCAG 2021)

| | |
|---|---|
| **Site name:** | Loch an Daill (IoS 105) |
| **Loch name:** | Loch an Daill |
| **Canmore ID:** | 9921 |
| **Grid Reference:** | NF 79689 45921 |
| **Island:** | South Uist |
| **Date(s) visited:** | 26/07/22 |
| **Activities undertaken:** | Snorkel survey |
| **Islet description:** | ▪ 19x19m diameter (extent visible above July 2022 loch level), with 'harbour' extension to the northwest<br>▪ < 1m height (above July 2022 loch level)<br>▪ Artificial islet comprised of small portable stones |
| **Loch description:** | Brackish shallow loch with heavy sedimentation/vegetation due to its connection to the South Ford/Minch. Loch is shallow with consistent depth around islet (< 0.5m) but limited visibility. |
| **Sediment description:** | Islet is heavily silted and in area of considerable weed growth. Silting and vegetation limited visibility of stone/loch bed interface, although site appears entirely artificial. |
| **Archaeological materials:** | Much modern rubbish was noted around the islet but no material remains of interest were observed. |
| **Remaining questions:** | Although the site appears promising, silting and modern activity prevented any further understanding of date, construction and use. |
| **Canmore URL:** | https://canmore.org.uk/site/9921/ |

Loch an Daill is located on the north coast of South Uist and is connected to the sea via a small channel along its northeast shore. The loch is thus brackish, heavily silted and filled with vegetation, which obscured underwater visibility. The islet is located towards the centre of the loch and is connected to a long peninsula emerging from the east shore via a distinctive two-part linear causeway. Although the base of the structure and interface with the loch bed could not be observed, the islet appears to be wholly artificial or substantially modified, comprised of portable stones. An outer wall or harbour sits to the northwest of the islet, which is also visible on aerial imagery.

Although no materials of interest were found around the islet, a high quantity of modern rubbish was observed (e.g. glass bottles, jars, a shoe). With limited visibility and high sedimentation rates, the possibility remains open for the presence of prehistoric materials that are obscured by sediment and vegetation. Further, the connection of this loch to the South Ford suggests substantial changes to the loch since prehistory, necessitating environmental work to determine its prehistoric nature.

**Tobha Bheag (IoS 115), (IoS 116)**

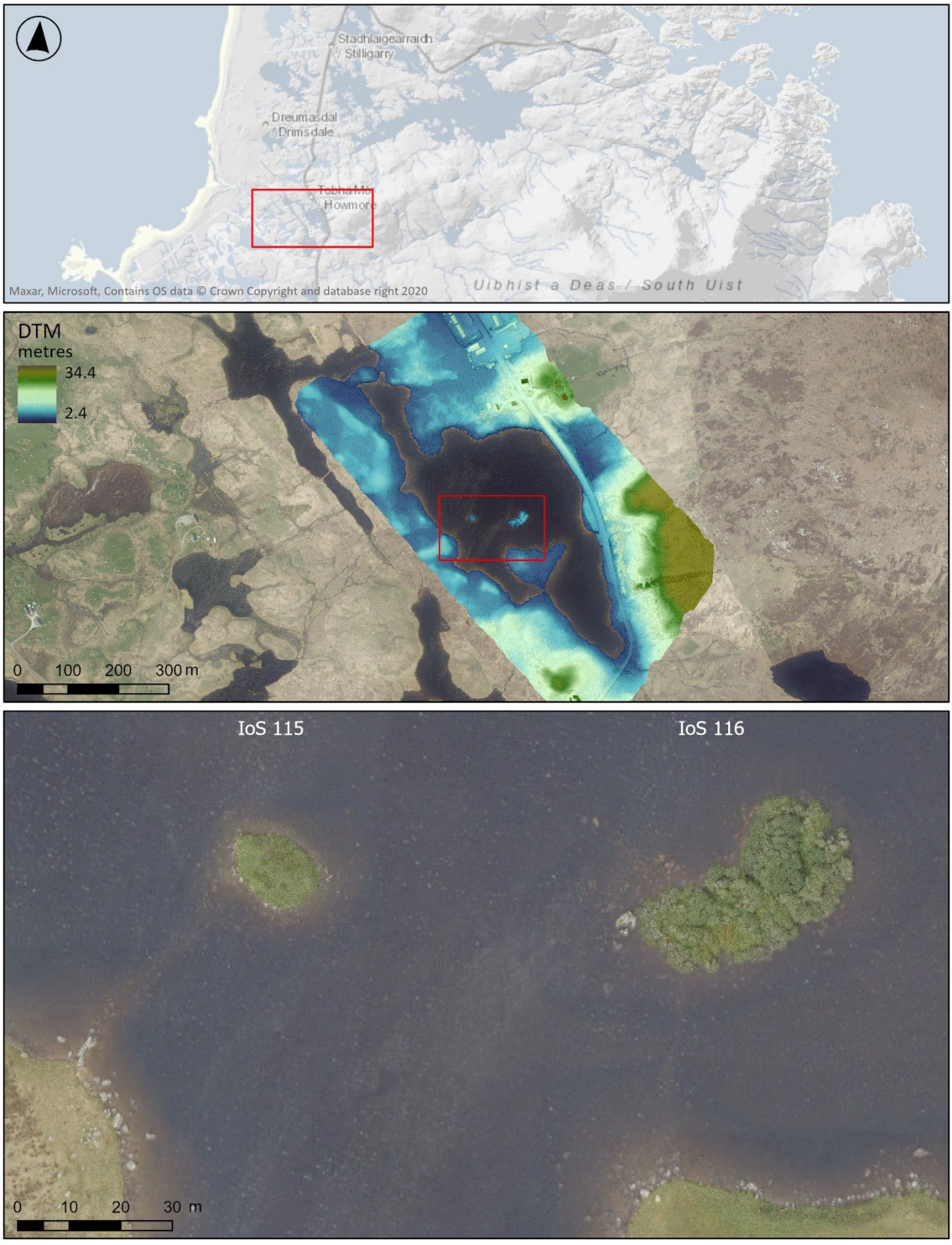


FIG 39. LOCATION OF TWO ISLANDS IN LOCH A' PHUIRT-RUAIDH

| | |
|---|---|
| **Site name:** | Tobha Bheag (IoS 115) |
| **Loch name:** | Loch a' Phuirt-ruaidh |
| **Canmore ID:** | 270754 |
| **Grid Reference:** | NF 76707 35686 |
| **Island:** | South Uist |
| **Date(s) visited:** | 09/07/22, 26/07/22 |
| **Activities undertaken:** | Snorkel/diver survey, aerial photogrammetry, LiDAR survey, sonar |
| **Islet description:** | ▪ 13x19m diameter (extent visible above July 2022 loch level)<br>▪ 2m height (above July 2022 loch level)<br>▪ Artificial islet comprised of small portable stones |
| **Loch description:** | Shallow loch with consistent depth around islet (< 0.5m) but increasing in depth and vegetation to south and east (sonar?). |
| **Sediment description:** | Fine-grained silts giving way to coarse-grained sands and grits. |
| **Archaeological materials:** | Cannel coal bracelet (fragment) and small amounts of heavily abraded Iron Age pottery found amongst shallow stones around islet. A single ambiguous sherd with an impressed or incised line found around 8m east of islet. |
| **Remaining questions:** | Although the site appears promising, heavy sedimentation prevented any further understanding of date, construction and use. |
| **Canmore URL:** | https://canmore.org.uk/site/270754/ |

| | |
|---|---|
| **Site name:** | Tobha Bheag [Eilean an t-Sagairt] (IoS 116) |
| **Loch name:** | Loch a' Phuirt-ruaidh |
| **Canmore ID:** | 270753 |
| **Grid Reference** | NF 76800 35677 |
| **Island** | South Uist |
| **Date(s) visited:** | 09/07/22, 26/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry, LiDAR survey, sonar |
| **Islet description:** | ▪ 20x40m diameter (extent visible above July 2022 loch level)<br>▪ 4m height (above July 2022 loch level)<br>▪ Natural island with minor modifications and dense vegetation |
| **Loch description:** | Shallow loch with consistent depth around islet (c. 1m) but increasing in depth and vegetation to south. |
| **Sediment description:** | Fine-grained silts giving way to coarse-grained sands and grits. |
| **Archaeological materials:** | Large fragments of undecorated Neolithic pottery were recovered from the shallows to the north of the islet. |
| **Remaining questions:** | This site is largely natural making the presence of Neolithic pottery highly interesting and raising questions regarding the relationship between the artificial islet (IoS 115), which produced some pottery, and this natural island. |
| **Canmore URL:** | https://canmore.org.uk/site/270754/ |

Loch a' Phuirt-ruaidh is located at the foothills of the rugged mountain massif landforms that form the east coast of South Uist. The loch is known locally as Loch an t-Sagairt, or Priest's Loch (Raven 2005: 50). The

southern half of the loch is fairly shallow and filled with vegetation. The smaller islet (IoS 115) is oblong (c. 13 x 19m) and is connected to the west shore via a c. 40m causeway. The loch is shallow around the islet (c. 50cm) and remains at this depth up to 2m from the islet's margin but deepens to around 1.5m at a distance of c. 5m from the islet (Fig 40). Vegetation growth where the loch deepens, especially to the south and east of the islet, prevented further observations in that area. The loch bed around the islet is comprised of fine-grained sediments, which give way to course-grained sands and grit, and is scattered with cobbles. The islet is composed of portable stones positioned on a shallowing within the loch and appears to be entirely artificial. The surface of the islet rises c. 2m above the loch bed and is covered in a low vegetation. The morphology of the loch has been altered along its eastern shore, with a causeway constructed to carry a road creating a new hard edge.

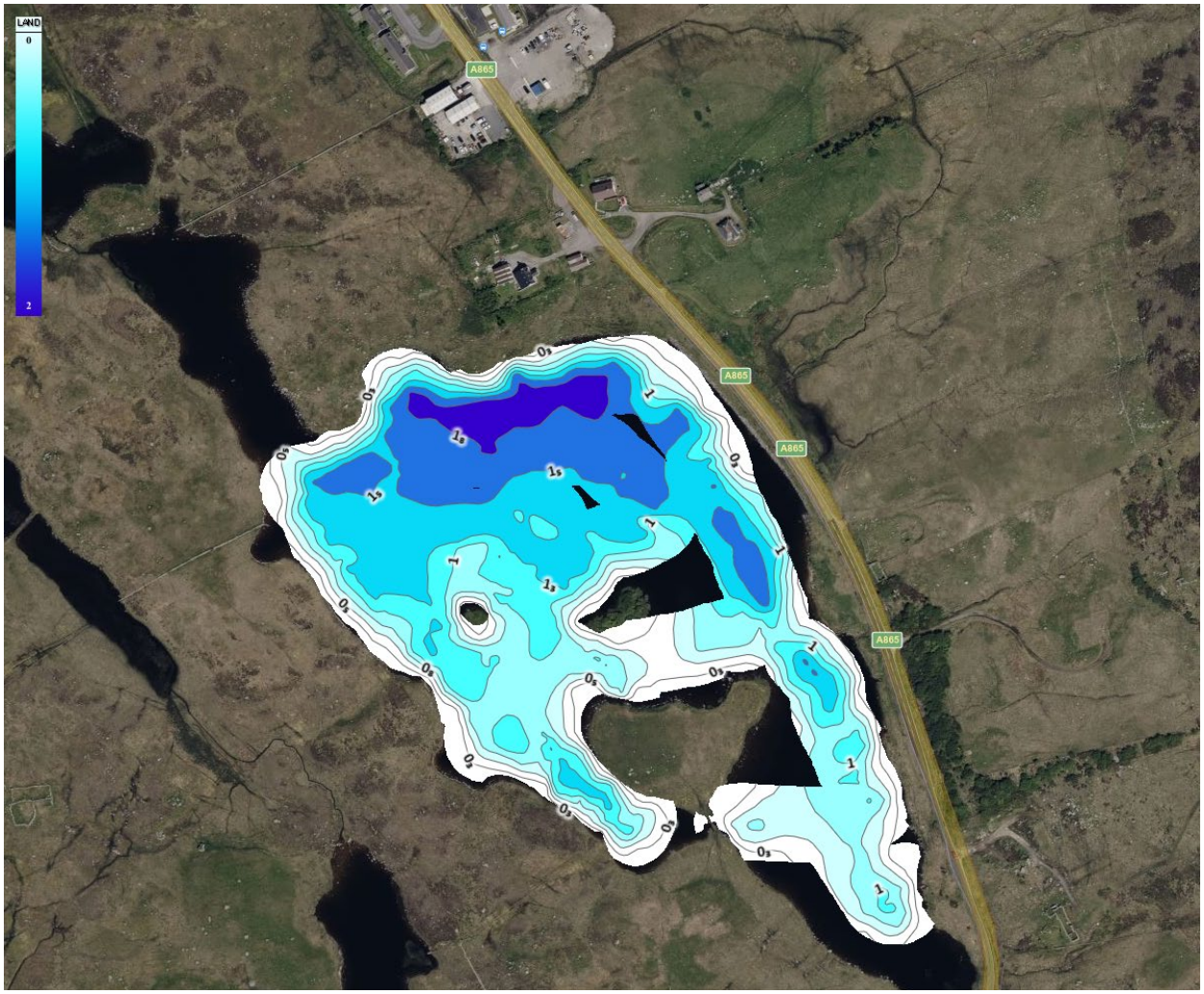


FIG 40. DEPTHS OF LOCH A' PHUIRT-RUAIDH

Small pieces of abraded Iron Age pottery were found amongst the shallows around the islet, and a far less abraded sherd with a single impressed or incised line was found within thicker sediments c. 10m to the east of the islet's margin. Charred residue from one sherd was radiocarbon dated to 370-200 cal BC. In addition, a fragment of a black (probably cannel coal) bracelet was found within the shallows along with the Iron Age pottery. Such finds are rare in the Outer Hebrides but have been found at a few predominately Early-Middle Iron Age sites (see Section 6: Worked stone). However, numerous similar bracelet/armlet fragments have been recovered from crannogs on the Scottish mainland; several pieces of lignite or cannel coal were found during excavation of Lochspouts crannog (Munro 1882, 174), a fragment of a shale or cannel coal bracelet was found during excavation of Cult's Loch (Crone and Cavers 2008, 52), and an intact ring of cannel coal was recovered during excavation of the crannog at Barhapple Loch (Munro 1882, 186). The materials and date recovered from Tobha Bheag suggest Early Iron Age activity at this site.

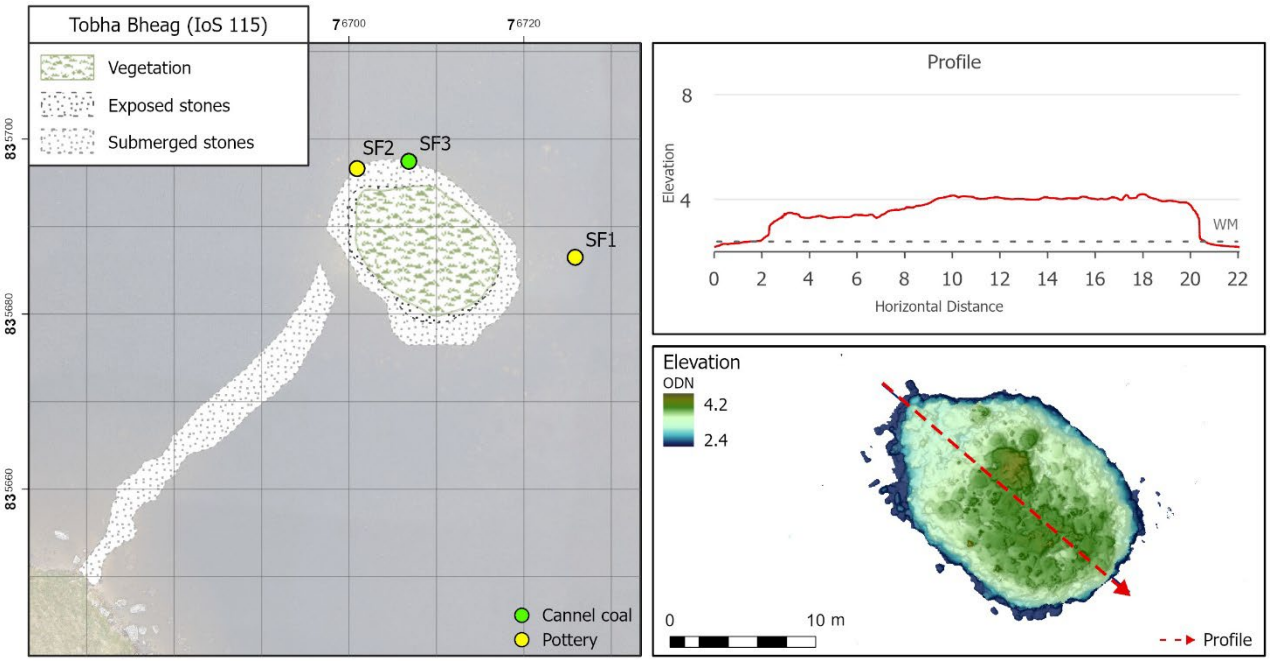


FIG 41. DIGITISED ISLAND (WITH LOCATION OF FINDS) AND ELEVATION PROFILE OF TOBHA BHEAG (IOS 115) DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

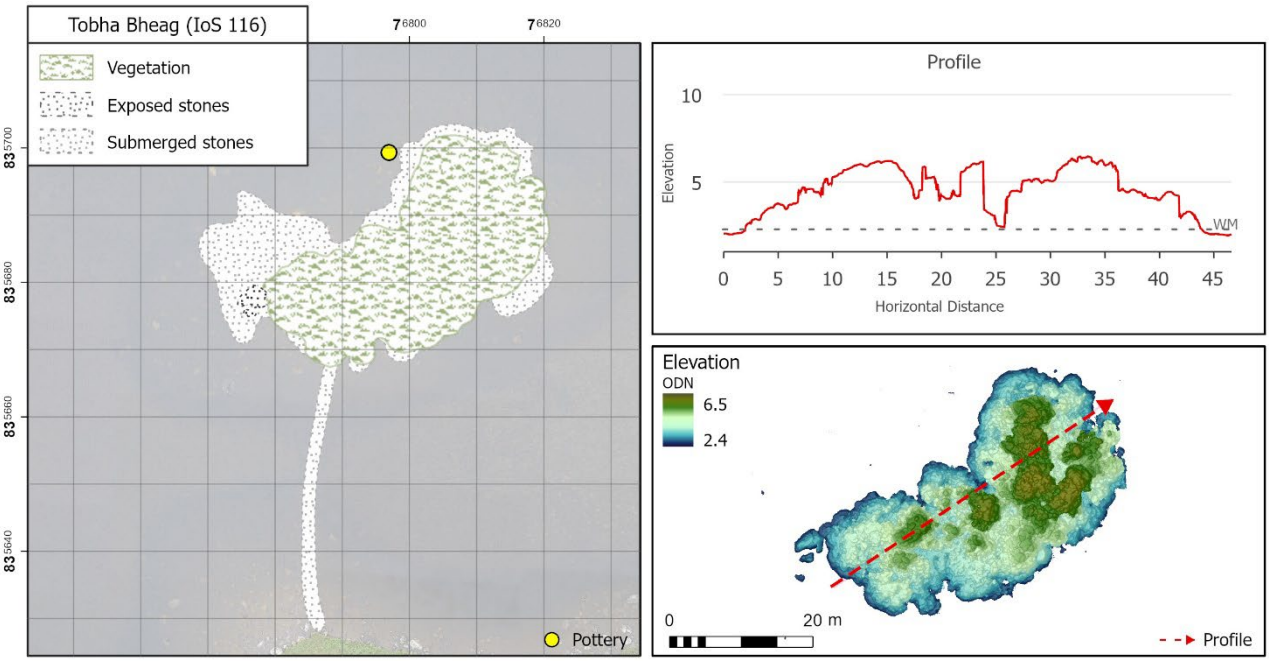


FIG 42. DIGITISED ISLAND AND ELEVATION PROFILE OF TOBHA BHEAG (IOS 115) DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

The larger island is known locally as Eilean an t-Sagairt (or Priest's Island) and is said to have been a retreat for a 17th century Irish Catholic priest (Canmore); hence, the local name of the loch. The irregularly shaped island is located in the centre of the loch and is connected to a large island/peninsula to the south, known as Eilean Dubh Froich, via a c. 39m causeway. The island is natural with some possible modifications visible along its northern perimeter; other modifications could also be present elsewhere but obscured by the heavy vegetation. A natural outcrop can be seen at the west end of the islet and the loch bed around the islet is filled with boulders and cobbles. The surface of the islet is covered in shrubs and although LiDAR was collected at this loch, the dense vegetation prevented any further understanding of the nature of the islet and any possible structural remains on it. Rather surprisingly, a substantial number of sherds from a single Neolithic vessel (undecorated but with distinctive everted with internal bevel Neolithic rim form) were found to the north of the island.

It is worth noting that at least one natural island augmented artificially into a 'crannog' during the Neolithic, Loch Langabhat, is known further north in Lewis (Garrow & Sturt 2019). Equally, it is also possible that this material was in some way associated with the more clearly artificial and crannog-like islet, that could conceivably have been constructed in the Neolithic, 50m to the west. Eilean an t-Sagairt would benefit from more detailed investigation as the wider context from which this important Neolithic material was recovered is not at present sufficiently clear.

**Ormiclate (IoS 122)**

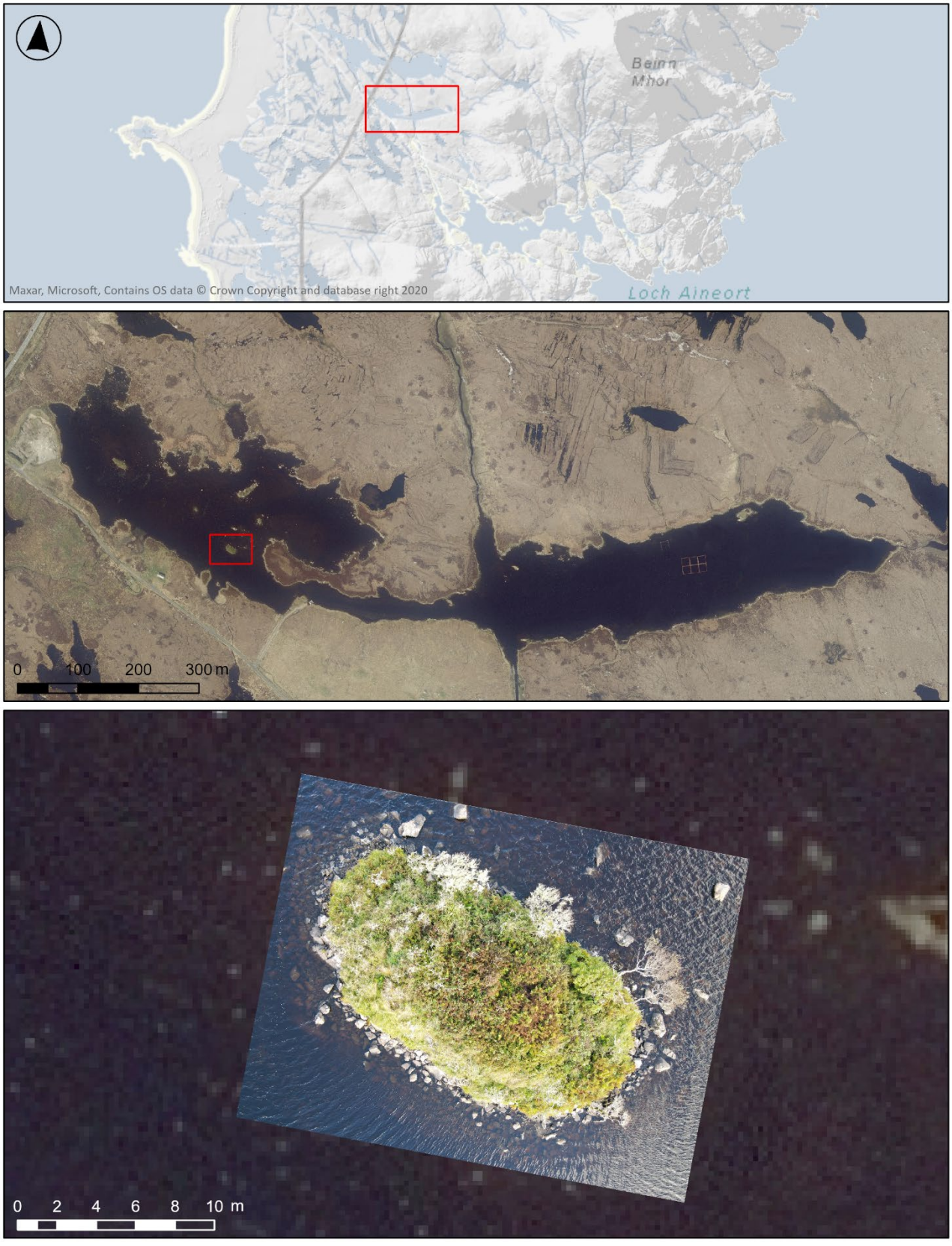


FIG 43. LOCATION OF ORMICLATE

| | |
|---|---|
| **Site name:** | Ormiclate (IoS 122) |
| **Loch name:** | Loch Ceann a' Bhaigh |
| **Canmore ID:** | 9894 |
| **Grid Reference:** | NF 76165 30299 |
| **Island:** | South Uist |
| **Date(s) visited:** | 06/07/22 |
| **Activities undertaken:** | Snorkel survey |
| **Islet description:** | ▪ 9x19m diameter (extent visible above July 2022 loch level)<br>▪ c. 1m height (above July 2022 loch level)<br>▪ Natural islet comprised of large boulders and covered in dense vegetation |
| **Loch description:** | Weed-filled loch of varying depths filled with rocky islands and boulder outcrops |
| **Sediment description:** | Coarse-grained sands and grits. |
| **Archaeological materials:** | No material remains were observed. |
| **Remaining questions:** | The island is clearly natural and leaves questions as to whether this is the artificial islet in Loch Ceann a' Bhaigh that was mentioned by Blundell. |
| **Canmore URL:** | https://canmore.org.uk/site/9894/ |

Loch Ceann a' Bhaigh is a slightly brackish loch located at the foothills of Beinn Mhor on South Uist. An artificial islet in this loch was communicated to Blundell (1913, 294-95); however, an inspection in 1965 had previously failed to locate the islet (Canmore). The site location on Canmore is incorrect, but UCAG survey suggested its location to be at NF 76165 30298. This islet was included in the survey given its overall resemblance to Loch Arnish, a Neolithic crannog investigated in Lewis in 2016 (Garrow et al. 2017), along with the potential to resolve its actual location.

The island is located in the western portion of the loch amongst numerous other rocky islands and boulder outcrops. It is oblong (c. 9 x 19m) and covered in dense vegetation, obscuring any understanding of potential surface modifications. Although the loch itself is filled with weed, underwater inspection revealed the island to be completely natural residing on bedrock with no evidence for modification. A second island located to the far west of loch was also inspected but also found to be natural. No material remains were observed in association with either one.

As the island is clearly natural and does not contain a causeway it is possible that this is not the site mentioned by Blundell. Further, an artificial channel has been constructed between this loch and Loch Eynort, a sea loch that connects to the Minch. The suggests substantial changes in loch levels since prehistory (or even since the time of Blundell's notice). It is thus possible that the islet of interest is now submerged. This would require further environmental and geophysical work to resolve.

**Ormacleit (IoS 121)**

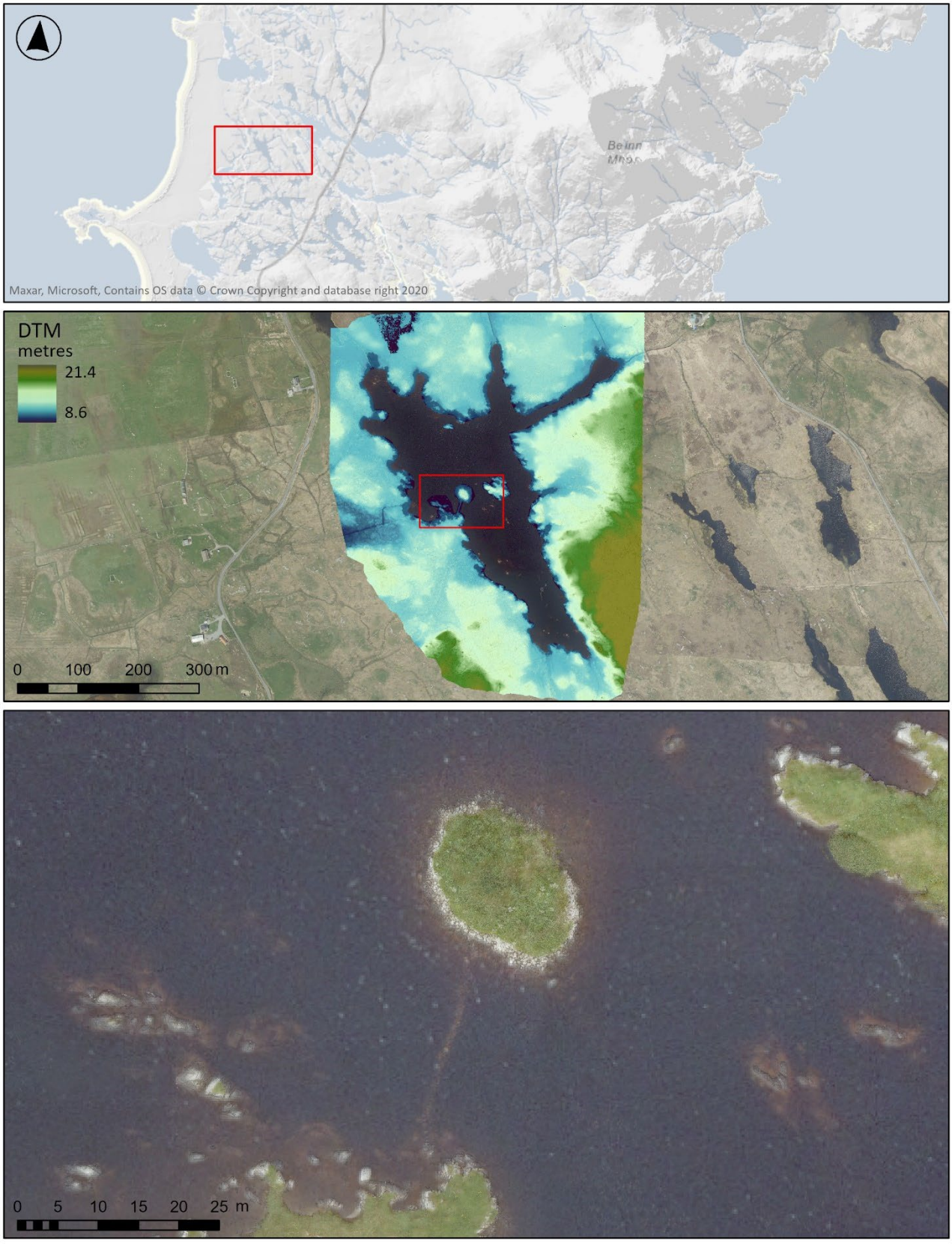


FIG 44. LOCATION OF ORMACLEIT

| | |
|---|---|
| **Site name:** | Ormacleit (IoS 121) |
| **Loch name:** | Loch na Duchasaich |
| **Canmore ID:** | 270831 |
| **Grid Reference:** | NF 74486 31154 |
| **Island:** | South Uist |
| **Date(s) visited:** | 06/07/22, 21/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry |
| **Islet description:** | ▪ 16x24m diameter (extent visible above July 2022 loch level)<br>▪ 2m height (above July 2022 loch level)<br>▪ Artificial islet comprised of portable stones |
| **Loch description:** | Shallow loch with consistent depth around islet of c. 0.5m, levelling off to c. 2m and gradually deepening to north of the islet (> 3m depth). |
| **Sediment description:** | Islet sits on coarse-grained bed, with seam of natural boulders approaching the islet from the southeast. Along the eastern half of the islet, soft-grained sediments were noted at a depth of 80cm below the loch bed, and to the north of the islet a silty shell-rich sediment layer was observed below the soft-grained sediments. |
| **Archaeological materials:** | Late Bronze Age/Early Age pottery sherds, quartz, pumice, burnt stone and burnt bone were found on the shallow loch bed around the islet and amongst submerged stones along the islet's margins. |
| **Remaining questions:** | Deeper sediment layers raise questions as to loch levels during time of islet construction and use. |
| **Canmore URL:** | https://canmore.org.uk/site/270831/ |

The islet is located in Loch na Duchasaich, around 0.5 km to the southeast of Ormiclate Castle (Canmore ID 9897). The loch is shallow (c. 0.5m depth) around the islet and levels off to c. 2m at a distance of around 5m from the edge of the islet. The loch appears to gradually deepen (> 3m) further to the north of the islet. The islet is connected to the western shore of the loch via a c. 22m causeway that extends from the south of the islet. It is oblong (16 x 24m) and comprised of portable stones that form an island around 2m above the loch surface. Upon first inspection the islet appeared to rest on consolidated, course-grained loch bed sediments with minimal overlying silts; however, pockets of soft silty-sandy sediments were found, predominately around stones at the base of the structure along the eastern quadrant. Further inspection revealed soft-grained sediments built up against the edge of the islet's underwater margin at a depth of around 80cm. The northeast portion of these soft-grained sediments appeared to rest over or within a shell-rich layer of dark organic sediment.

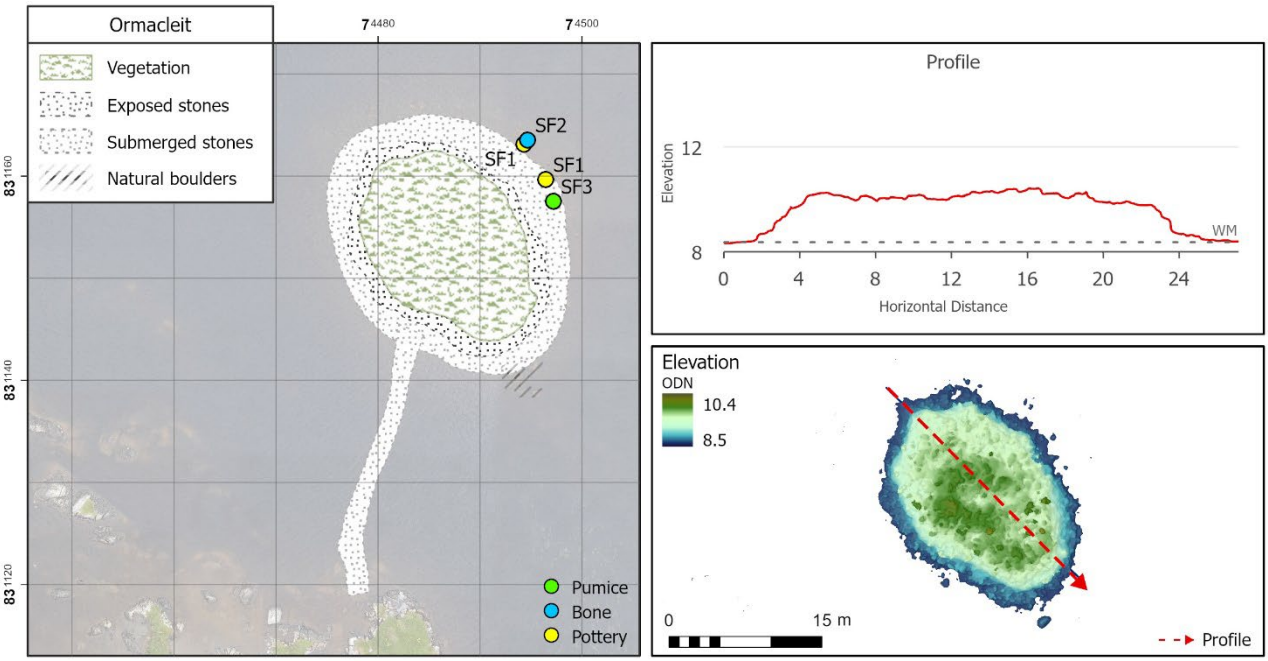


FIG 45. DIGITISED ISLAND (WITH LOCATION OF FINDS) AND ELEVATION PROFILE OF ORMACLEIT DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

Small sherds of abraded pottery were recovered from the shallows around the islet along with a small piece of pumice. Within the deeper soft-grained sediments to the north of the islet, fragments of pottery and burnt bone (one fragment identified as cattle metacarpal) were found. The pottery suggests a Late Bronze Age/Early Iron Age date for the site. Given the depth and quantity of the materials recovered, it is likely that a more substantial quantity of materials exists around the site within these soft-grained and shell-rich sediment layers. Further, the composition and depth of these layers raise questions as to the nature of loch levels during the time of islet construction and use.

**Kildonan (IoS 126)**

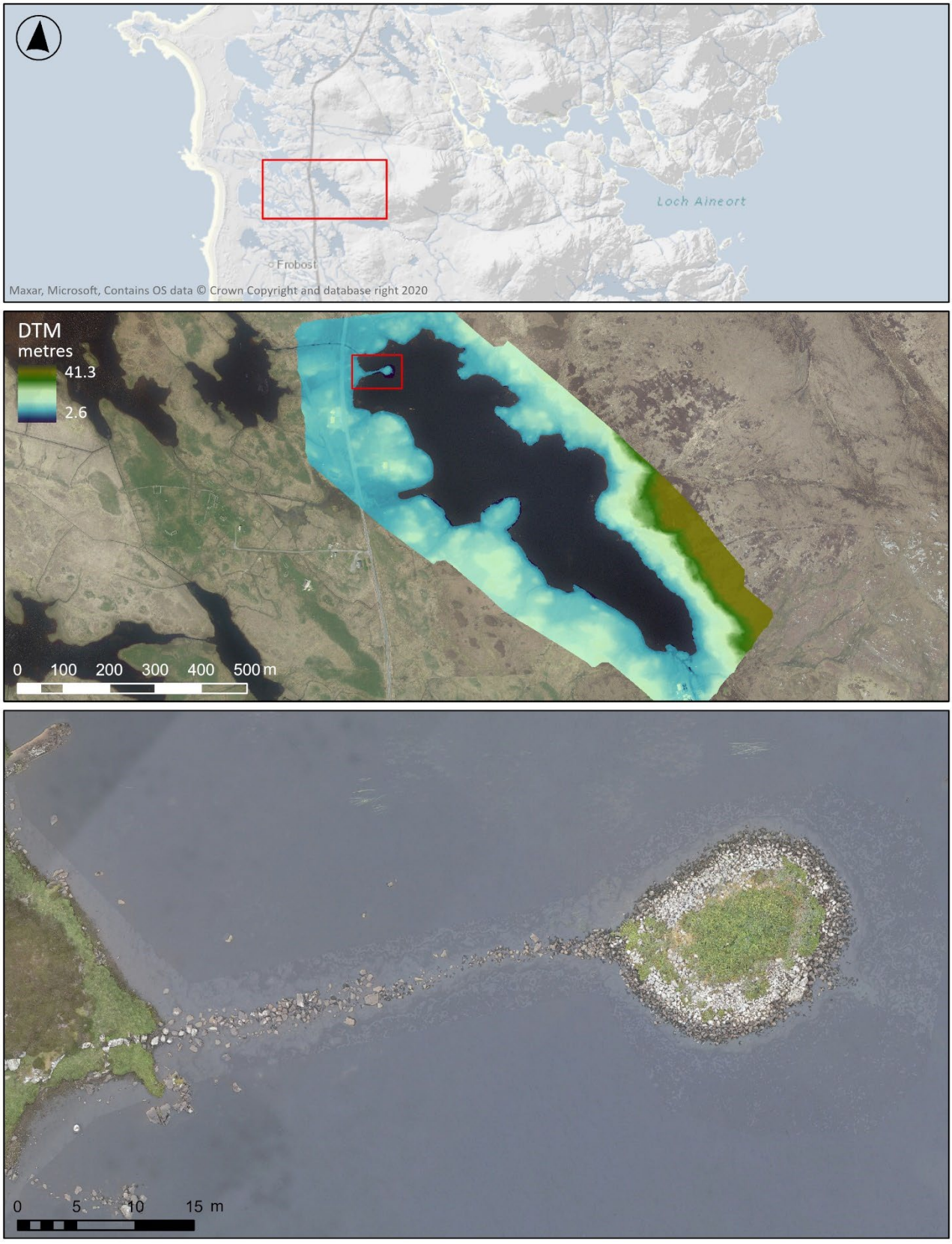


FIG 46. LOCATION OF KILDONAN

| | |
|---|---|
| **Site name:** | Kildonan (IoS 126) |
| **Loch name:** | Loch na Muilne |
| **Canmore ID:** | 9846 |
| **Grid Reference:** | NF 74455 27240 |
| **Island:** | South Uist |
| **Date(s) visited:** | 06/07/22, 07/07/22, 19/07/22, 20/07/22, 27/07/22 |
| **Activities undertaken:** | Snorkel/diver survey, aerial photogrammetry, LiDAR survey, sonar |
| **Islet description:** | ▪ 17x20m diameter (extent visible above July 2022 loch level)<br>▪ 1.8m height (above July 2022 loch level)<br>▪ Artificial islet comprised of small portable stones |
| **Loch description:** | Loch bed is fairly consistent level around islet (c. 0.7m depth) deepening towards the east |
| **Sediment description:** | Islet sits on coarse grained sediment rock, with a patch of very fine-grained sediment on the northern quadrant. |
| **Archaeological materials:** | Numerous Neolithic Hebridean Ware and Unstan-type vessel sherds were recovered from within stones and on loch bed around islet. Pieces of roundwood and a fibrous wood material were also noted. |
| **Remaining questions:** | The relationship between the observed wood components and the stone islet remains unclear. Environmental work required to understand the loch levels during the Neolithic and the relationship between the islet and the drop off in the loch bed to the east. The possible remains of a dun suggest later activity but would need further work on the surface of the islet to resolve. |
| **Canmore URL:** | https://canmore.org.uk/site/9846/ |

Kildonan is located in Loch na Muilne, South Uist, a nearly 1km long loch that currently sits just to the south of the Kildonan Museum. The islet is located to the far northwest of the loch and is connected to the western shore via a c. 37m causeway. The loch is shallow around the islet, remaining at a fairly consistent depth of c. 0.7m at a distance of around 3m from the islet. Deeper portions were noted around the islet to the northeast and southeast, and sonar survey revealed that the loch gradually deepens to c. 25 m to the east of the islet (Fig 47).

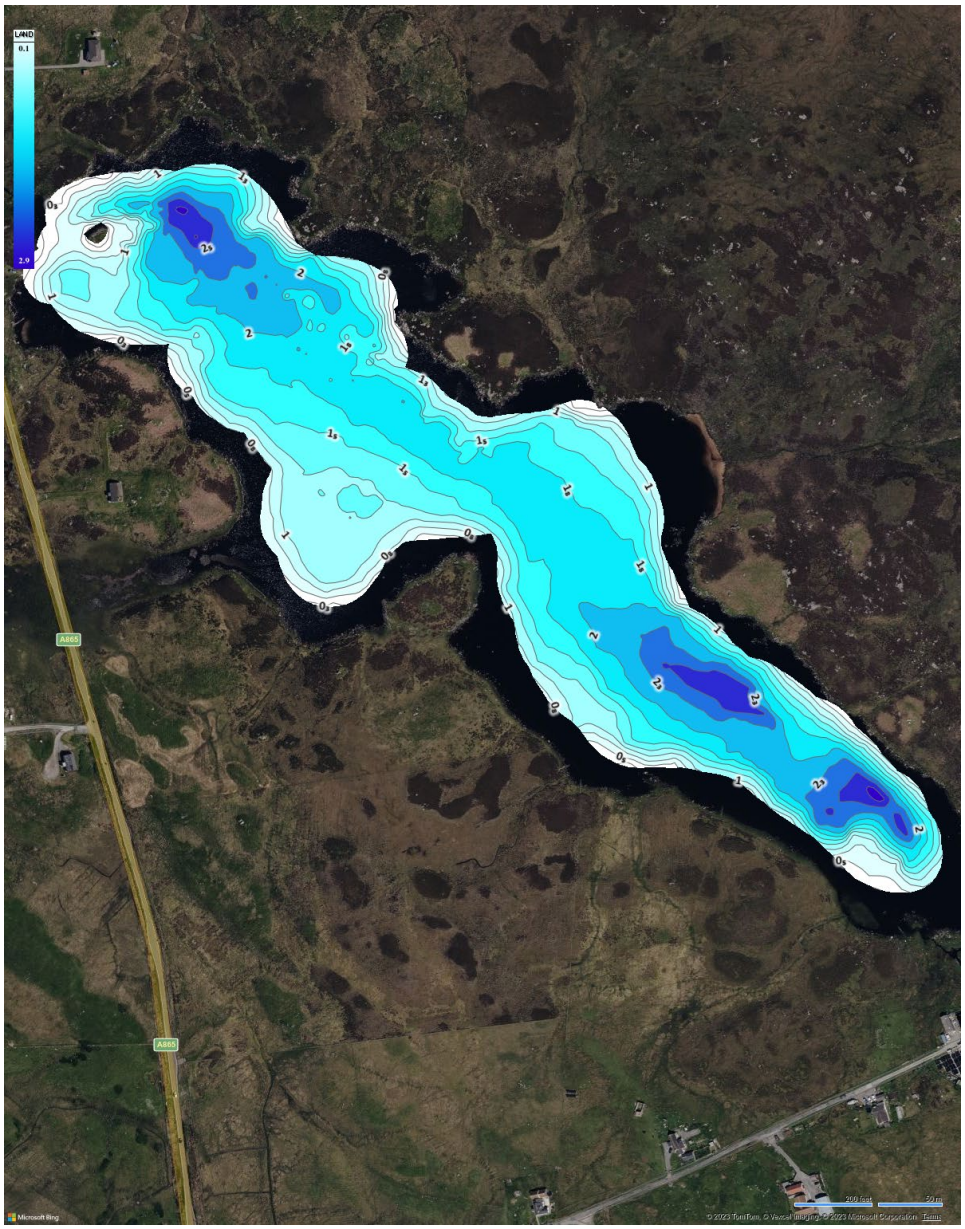


FIG 47. DEPTHS OF LOCH NA MUILNE

The islet is roughly circular, measuring 17m x 20m, and rises around 1.8m above the loch surface. The surface of the islet appears to contain the remnants of a structure (leading to its Canmore classification as a dun). Low vegetation cover prevented further observation, but the mounded nature of the islet profile suggests structural remains (see Fig 48). The islet appears to be entirely artificial, comprised of portable stones that sit on course-grained sediments with a patch of fine-grained sediments observed along the northern quadrant. A linear stone formation was also observed running underwater from the southeast quadrant of the islet for a distance of around 9m.

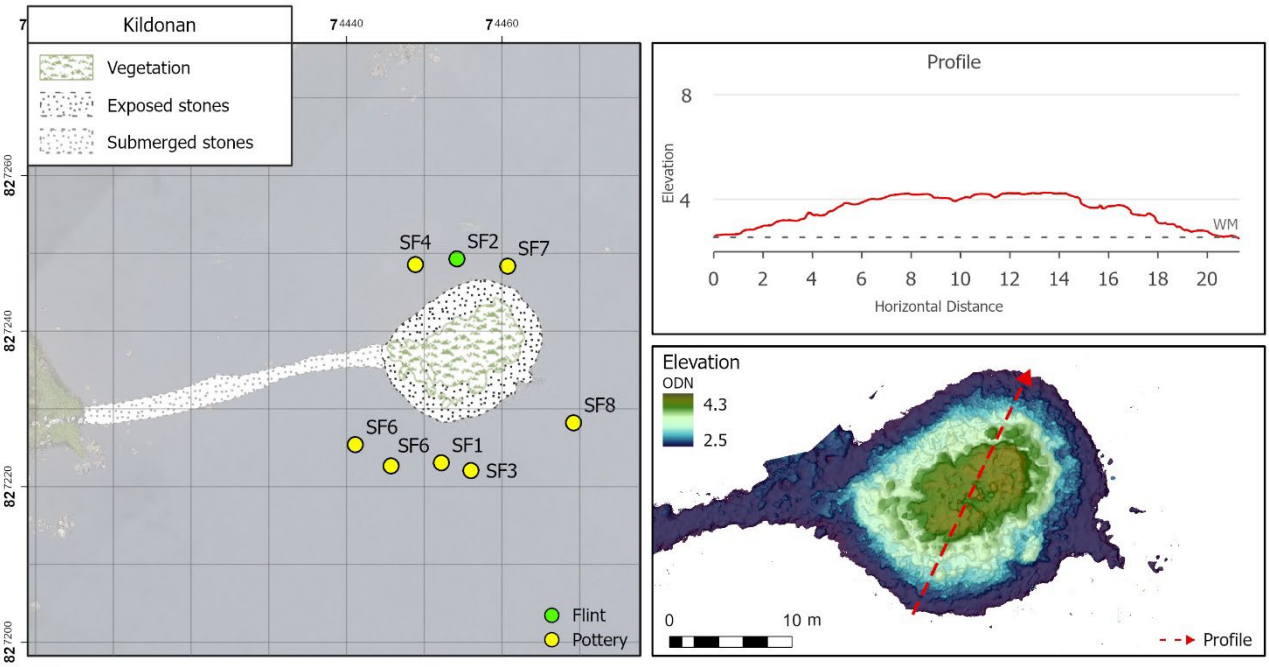


FIG 48. DIGITISED ISLAND (WITH LOCATION OF FINDS) AND ELEVATION PROFILE OF KILDONAN DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

Abraded pottery was observed amongst the stones in the water around the islet in general, and an abundance of Neolithic pottery was found to the south and southeast of the islet at a distance of between 3m and 8.5m from the islet's margin and at a loch depth of between 1.5m and 2m. These sherds were found amongst the stones at the underwater margin of the islet and along the submerged linear feature. The Neolithic pottery recovered included both Unstan-type vessels and Hebridean Ware, and some largely intact but deteriorated vessels were also observed (Fig 49). Wedged against one of these fragile vessels was an oblong cracked stone. In addition, pieces of roundwood were noted amongst the pottery finds to the south of the islet along with a fibrous wood material that appeared to be either a deteriorating timber or some form of organic matting (Fig 49 - bottom image), as noted at Eilean Domhnuill. Roundwood and timber components have been observed in situ at other Neolithic crannogs (Garrow et al. 2017; Blankshein et al 2021) and suggest that the architecture at Kildonan likewise contains timbers, but more invasive work is required to resolve this question.

Having generated a suitable understanding of the construction of the islet and its position within the loch, the site would certainly now benefit from more detailed investigations. With a clearly Neolithic date for its initial construction and use, its position adjacent to a deepening in the loch is notable as it accords with a trend noted at other Neolithic crannogs. Any further understanding of this relationship would require environmental work to be conducted within and around the loch to determine loch levels at the time of islet construction. Furthermore, since the site is a scheduled monument, no invasive survey/sampling was conducted on or around the islet in July 2022. Such work would enable a better understanding of the relationship between the observed wood components and the stone islet and allow for the recovery of organics for radiocarbon dating. The possible remnants of a dun on the islet suggest later activity at the site as well. This again may be resolved through further investigation of the surface of the islet.

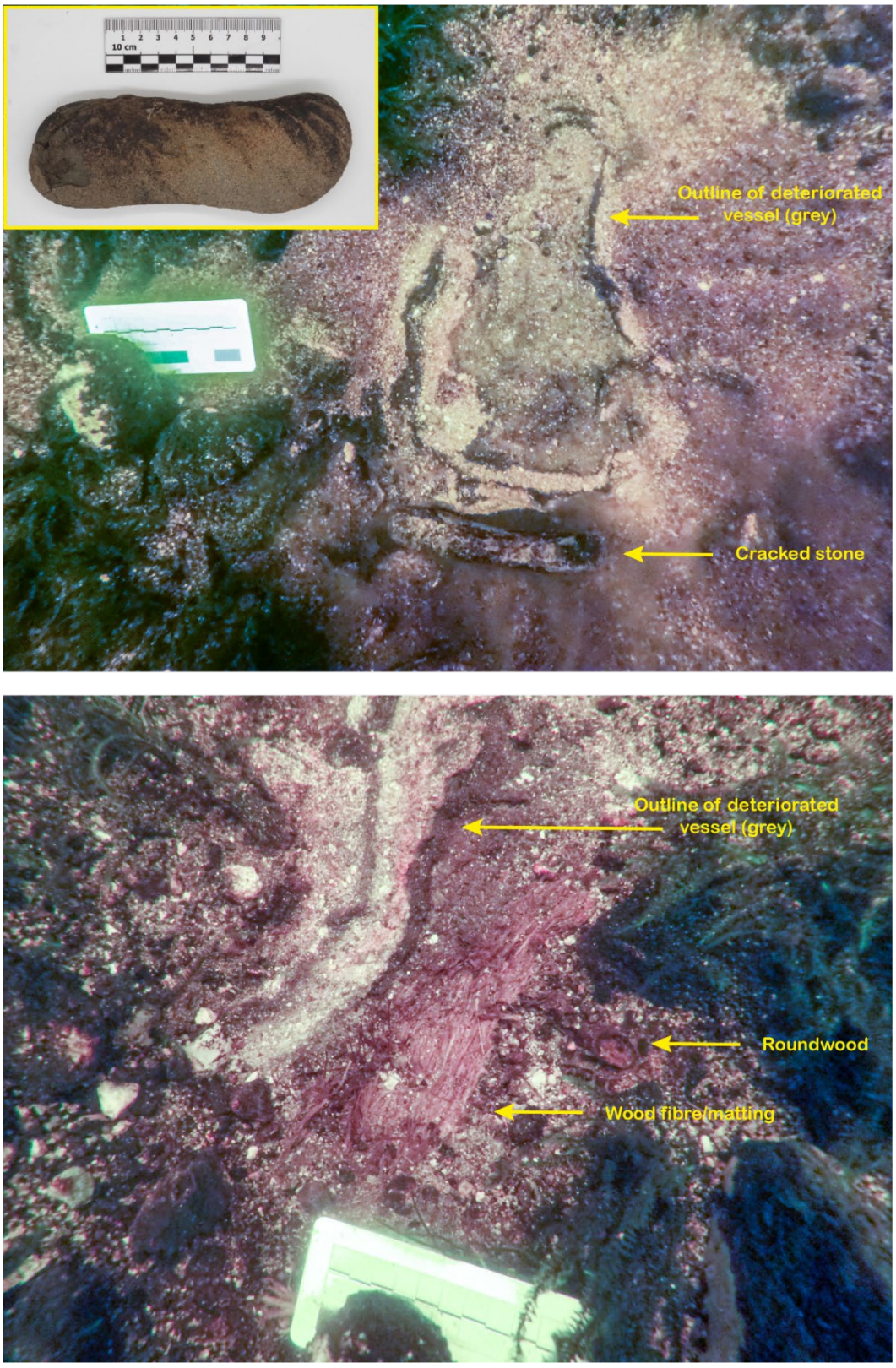


FIG 49. CRACKED STONE AND DETERIORATED VESSEL (TOP) AND ROUNDWOOD PIECES AND WOOD FIBRE/MATTING ALONG WITH A DETERIORATED VESSEL (BOTTOM) (SCALE BAR 10 CM)

**Mingearraidh (IoS 128)**

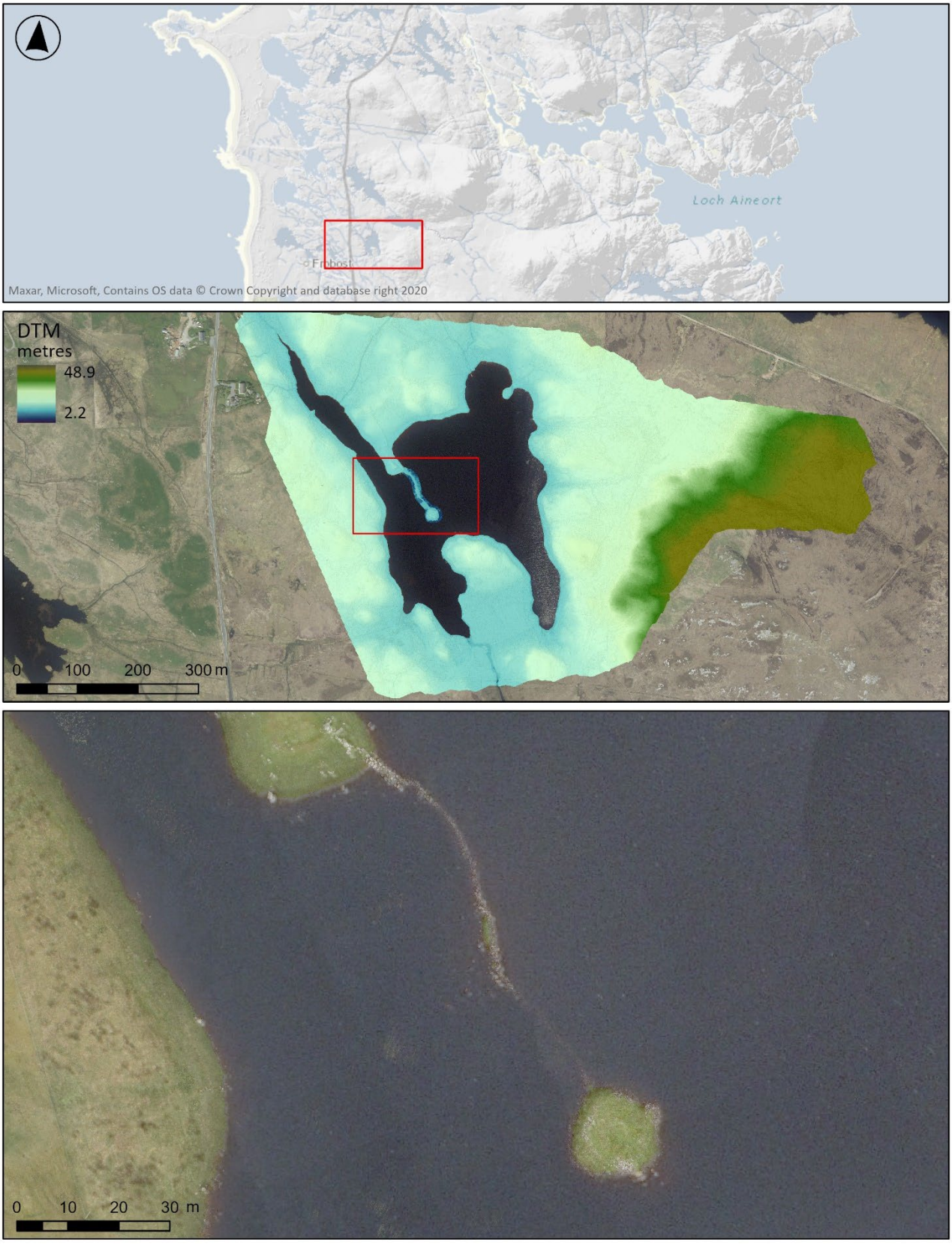


FIG 50. LOCATION OF MINGEARRAIDH

| | |
|---|---|
| **Site name:** | Mingearraidh (IoS 128) |
| **Loch name:** | Loch Cnoc a Buidhe |
| **Canmore ID:** | 9826 |
| **Grid Reference:** | NF 74824 25883 |
| **Island:** | South Uist |
| **Date(s) visited:** | 18/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry |
| **Islet description:** | ▪ 18x19m diameter (extent visible above July 2022 loch level)<br>▪ 1.6m height (above July 2022 loch level)<br>▪ Artificial islet comprised of portable stones |
| **Loch description:** | Shallow loch (c. 70cm depth) around islet. |
| **Sediment description:** | Islet sits on course-grained sediment. Softer sediments exist at the margin of stone islet and loch bed with heavier patches to the east of the islet. |
| **Archaeological materials:** | Heavily abraded Iron Age pottery was found from within the sediment rich margins. Much modern rubbish was noted around the loch shore (e.g. tea kettle, porcelain jars, glass bottles). |
| **Remaining questions:** | The recovery of Iron Age pottery and the circular structure identified on the islet's surface suggest the presence of an Iron Age dun/broch but further inspection of islet would be required to confirm. |
| **Canmore URL:** | https://canmore.org.uk/site/9826/ |

Loch Cnoc a Buidhe is located less than 500m to south of Loch na Muilne. It sits at the foothills of the rugged mountain massif landforms that fringe the east coast of South Uist, and around 480m to the east (upland) of this loch is the Neolithic chambered tomb, Reineval. The islet resides in the western half of the loch and is connected to a promontory on the northwest shore via a c. 77m long and winding causeway. The loch is shallow around the islet (c. 70cm) and deepens gradually to the east where some silting and vegetation growth has occurred. No depths greater than 1m were observed in the northern portion of the loch.

The islet is circular (c. 18m in diameter) and comprised of small portable stones that rise less than 2m above the loch surface. These stones reside on course-grained sediments and degraded stone. Softer sediments were observed further from the islet, around 1m from the islet's margin and predominately along its eastern quadrant. The surface of the islet is covered in vegetation, but the digital elevation model derived from the photogrammetry survey shows a circular structure, which appears to be the dun noted during previous surveys (Canmore; Raven and Shelley 2013) (Fig 51 – bottom right). A second islet/promontory on the northeast shore of the loch (at NF 74948 26082, clearly visible in the DTM above) was also investigated but found to be natural.

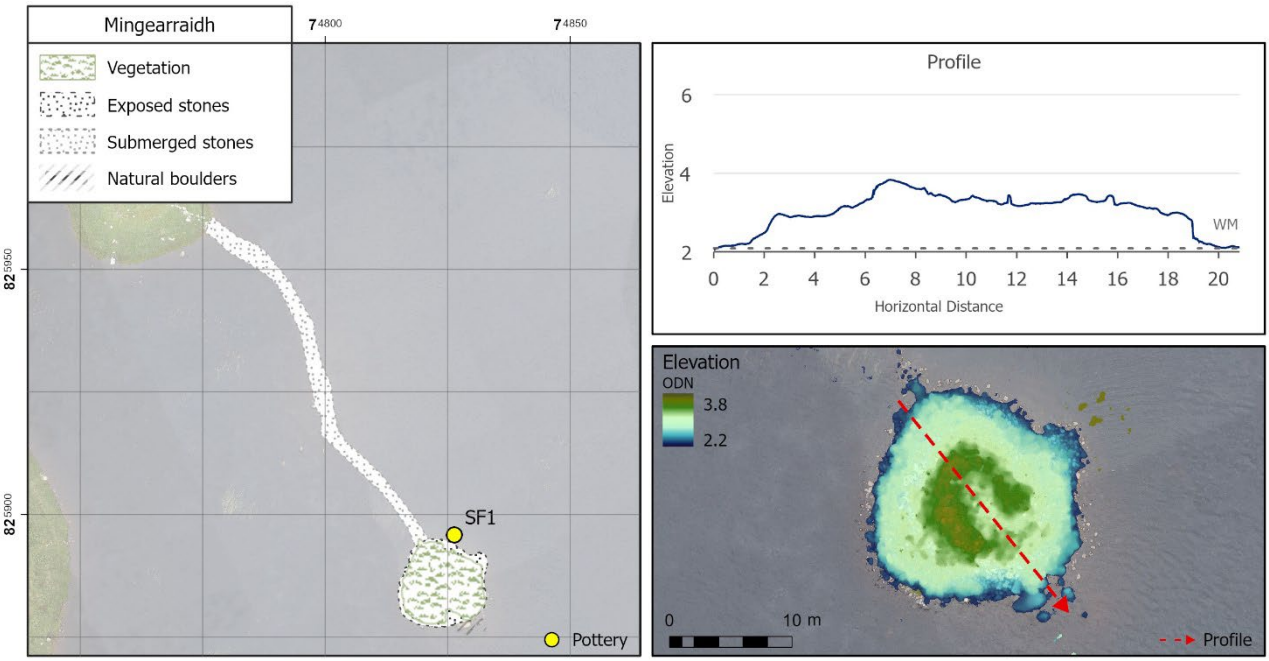


FIG 51. DIGITISED ISLAND (WITH LOCATION OF FINDS) AND ELEVATION PROFILE OF MINGEARRAIDH DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

Heavily abraded bits of Iron Age pottery were found within the sediment-rich margins, and a high quantity of modern rubbish was also noted around the loch shore (e.g. tea kettle, porcelain jars, glass bottles). The Iron Age pottery and apparent dun structure on the surface of the islet demonstrates Iron Age activity at the site.

**Eilean Chreamh (IoS 132)**

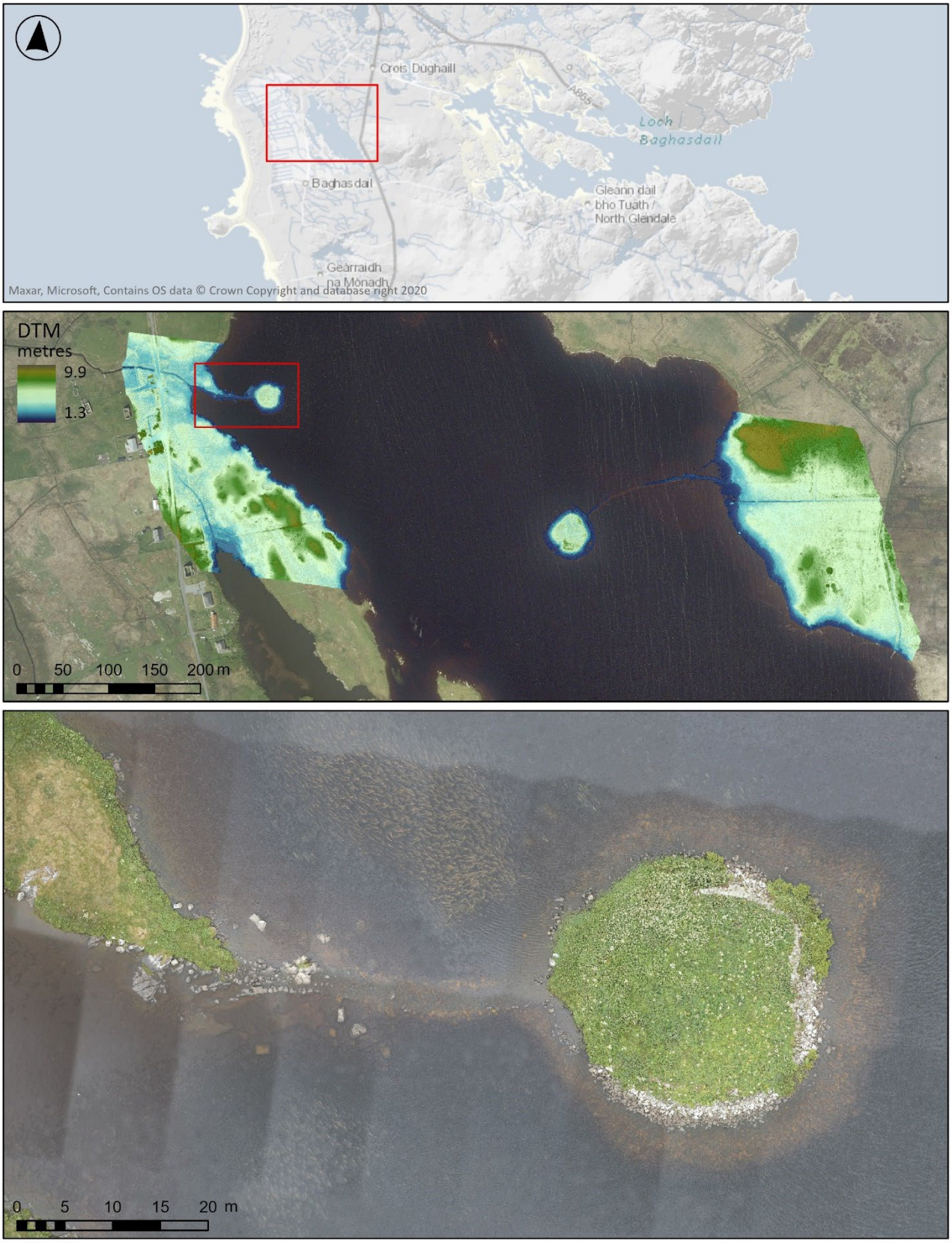


FIG 52. LOCATION OF EILEAN CHREAMH

| | |
|---|---|
| **Site name:** | Eilean Chreamh (IoS 132) |
| **Loch name:** | Loch Dun na Cille |
| **Canmore ID:** | 9794 |
| **Grid Reference:** | NF 74270 19189 |
| **Island:** | South Uist |
| **Date(s) visited:** | 21/07/22 |
| **Activities undertaken:** | Snorkel/SCUBA survey, aerial photogrammetry, LiDAR survey, sonar |
| **Islet description:** | ▪ 29x30m diameter (extent visible above July 2022 loch level), with visible submerged stones extending c. 4.5m from exposed edge of islet<br>▪ 2m height (above July 2022 loch level)<br>▪ Artificial islet comprised of portable stones |
| **Loch description:** | Deeper loch with depth of around 3m around islet. |
| **Sediment description:** | Course-grained sediments overlain by heavy silting. |
| **Archaeological materials:** | Large quantities of pottery sherds, some flat-bottomed vessels (similar to that retrieved from ML8), rounded stone/quartz pebbles and animal bones (some burnt) were observed within the submerged stones and on the loch bed at the base of these stones. A medieval/post-medieval leather shoe and slag were recovered. Amongst stones around islet and along shore and causeway modern materials were observed (e.g. glass bottles, ceramic jars). |
| **Remaining questions:** | The site has been well characterised through this and previous inspections; however, given the depth of sediments, the possibility remains for the presence of earlier materials. |
| **Canmore URL:** | https://canmore.org.uk/site/9794/ |

Loch Dun na Cille is a large loch, stretching just over 1.5 km in length, located to the south of Cille Pheadair, South Uist. Sonar survey did not cover the entirety of the loch but indicated a maximum depth of 3.9m in the area surveyed (Fig 53). Substantial weed growth was recorded along the edges of the loch and in shallow water areas. The loch contains two artificial islands, providing an opportunity to explore the relationship between them. Eilean Chreamh is the smaller of the two and is connected to the west shore of the loch via a substantial causeway measuring c. 30m long and over 3m wide. While the above-water portion of the islet measures roughly 30m in diameter, a submerged ring of stone is visible underwater around the island and extends up to 4m from its exposed edge. Beyond this point the loch deepens quickly, reaching a depth of c. 3m around the base of the underwater extent of the islet. This depth necessitated the use of SCUBA to investigate of the islet.

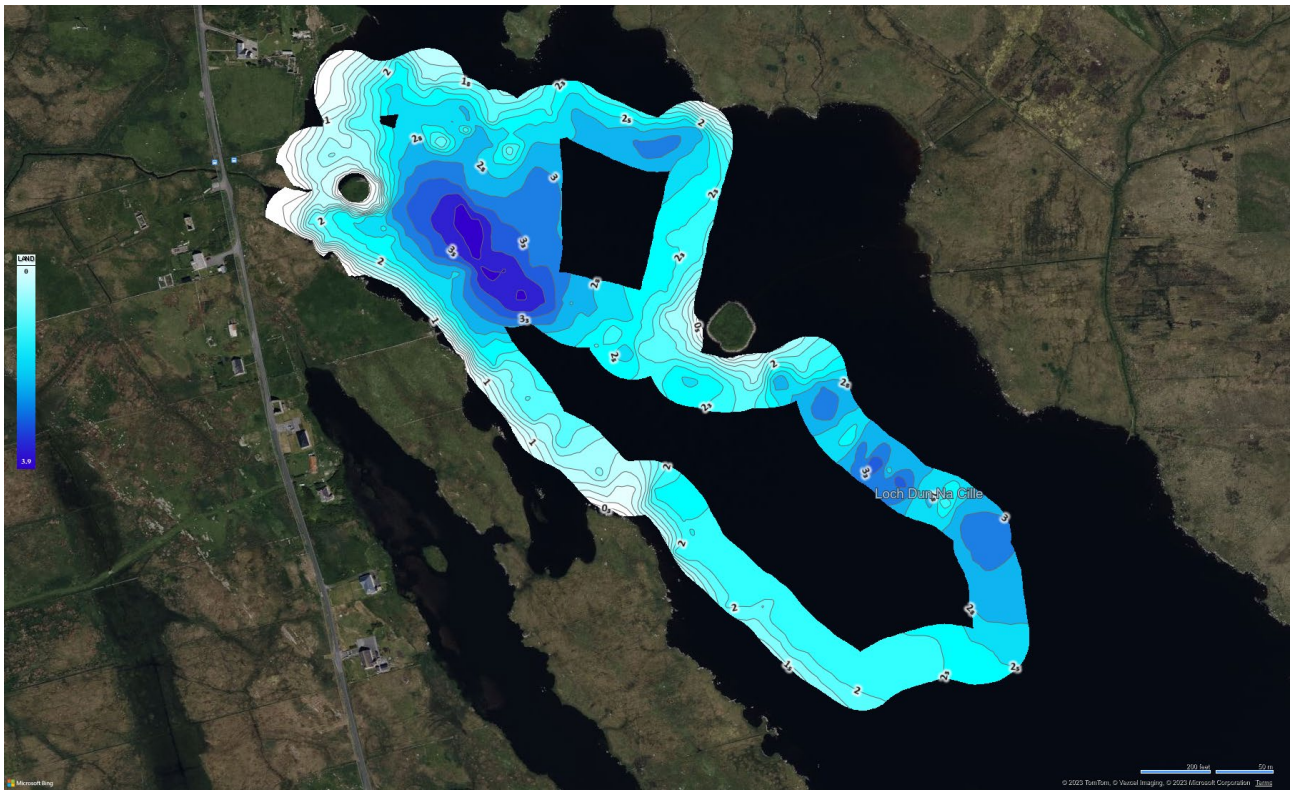


FIG 53. DEPTHS OF LOCH DUN NA CILLE

The islet appears to be entirely artificial, with the base comprised of large stones that rise steeply from the loch bed and are topped with smaller, portable stones that extend to the surface. The islet rises around 2m above current loch levels and appears to contain structural remains, perhaps relating to the conversion of the islet into a garden in the 1920s (Canmore). Indeed, the use of the site as a garden was confirmed by local residents; large quantities of modern rubbish (glass bottles, ceramic jars, etc.) were found in the loch around the islet. Heavy silting around the site, especially to the east, prevented any in-depth observation of loch bed sediments, but the stones appear to reside on course-grained sediments filled with denuded cobbles and pebbles.

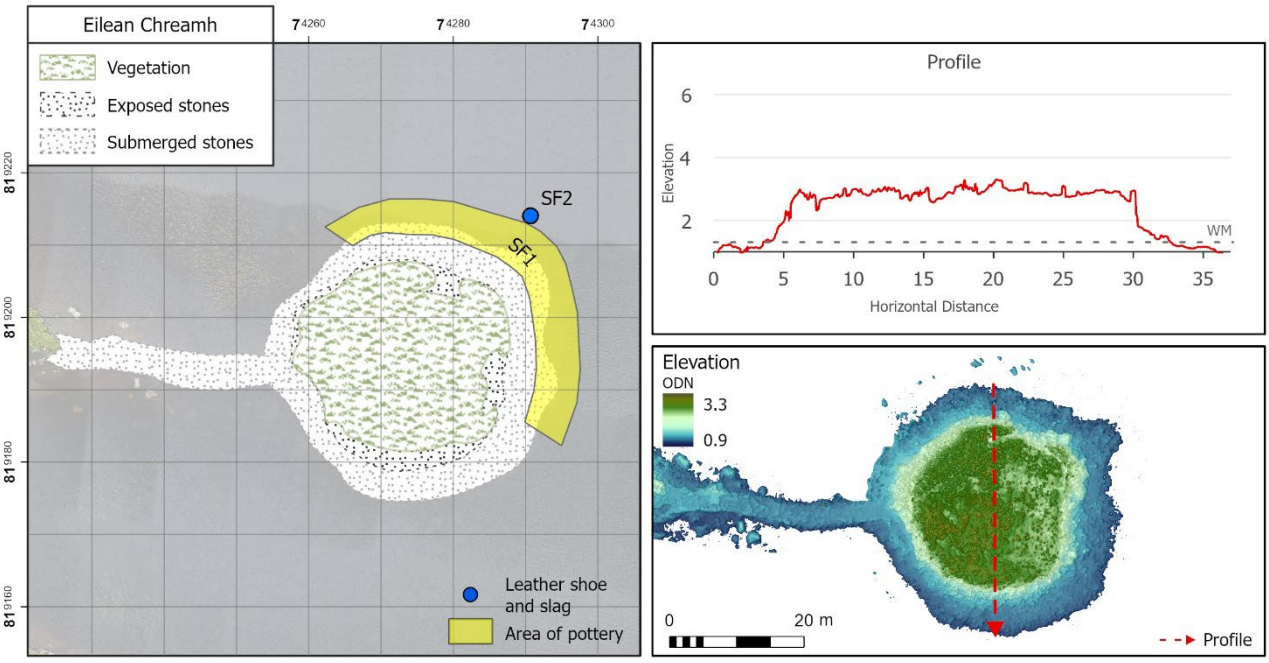


FIG 54. DIGITISED ISLAND (WITH LOCATION OF FINDS) AND ELEVATION PROFILE OF EILEAN CHREAMH DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

Diving the underwater extent of the islet revealed large quantities of materials. In addition to modern rubbish, an abundance of pottery sherds, rounded stone and quartz pebbles, and animal bones were also noted. Charred residue on one sherd produced a radiocarbon date of 260-430 cal AD. The bones recovered were identified as cattle and red deer along with the teeth of horses and a sheep/goat. To the north of the islet, where its base meets the loch bed (at a loch depth of around 3.5m), pieces of slag were observed. A leather shoe was also recovered from this vicinity, which has been radiocarbon dated to 1450-1630 cal AD.

These finds are reminiscent of those found on the mainland. For instance, several crannogs in Dowalton Loch (Dumfries and Galloway) were investigated by Stuart (1866) and finds included lumps of iron slag, large quantities of bone and a piece of a leather shoe. In addition, rounded quartz pebbles have been recovered from a number of other crannogs, including Lochlea (Munro et al. 1879, p.181), Dorman's Island (Wilson 1873, p.375), Eilean Domhnuill (Armit 1986) and Loch Bhorgastail (Garrow et al. 2017; Blankshein et al. 2021) (Fig 55), to name a few. The large number of bones are also indicative of later prehistoric


crannogs; bone, often burnt, has been observed at many mainland crannog sites.

FIG 55. COMPARISON OF ROUNDED QUART PEBBLES RECOVERED FROM A) EILEAN CHREAMH, B) LOCH BHORGASTAIL AND C) LOCHLEE (MUNRO ET AL. 1879, FIG. 2)

The large quantity of materials at Eilean Chreamh indicates extensive use of the islet probably through multiple periods, and the types of materials and their similarity to those recovered from mainland crannogs such as Dowalton Loch indicate activity occurring during later prehistory and beyond. No materials suggesting earlier activity were recovered.

**Loch an Eilean (IoS 135), (IoS 136)**

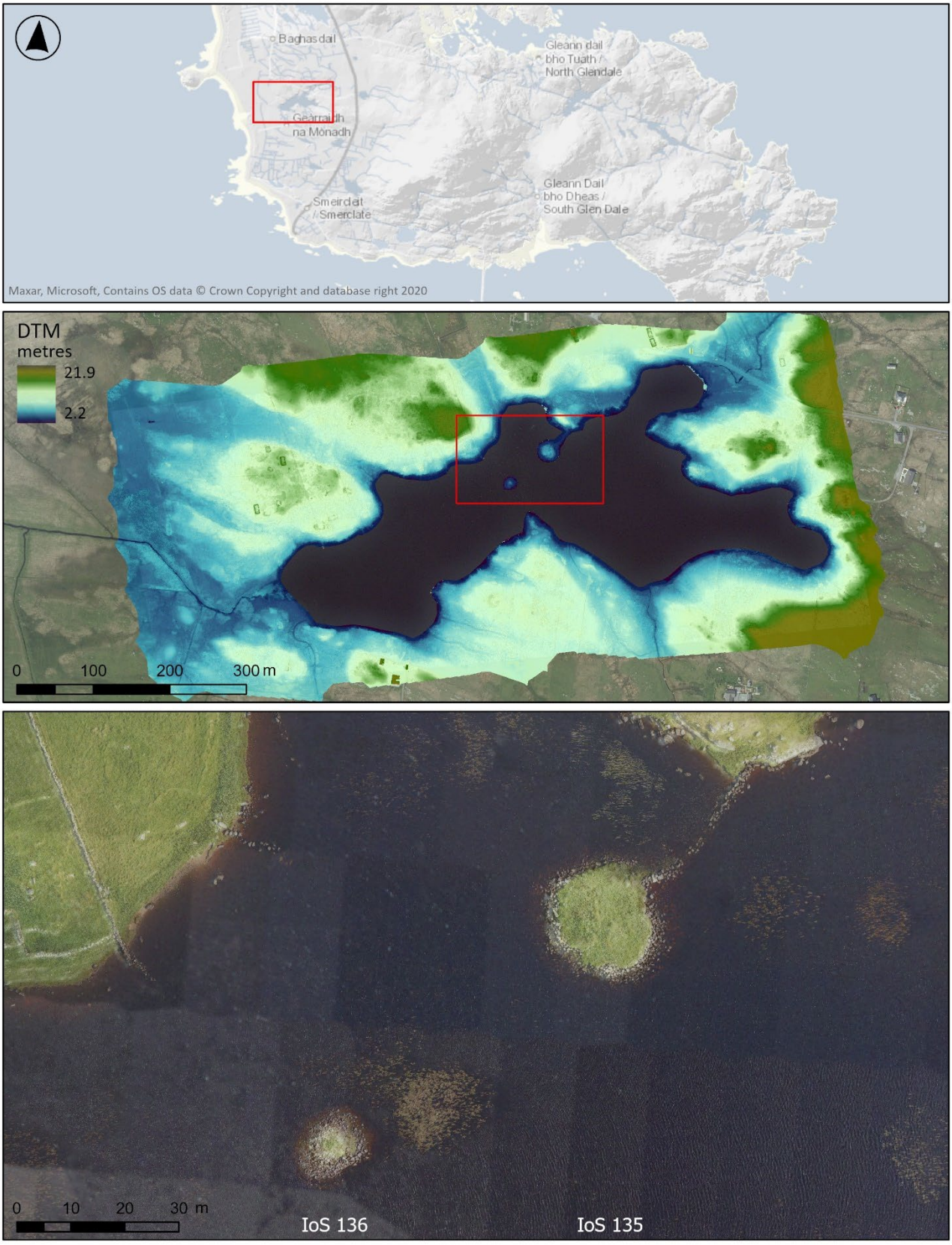


FIG 56. LOCATION OF TWO ISLANDS IN LOCH AN EILEAN

| | |
|---|---|
| **Site name:** | Loch an Eilean (IoS 135) |
| **Loch name:** | Loch an Eilean |
| **Canmore ID:** | 270796 |
| **Grid Reference:** | NF 74684 16926 |
| **Island:** | South Uist |
| **Date(s) visited:** | 07/07/22, 14/07/22 |
| **Activities undertaken:** | Snorkel/SCUBA survey, aerial photogrammetry, LiDAR survey, sonar |
| **Islet description:** | ▪ 22x24m diameter (extent visible above July 2022 loch level)<br>▪ 1.9m height (above July 2022 loch level)<br>▪ Artificial or substantially modified islet comprised of portable stones built on shallow within loch |
| **Loch description:** | Peat-stained loch with significant weed growth. Depth of loch around islet is c. 0.5m. |
| **Sediment description:** | Fine-grained sediment building up against causeway to north of island. Medium-grained sediments and degraded stone observed elsewhere. |
| **Archaeological materials:** | Early Iron Age pottery fragments, a few pieces of quartz and worked/burnt lithics were recovered from the shallows around the islet. |
| **Remaining questions:** | The depth of sediments at the margin of the islet remains uncertain. The relationship with second smaller island remains unclear. |
| **Canmore URL:** | https://canmore.org.uk/site/270796/ |

| | |
|---|---|
| **Site name:** | Loch an Eilean (IoS 136) |
| **Loch name:** | Loch an Eilean |
| **Canmore ID:** | 270812 |
| **Grid Reference** | NF 74634 16885 |
| **Island** | South Uist |
| **Date(s) visited:** | 07/07/22, 14/07/22 |
| **Activities undertaken:** | Snorkel/SCUBA survey, aerial photogrammetry, sonar |
| **Islet description:** | ▪ 10.5x13m diameter (extent visible above July 2022 loch level)<br>▪ 1m height (above July 2022 loch level)<br>▪ Artificial islet comprised of portable stones |
| **Loch description:** | Peat-stained loch with significant weed growth. Depth around the islet is c. 1m, and the loch remains relatively shallow (c. 1.5 m) at a distance from the islet. |
| **Sediment description:** | Heavy silting around islet obscured observation of loch bed sediments. |
| **Archaeological materials:** | One undecorated, possibly medieval, pottery sherd was recovered from within the submerged stones to the west of the islet, and historic materials (glass bottles, a wooden barrel) were observed. Roundwood (possibly birch) running horizontally from under the stones at the margin of islet was found and sampled for analysis. |
| **Remaining questions:** | Although the site appears promising, sedimentation levels prevented any further understanding of the construction and use. The relationship with the larger island remains unclear. |
| **Canmore URL:** | https://canmore.org.uk/site/270812/ |

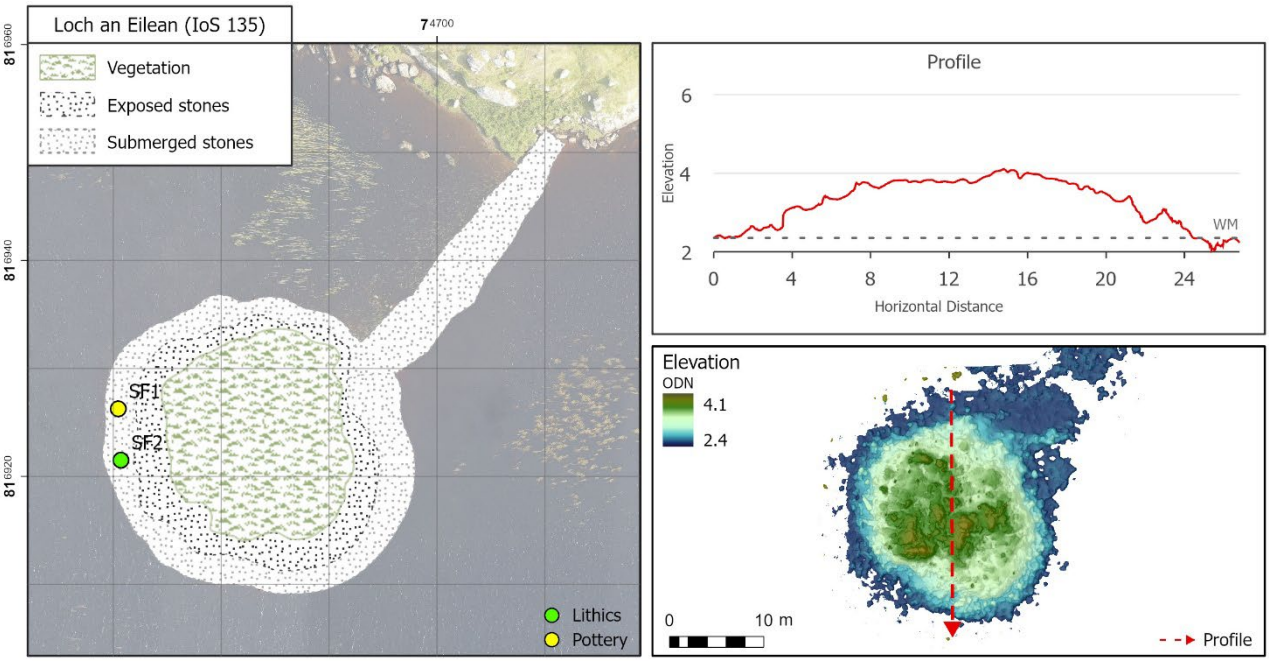


FIG 57. DIGITISED ISLAND (WITH LOCATION OF FINDS) AND ELEVATION PROFILE OF LOCH AN EILEAN (IOS 135) DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

Loch an Eilean is located south of South Boisdale towards the south coast of South Uist. The loch contains two islets in close proximity, providing the opportunity to explore the potential relationship between the two. Both islets are located in the central portion of the loch and are connected to the north shore via causeways. The larger of the two islets (IoS 135) has a c. 24m causeway extending from its northeast edge. The smaller islet (IoS 136) is connected to the shore via a c. 46m causeway that extends from its northwest perimeter. Heavy sedimentation on the islet side of this causeway has nearly obscured it. Peat-stained water and substantial weed growth limited visibility, especially around the smaller islet.

The larger islet (IoS 135) is roughly circular (c. 23m in diameter) and is comprised of portable stones that rise around 1.5m above the loch surface. The islet thus appears to be artificial or at least substantially modified. These stones reside on medium- to course-grained sediments filled with denuded stone, and fine-grained sediments are building up against the north of the islet and along the causeway. The depth around the islet is c. 0.5 m, and the loch remains relatively shallow (c. 1.5 m) even at a distance from the islet. This is confirmed by sonar collected in the loch.


FIG 58. CRACKED STONE RECOVERED FROM LOCH AN EILEAN (IOS 135)

Abraded pottery fragments, several flakes of quartz and a few rounded/polished lithics (some appearing to be cracked) were found around the islet, especially along the southwest quadrant (Fig 58). Spherical or polished stones have been found at a number of crannogs (see Eilean Chreamh, IoS 132) and some show signs of cracking, including those found abutting Neolithic pottery at Kildonan (see Kildonan, IoS 126).

The smaller islet (IoS 136) is partially submerged and rises about 1m above the loch. The islet is comprised of portable stones supported by larger stones underwater. The sides of the islet are steep, and the loch bed quickly drops to around 1.5m at a short distance from the islet's surface. This necessitated SCUBA for further investigation. Where visible, fine-grained sediments were observed around the islet; however, the base of the structure could not be observed due to heavy silting and limited underwater visibility. Despite this, the islet appears to be entirely artificial.

A single, possibly medieval, pottery sherd was recovered to the west of the islet, and historic materials (a wooden bucket with metal hoops and glass bottles) were also observed. A single piece of roundwood was observed running horizontally from under the stones at the base of the islet just to the west of the causeway. This piece of roundwood was sampled for radiocarbon dating but was found to be modern (1670-1955 cal AD). It is likely that more materials remain around the site but are deeply buried in sediments.

Although there does appear to be a shallowing between the two islets, heavy weed growth obscured any further understanding of the relationship between the two. Both islets appear of probable prehistoric date but require further work to determine with any certainty.

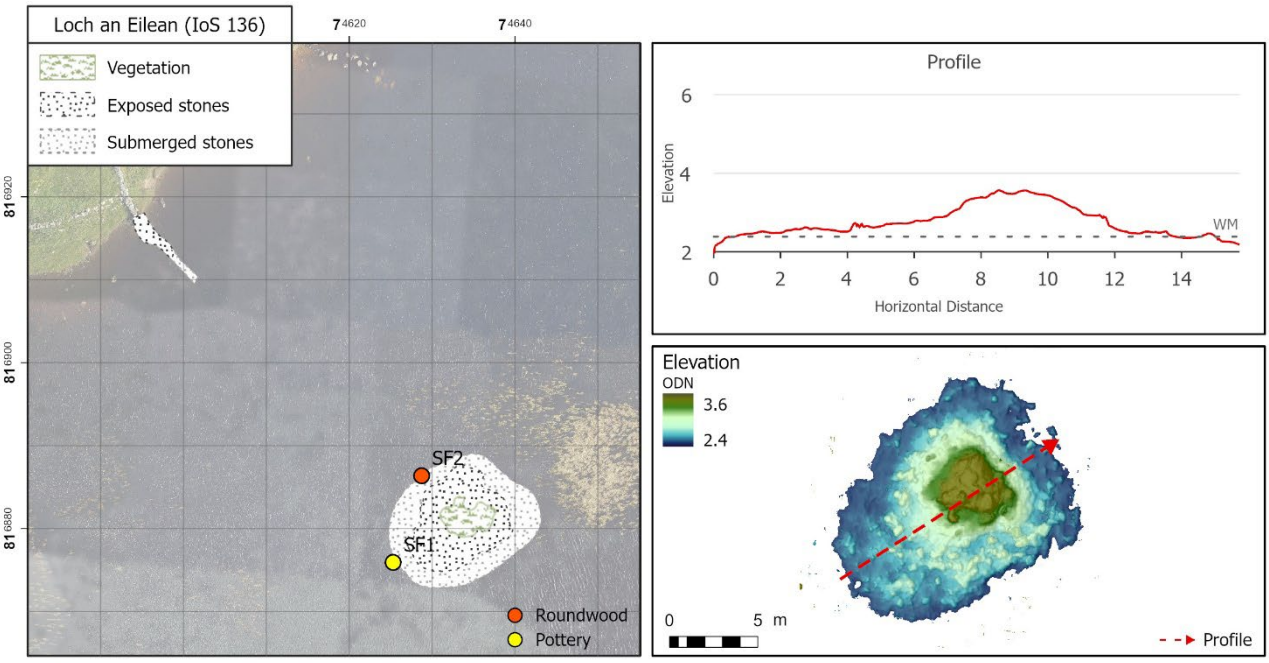


FIG 59. DIGITISED ISLAND (WITH LOCATION OF FINDS) AND ELEVATION PROFILE OF LOCH AN EILEAN (IOS 136) DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

## SITES IDENTIFIED THROUGH MACHINE LEARNING

**ML 1, Loch Shior Thomais**

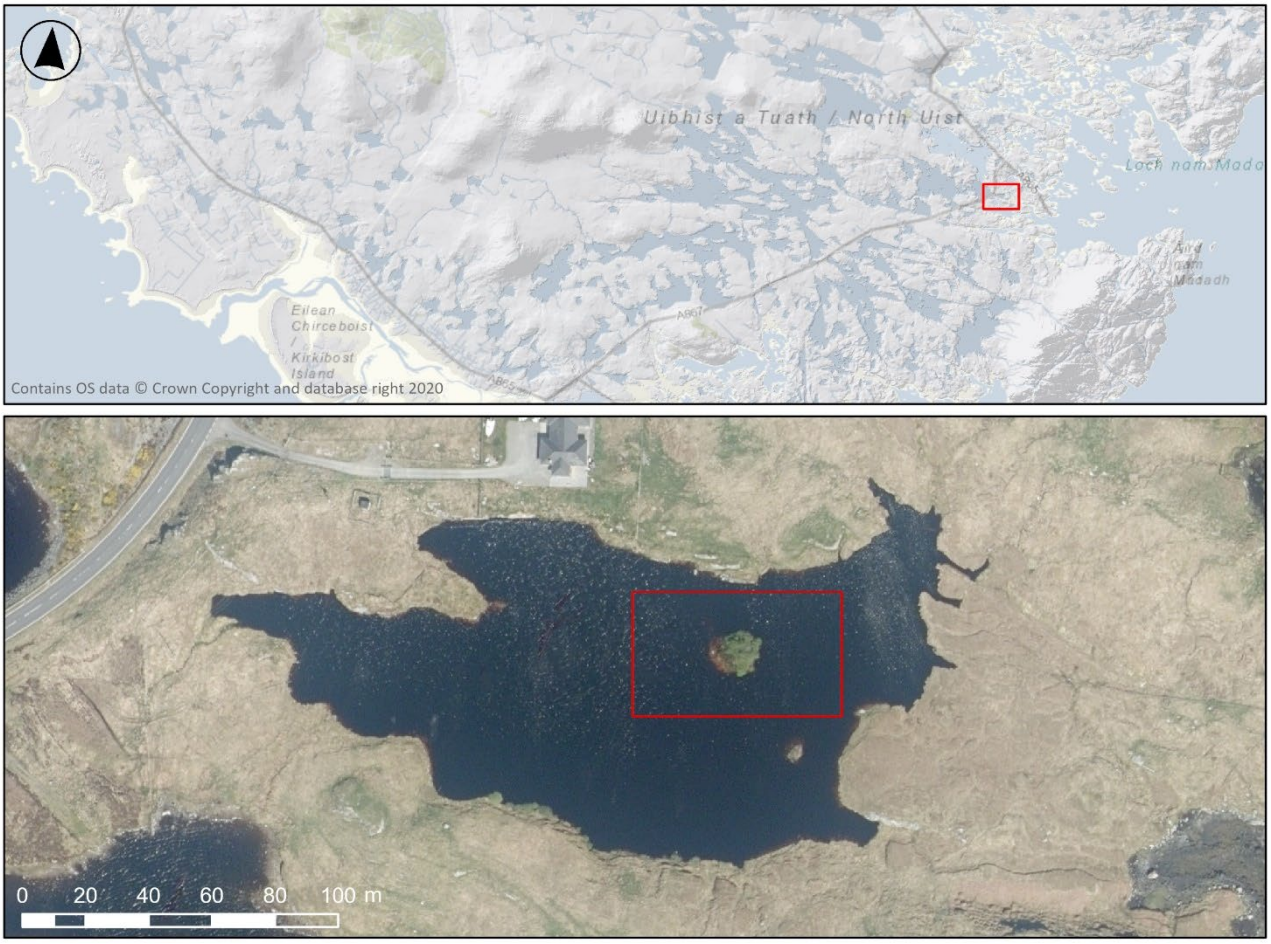


FIG 60. LOCATION OF LOCH SHIOR THOMAIS

| | |
|---|---|
| **Site name:** | ML 1 |
| **Loch name:** | Loch Shior Thomais |
| **Canmore ID:** | n/a |
| **Grid Reference:** | NF 90977 68439 |
| **Island:** | North Uist |
| **Date(s) visited:** | 12/07/22 |
| **Activities undertaken:** | Snorkel survey |
| **Islet description:** | ▪ 12x14m diameter (extent visible above July 2022 loch level)<br>▪ Natural islet formed from large outcrop of boulders (some with large quartz veins) and covered in dense vegetation |
| **Loch description:** | Small, deep loch that drops away steeply around natural islet. |
| **Sediment description:** | Coarse-grained sands and grits observed where visible. |
| **Archaeological materials:** | None |
| **Remaining questions:** | n/a |
| **Canmore URL:** | n/a |

**ML 2, Gunisary Bay**

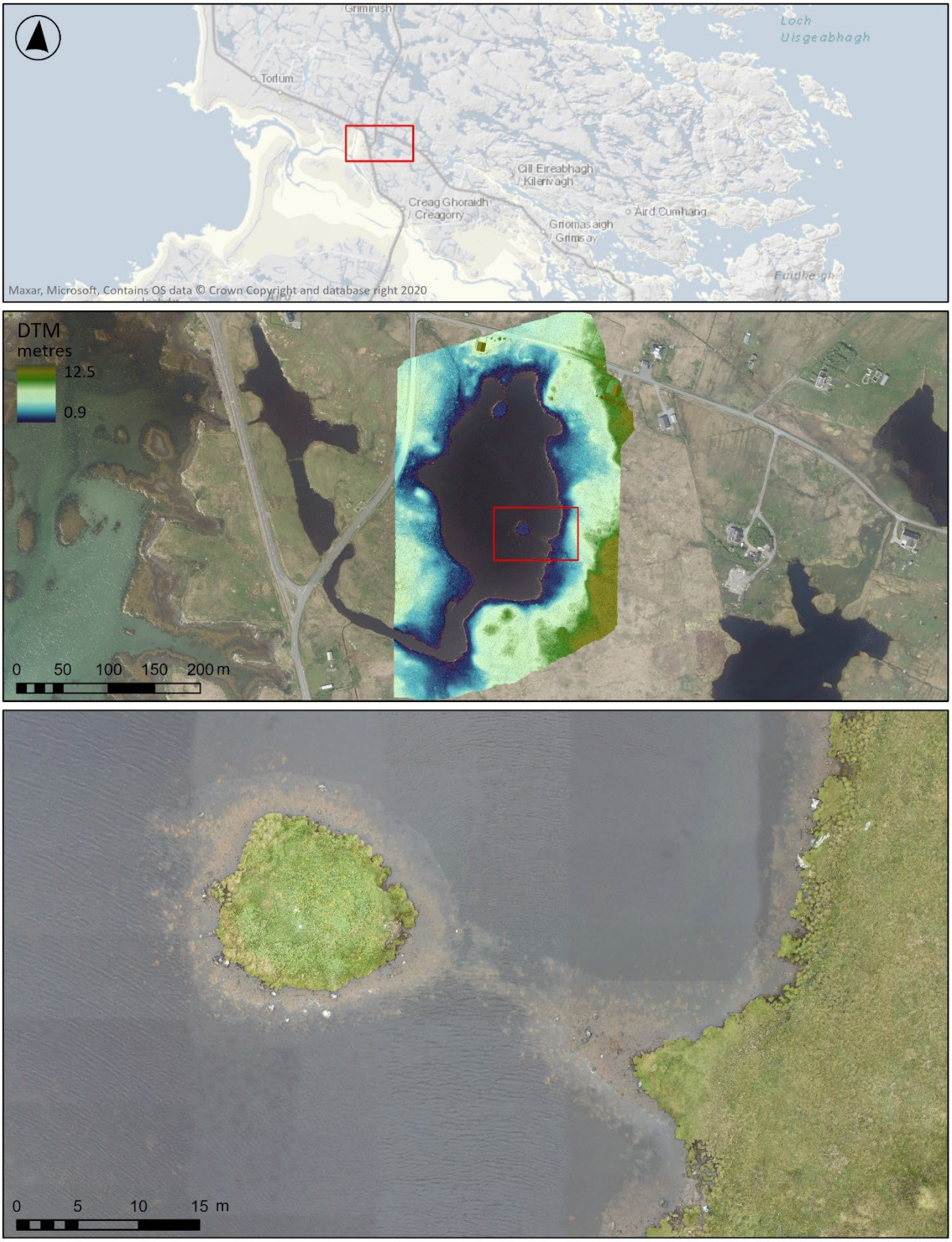


FIG 61. LOCATION OF GUNISARY BAY (UNRECODED NATURAL ISLAND)

| | |
|---|---|
| **Site name:** | ML 2 |
| **Loch name:** | Gunisary Bay |
| **Grid Reference:** | NF 79853 49167 |
| **Island:** | Benbecula |
| **Canmore ID:** | n/a |
| **Date(s) visited:** | 11/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry |
| **Islet description:** | ▪ 13.5x15.5m diameter (extent visible above July 2022 loch level)<br>▪ Natural islet with submerged (possibly artificial) causeway |
| **Loch description:** | Brackish, peat-stained loch filled with alluvial deposits. Shallow loch with consistent depth around islet (< 0.5m) but limited visibility. |
| **Sediment description:** | Natural islet formed from eroded headland/soil material. |
| **Archaeological materials:** | None |
| **Remaining questions:** | n/a |
| **Canmore URL:** | n/a |

**ML 3, Loch na Chraoibh Moire**


FIG 62. LOCATION OF LOCH NA CHRAOIBH MOIRE

| | |
|---|---|
| **Site name:** | ML 3 |
| **Loch name:** | Loch na Chraoibh Moire |
| **Canmore ID:** | n/a |
| **Grid Reference:** | NF 80603 49375 |
| **Island:** | Benbecula |
| **Date(s) visited:** | 11/07/22 |
| **Activities undertaken:** | Snorkel survey |
| **Islet description:** | ▪ 12x12m diameter (extent visible above July 2022 loch level)<br>▪ Natural island built on natural rise and outcropping rock<br>▪ Modified with portable stones around its perimeter |
| **Loch description:** | Shallow loch (c. 1m depth) around the site. |
| **Sediment description:** | Fine-grained sediments building up against margins, coarse-grained sands and grits over rest of site. |
| **Archaeological materials:** | None |
| **Remaining questions:** | n/a |
| **Canmore URL:** | n/a |

**ML 4, Loch na Creige Glaise**

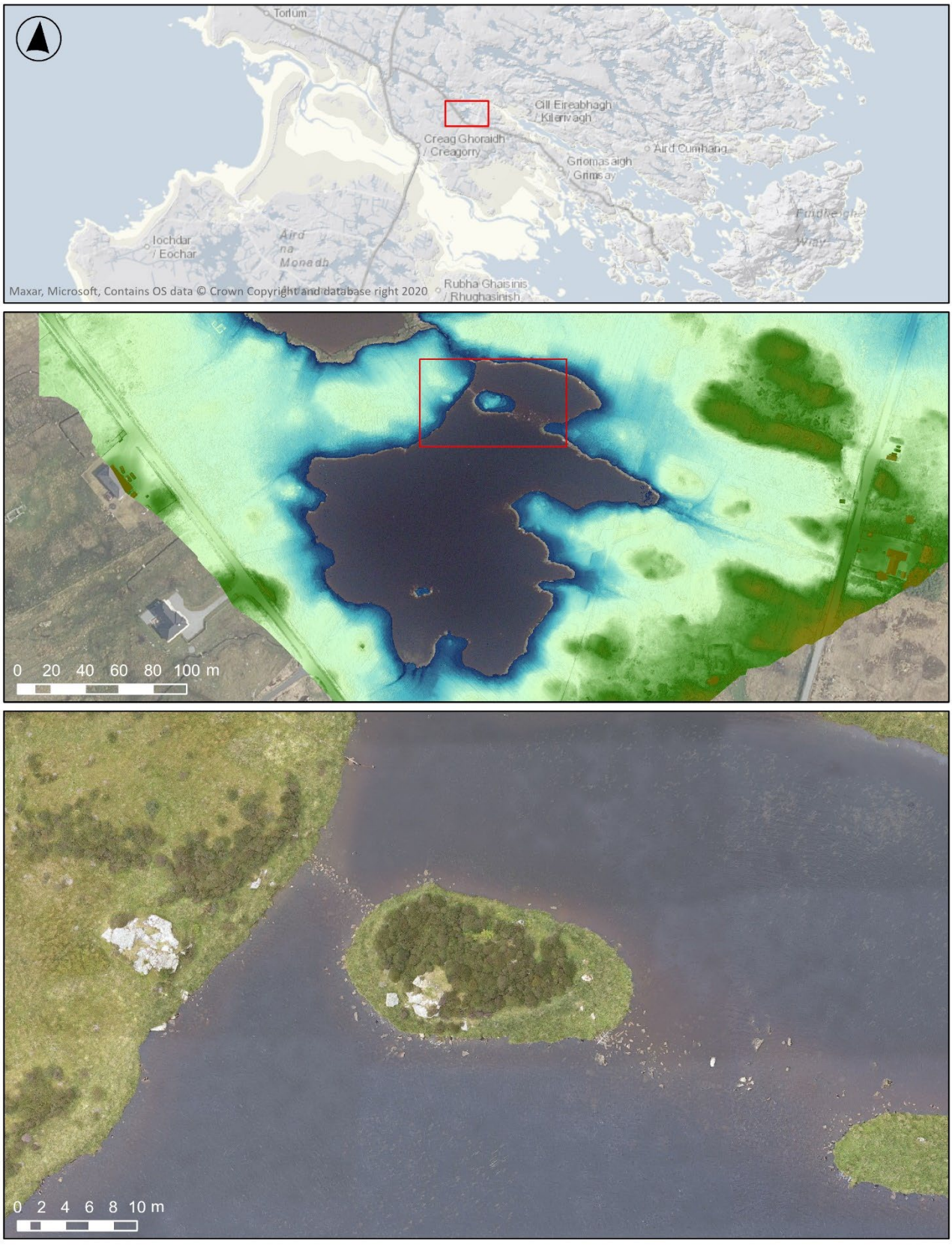


FIG 63. LOCATION OF LOCH NA CREIGE GLAISE

| | |
|---|---|
| **Site name:** | ML 4 |
| **Loch name:** | Loch na Creige Glaise |
| **Canmore ID:** | n/a |
| **Grid Reference:** | NF 81184 48478 |
| **Island:** | Benbecula |
| **Date(s) visited:** | 11/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry |
| **Islet description:** | ▪ 12x24.5m diameter (extent visible above July 2022 loch level)<br>▪ Natural islet with some modification<br>▪ Two causeways from either end of islet (west and east) creates bridge across loch<br>▪ Second island in loch was also investigated and found to be natural |
| **Loch description:** | Shallow loch comprised of coarse-grained sands and grits. |
| **Sediment description:** | Fine grained sediments building up against the causeway, coarse grained sands and grits over rest of site. |
| **Archaeological materials:** | Historic materials (e.g. bottles, willow pattern plates) were observed. |
| **Remaining questions:** | n/a |
| **Canmore URL:** | n/a |

**ML 5, Big Fish Loch**

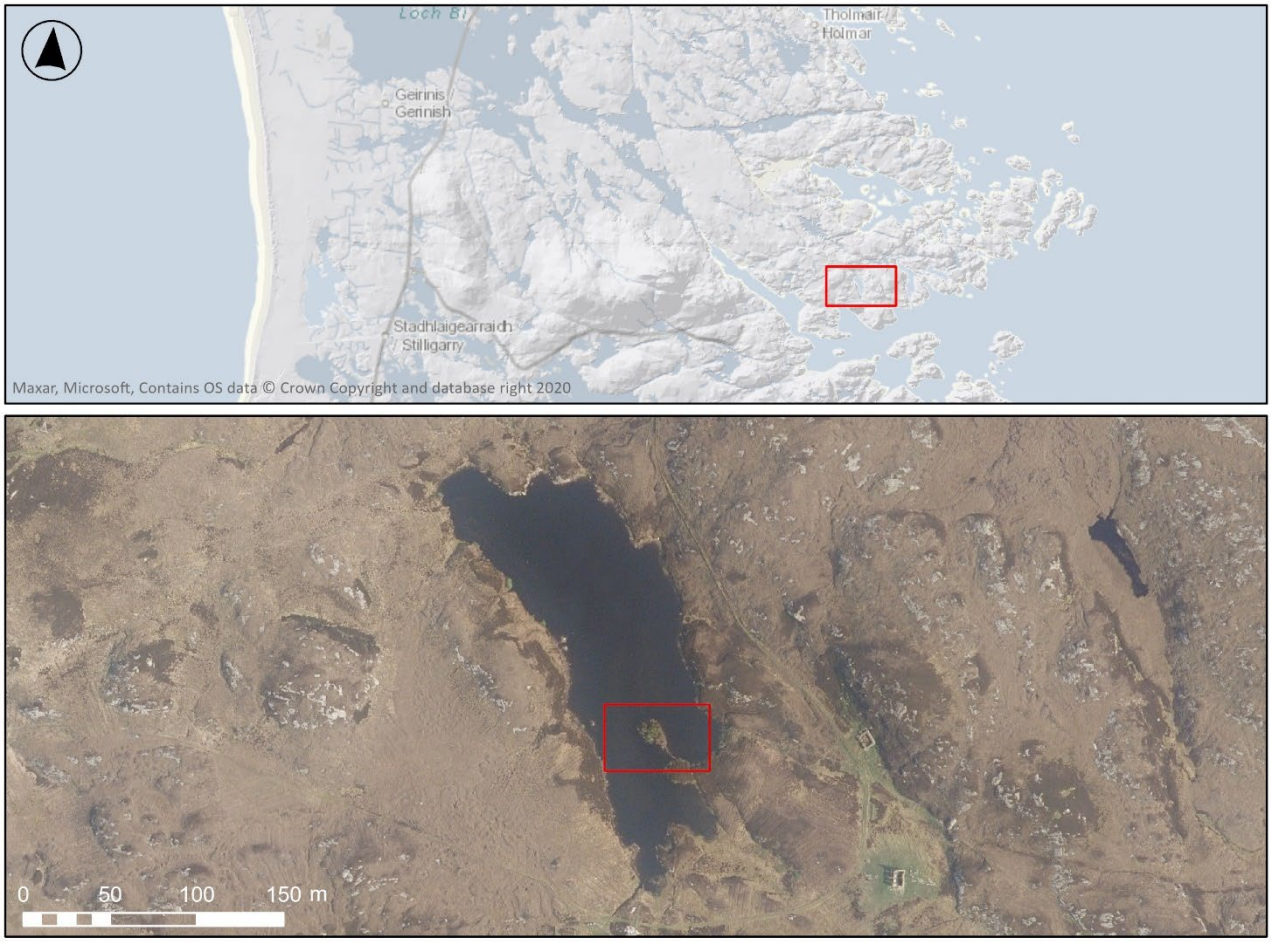


FIG 64. LOCATION OF BIG FISH LOCH

| | |
|---|---|
| **Site name:** | ML 5 |
| **Loch name:** | Big Fish Loch |
| **Canmore ID:** | n/a |
| **Grid Reference** | NF 83663 39364 |
| **Island** | South Uist |
| **Date(s) visited:** | 11/07/22 |
| **Activities undertaken:** | Snorkel survey |
| **Islet description:** | ▪ 10.5x19.5m diameter (extent visible above July 2022 loch level)<br>▪ Natural islet with some modification/activity<br>▪ Short causeway connects islet to the southeast shore |
| **Loch description:** | Shallow loch with some weeds. |
| **Sediment description:** | Coarse-grained sands and grits where observed. Fine-grained sediments building up against the causeway. Vegetation and silting around islet. |
| **Archaeological materials:** | No materials were found. |
| **Remaining questions:** | n/a |
| **Canmore URL:** | n/a |

**ML 6, Unnamed loch near Loch Airigh Ard**


FIG 65. LOCATION OF UNNAMED LOCH AND ISLAND NEAR LOCH AIRIGH ARD

| | |
|---|---|
| **Site name:** | ML 6 |
| **Loch name:** | n/a |
| **Canmore ID:** | n/a |
| **Grid Reference:** | NF 83848 39736 |
| **Island:** | South Uist |
| **Date(s) visited:** | 11/07/22 |
| **Activities undertaken:** | Snorkel survey |
| **Islet description:** | ▪ 9x14m diameter (extent visible above July 2022 loch level)<br>▪ Natural islet covered in dense vegetation |
| **Loch description:** | Deep weed-filled loch. |
| **Sediment description:** | Loch bed sediments not observed due to depth of site and extensive weed coverage. |
| **Archaeological materials:** | No materials were found. |
| **Remaining questions:** | n/a |
| **Canmore URL:** | n/a |

**ML 7, Loch Deanadach**

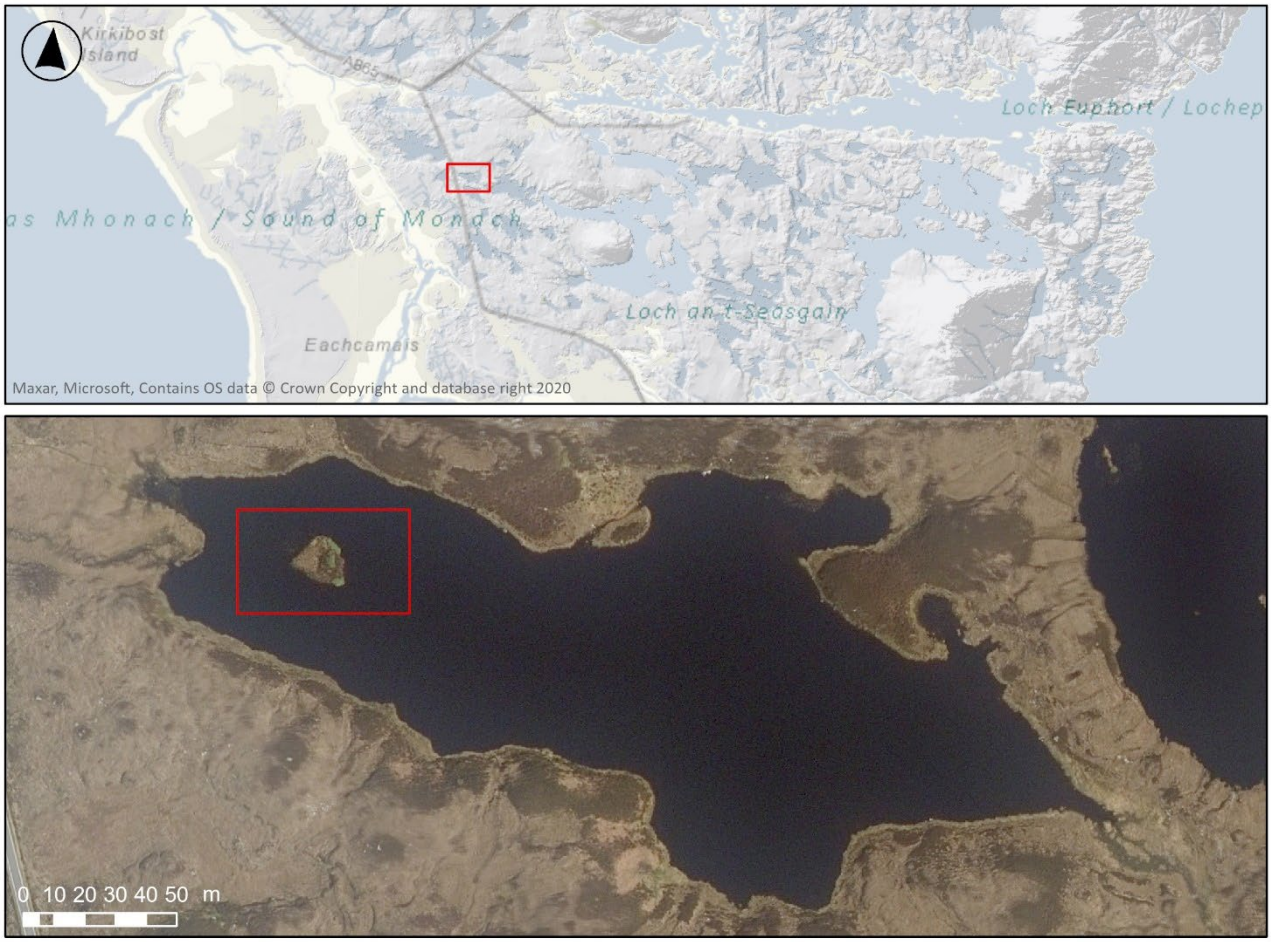


FIG 66. LOCATION OF LOCH DEANADACH

| | |
|---|---|
| **Site name:** | ML 7 |
| **Loch name:** | Loch Deanadach |
| **Canmore ID:** | n/a |
| **Grid Reference:** | NF 81711 62613 |
| **Island:** | North Uist |
| **Date(s) visited:** | 26/07/22 |
| **Activities undertaken:** | Snorkel survey |
| **Islet description:** | ▪ 10.5x19.5m diameter (extent visible above July 2022 loch level)<br>▪ Natural islet |
| **Loch description:** | Shallow loch with some silting and vegetation. |
| **Sediment description:** | Coarse grained sands and grits. Large quantities of quartz. |
| **Archaeological materials:** | No obviously worked quartz was observed. |
| **Remaining questions:** | n/a |
| **Canmore URL:** | n/a |

**ML 8, Ob Saile**

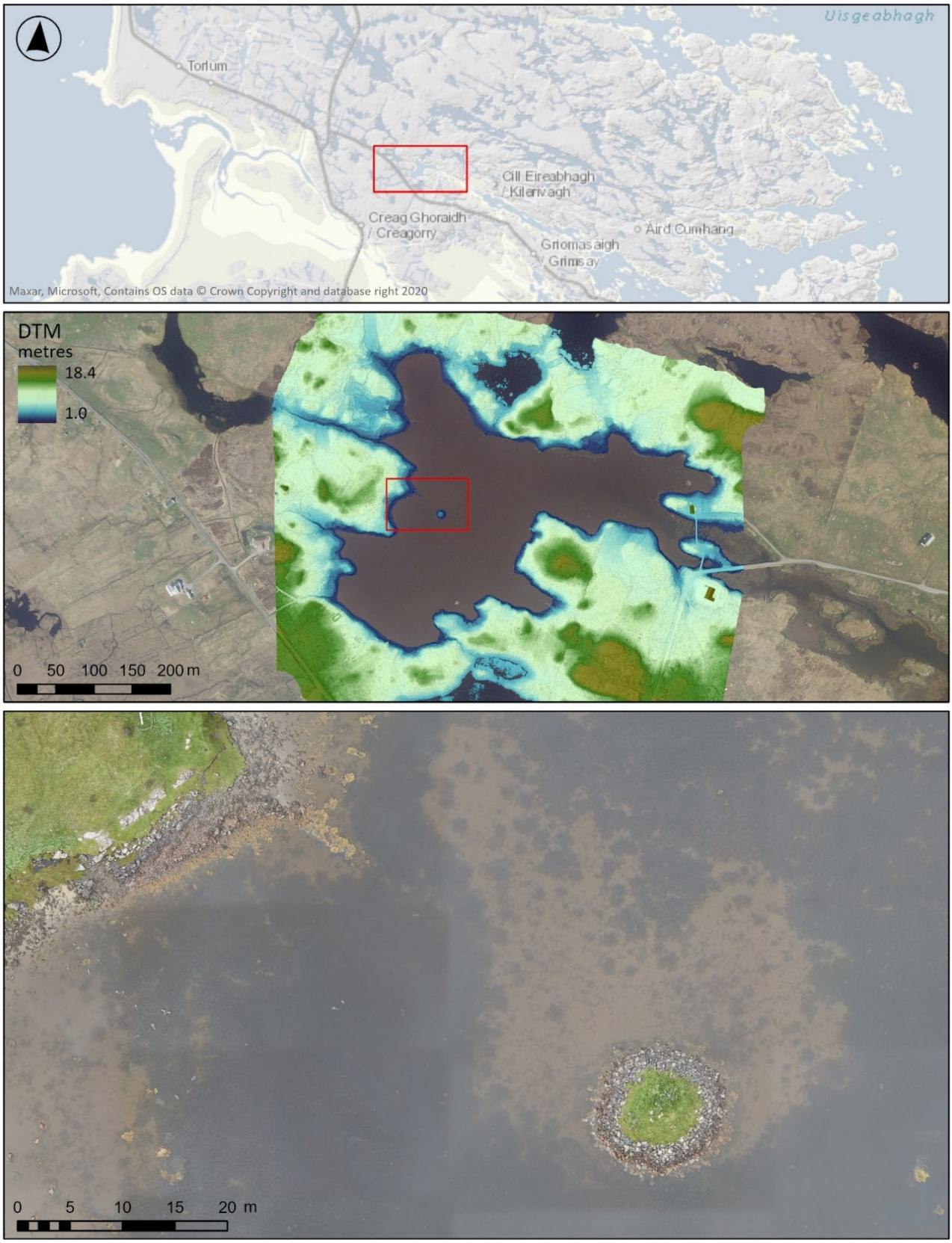


FIG 67. LOCATION OF OB SAILE

| | |
|---|---|
| **Site name:** | ML 8/Ob Saile |
| **Loch name:** | Ob Saile |
| **Canmore ID:** | 373291 |
| **Grid Reference:** | NF 81130 48686 |
| **Island:** | Benbecula |
| **Date(s) visited:** | 11/07/22, 27/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry |
| **Islet description:** | ▪ 12x12.5m diameter (extent visible above July 2022 loch level)<br>▪ 1.3m above loch level<br>▪ Artificial islet comprised of portable stones<br>▪ Causeway identified running northwest from islet to shore |
| **Loch description:** | Shallow inter-tidal loch (c. 0.5m depth); deep alluvium across entire loch, obscuring deposits. |
| **Sediment description:** | Deep alluvium built up against islet and silty water limited visibility of any underwater deposits. |
| **Archaeological materials:** | Large sherds of early Iron Age pottery were found in the submerged margins of the islet along with burnt bones. |
| **Remaining questions:** | While the artificiality and date of the site are now clear, its construction is heavily obscured by alluvial deposits. |
| **Canmore URL:** | https://canmore.org.uk/site/373291/ |

Ob Saile is a shallow inter-tidal loch located towards the south coast of Benbecula. The loch is filled with deep alluvial deposits obscuring underwater visibility. The islet is connected to the western shore of the loch via a largely obscured c. 39m causeway that extends from the northwest edge of the islet. The causeway is heavily sedimented and was only recognised upon inspection of the loch shore and the aerial imagery collected. The islet is nearly circular (c. 12m in diameter) and comprised of portable stones that rise c. 1.3m above the loch surface. Although the loch is filled with deep alluvial deposits, the artificial

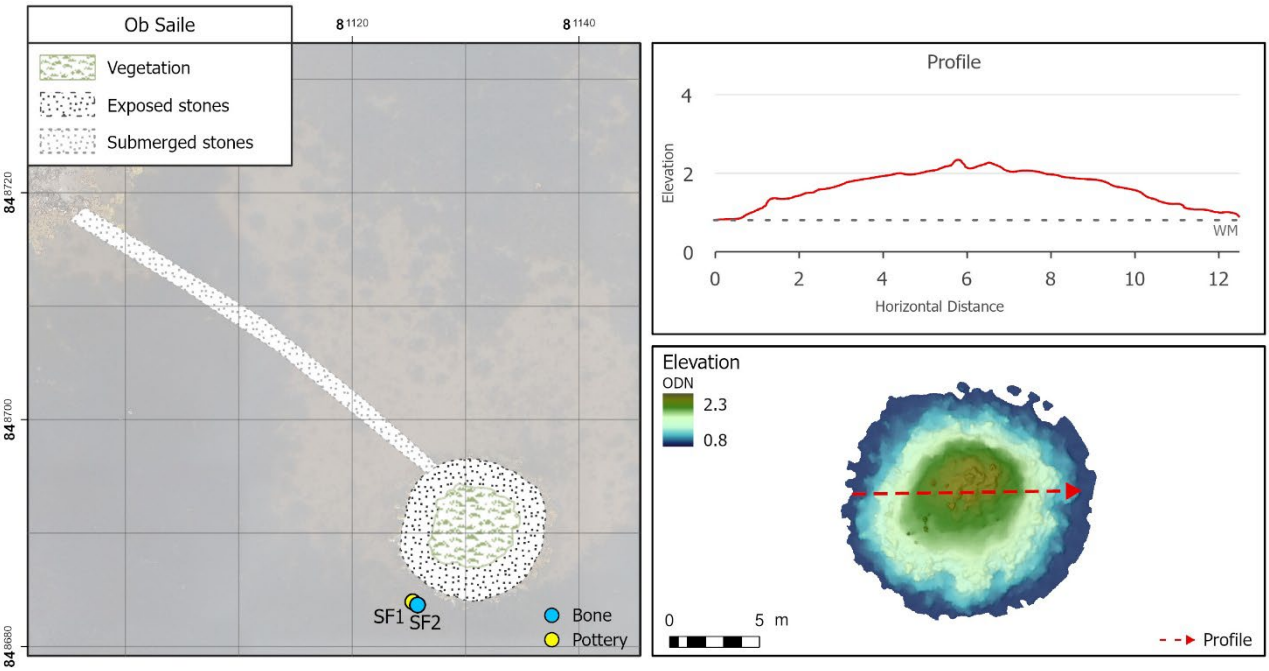


FIG 68. DIGITISED ISLAND (WITH LOCATION OF FINDS) AND ELEVATION PROFILE OF OB SAILE DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

nature of the islet is clear. Due to limited underwater visibility, fingertip inspection was employed around the site, and portable stones were also noted around the perimeter the islet.

Sampling through deposits around the islet indicated c. 50cm of alluvium over a peat fragmented deposit, leading into archaeological material. Iron Age pottery, including a largely intact flat bottomed vessel with an incised cross and grass markings on its exterior bottom, was recovered along with animal bones (Fig 70). Residue from the vessel was radiocarbon dated to 380-200 cal BC, while the mandible was dated to 730-400 cal BC. While the artificiality of and Iron Age activity at this islet are now clear, any further understanding of the construction and use of this site would require more invasive inspection through the deep alluvial deposits. Further, given the dynamic nature of the loch and its current connection to the sea via a small channel to the east, the site would benefit from environmental work to understand loch levels during prehistory.

FIG 69. POTTERY AND MANDIBLE RECOVERED FROM OB SAILE

## IRON AGE/MEDIEVAL STRUCTURES VISITED

These islets form a separate group of sites that despite having clear Iron Age or medieval structures on their surface were investigated nonetheless, due to their location in lochs that also contained sites on our main survey list. Two sites are scheduled monuments (Dun Torcuill and Dun Ban), and in all cases the islets were snorkelled and the construction and any visible materials observed.

**Dun Torcuill (IoS 20)**

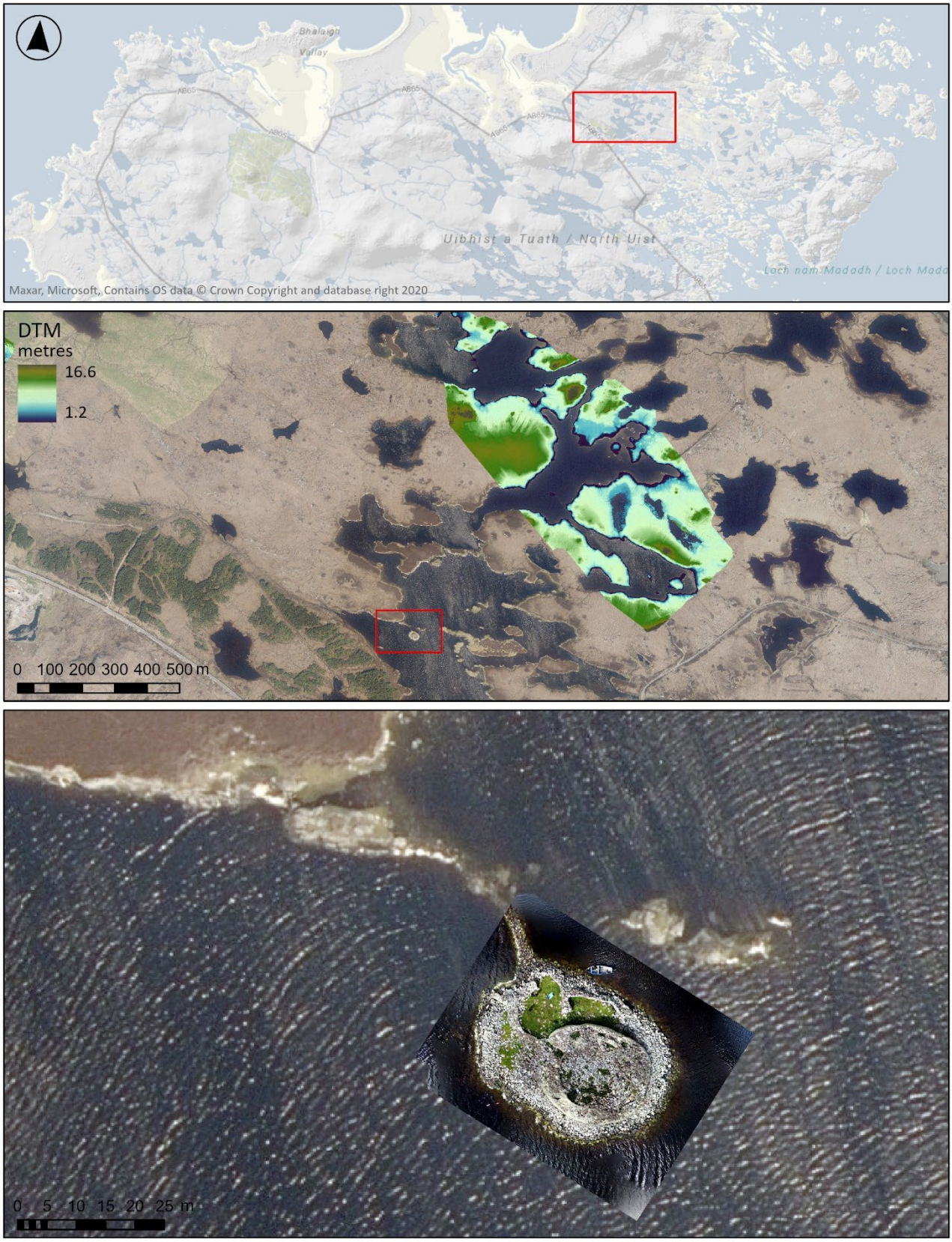


FIG 70. LOCATION OF DUN TORCUILL IN LOCH AN DUIN

| | |
|---|---|
| **Site name:** | Dun Torcuill (IoS 20) |
| **Loch name:** | Loch an Duin |
| **Canmore ID:** | 13064 |
| **Grid Reference** | NF 88888 73729 |
| **Island** | North Uist |
| **Date(s) visited:** | 13/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry, sonar |
| **Islet description:** | ▪ 25x36m diameter (extent visible above July 2022 loch level)<br>▪ Substantially modified islet comprised of large stones built on natural bedrock in deep loch<br>▪ Large broch structure and later enclosure on islet |
| **Loch description:** | Shallow tidal loch marked by varying depths and erratic shoreline. The loch deepens quickly to the south of the islet (c. 4m). |
| **Sediment description:** | Loch bed sediments not observed due to depth of site. |
| **Archaeological materials:** | Abraded pottery sherds were noted amongst the submerged stones around the islet. |
| **Remaining questions:** | n/a |
| **Canmore URL:** | https://canmore.org.uk/site/10364/ |

Dun Torcuill is an Iron Age broch in Loch an Duin. Although the site was not a key target site within this project due to the heavy presence of Iron Age and later remains, which are likely to have obscured any trace of potential earlier remains, the site was also visited while inspecting several other islets in the same loch (see Loch an Duin, IoS 15, for description of loch). This brief inspection provided an opportunity to compare a substantial Iron Age islet with our sites of interest. This site was described in extensive detail by Beveridge (1911: 149-52) and as such only the underwater features will be described.

The islet is clearly a modified natural outcrop and snorkel inspection confirmed this, showing loch levels to drop in depth considerably (c. 4m) at only a short distance from the island. This is supported by sonar data collected around the islet. In addition, the site was quickly recorded through drone imagery and aerial photogrammetry survey, allowing a record of the site at this time as well as the generation of orthomosaics, DEMs and 3D models for future analysis and/or dissemination (Fig 72).

FIG 71. 3D MODEL OF DUN TORCUILL GENERATED FROM AERIAL PHOTOGRAMMETRY SURVEY

**Dun Ban (IoS 70)**


FIG 72. LOCATION OF DUN BAN IN LOCH CARABHAT

| | |
|---|---|
| **Site name:** | Dun Ban (IoS 70) |
| **Loch name:** | Loch Carabhat |
| **Canmore ID:** | 10261 |
| **Grid Reference:** | NF 84299 60880 |
| **Island:** | North Uist |
| **Date(s) visited:** | 12/07/22 |
| **Activities undertaken:** | Snorkel survey |
| **Islet description:** | ▪ 22x23m diameter (extent visible above July 2022 loch level)<br>▪ Substantially modified islet comprised of large stones piled steeply (perhaps on natural bedrock) in deep loch<br>▪ Large rectangular (late medieval?) structure on islet |
| **Loch description:** | Deep loch with erratic shoreline. The loch deepens quickly around the islet (c. 19m to the south and c. 14m to the north). |
| **Sediment description:** | Loch bed sediments not observed due to depth of site. |
| **Archaeological materials:** | A small globular jar (likely medieval) was observed amongst the stones to the south of the islet. |
| **Remaining questions:** | n/a |
| **Canmore URL:** | https://canmore.org.uk/site/10261/ |

Dun Ban is a medieval structure on an islet in Loch Carabhat. The site was not a key target site within this project given the substantial medieval structures that exist on its surface, which suggest that even if earlier Neolithic phases exist they are well obscured. However, it was visited while surveying another islet of interest in Loch Carabhat (see Loch Carabhat, IoS 69 for description of loch). Dun Ban was described in extensive detail by Beveridge (1911, 178-80) and as such only the underwater features will be reported on here.

The islet is surrounded by deep water and the face of the stone structure underwater is nearly vertical. The base of this structure (perhaps a natural outcrop or shallowing) must reside at a good depth (> 5m) as it could not observed on snorkel even with several meters of good visibility. A bathymetric survey by Murray and Pullar (1904) shows water depths drop to 14m to the north and 19m to the south at only a short distance from the islet. Beveridge (1911, 178) was assured of the existence of a causeway; however, this is unlikely as firstly no causeway was observed and secondly the depth of the loch between the islet and shore drops to around 29m according to Murray and Pullar's survey. Hence even if loch levels were much lower at the time of islet construction, it would still have been impossible to construct a causeway across this channel.

To the south of the islet an intact small globular (possibly medieval) jar was observed amongst the stones; it was not collected since the site is a scheduled monument. Overall, this survey confirmed that this site is outside our scope of interest.

**Dun na Cille (IoS 133)**

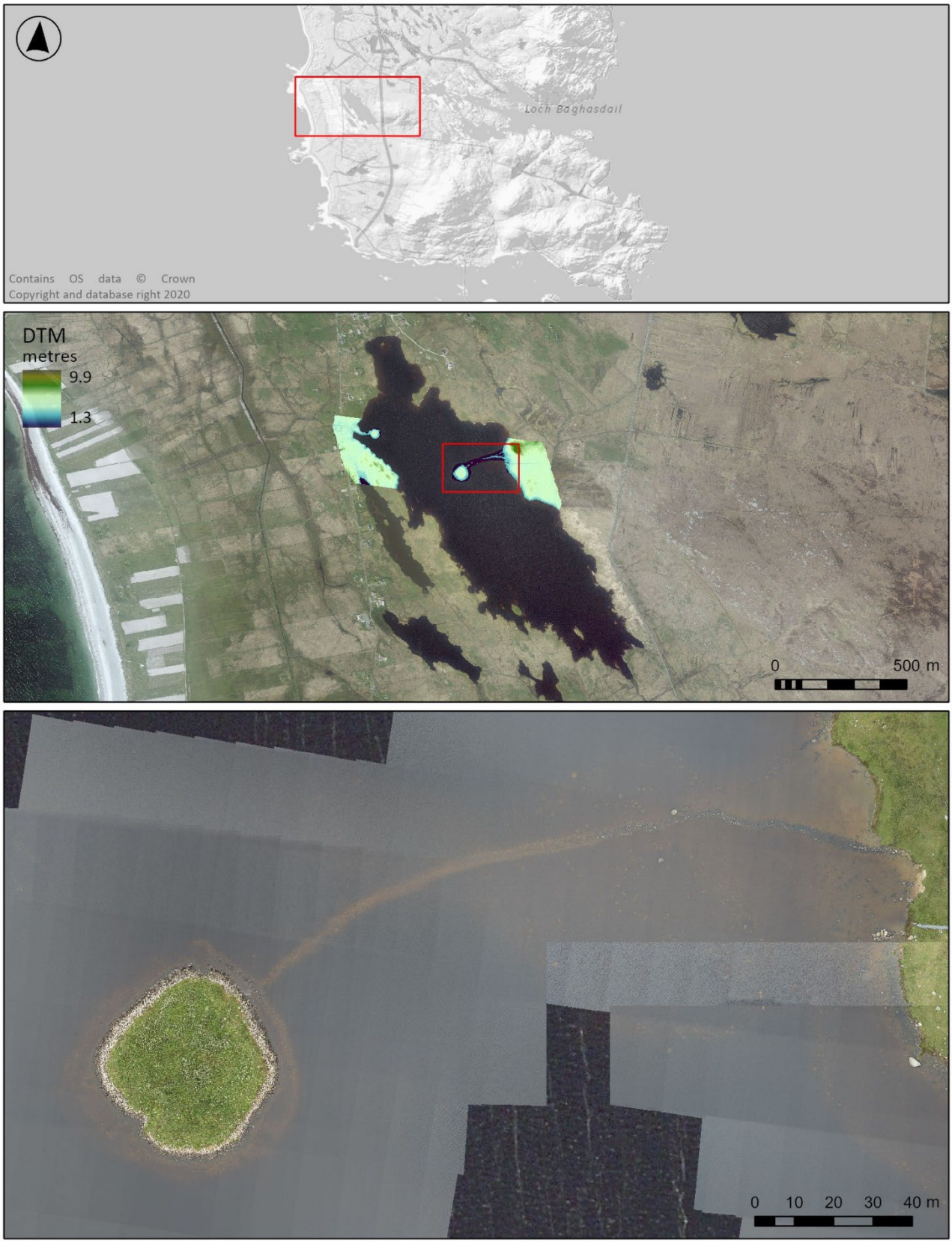


FIG 73. LOCATION OF DUN NA CILLE

| | |
|---|---|
| **Site name:** | Dun na Cille (IoS 133) |
| **Loch name:** | Loch Dun na Cille |
| **Canmore ID:** | 9788 |
| **Grid Reference:** | NF 74610 19050 |
| **Island:** | South Uist |
| **Date(s) visited:** | 21/07/22 |
| **Activities undertaken:** | Snorkel survey, aerial photogrammetry, LiDAR survey, sonar |
| **Islet description:** | ▪ 46x46m diameter (extent visible above July 2022 loch level), with visible submerged stones extending between c. 4.5-9m from exposed edge of islet<br>▪ c. 3.9m height (above July 2022 loch level)<br>▪ Artificial or substantially modified islet comprised of portable stones with larger boulders in places around underwater perimeter |
| **Loch description:** | Deeper loch with depth of around 2.5m around islet. |
| **Sediment description:** | Course-grained sediments with minimal silting. |
| **Archaeological materials:** | Large quantity of rounded stone/quartz pebbles (similar to IoS 132) were observed in the shallows around the islet. |
| **Remaining questions:** | The site has been well characterised through this and previous inspections. If any prehistoric remains exist, they are well buried by later activity. |
| **Canmore URL:** | https://canmore.org.uk/site/9788/ |

Dun na Cille is the second island in its namesake of Loch Dun na Cille (see Eilean Chreamh, IoS 132 for description of loch). The islet is connected to the eastern shore via a long, curving causeway, which measures around 160m in length and 3.5m in width. The islet is large and circular, measuring c. 46m in diameter, and rising around 2.5m from the loch surface. Much like Eilean Chreamh, a submerged ring of stone is visible around the perimeter of the island, ranging in width from 4m to 7m and sitting at a depth of about 1m. Beyond these stones, the loch deepens gradually, with a max depth of c. 1.5m at a distance of around 10m from the islet's margin. At this point the loch bed is covered in smaller portable stones, perhaps the remnants of the islet structure but obviously not natural. The island thus appears entirely artificial, comprised of larger stones at the base and topped with smaller portable stones which form the submerged perimeter and surface of the island. These stones appear to reside on medium- to course-grained sediments which are overlain by minimal silting.

To the north of the island a harbour like feature formed of larger boulders was noted. This is congruent with an RCAHMS survey from 1928 (Canmore). Larger boulders were also noted to the east of the island and appear to form a second ring or wall around the eastern perimeter of the island. To the southwest a boat naust cut into the submerged stone and perimeter of the island was also observed (see Fig 74 bottom right). The islet is recorded as supporting a medieval dun or chapel (Canmore), the remnants of which are visible in the digital elevation model generated from the photogrammetry survey (Fig 74 - bottom right).

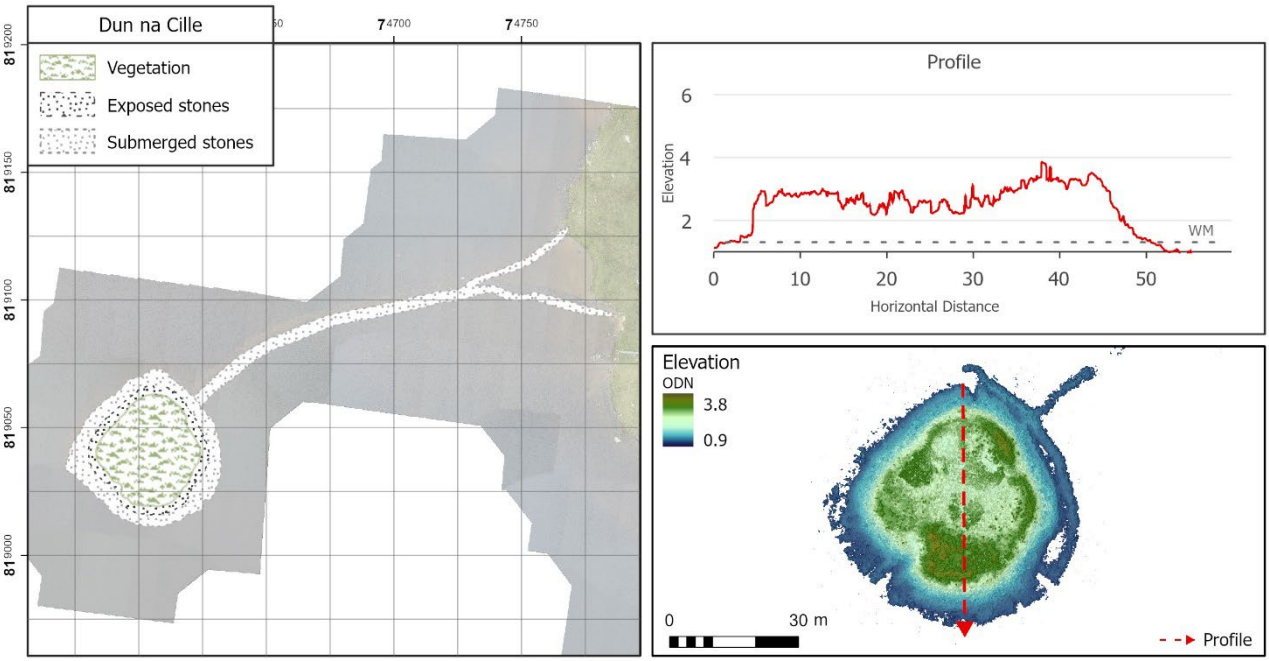


FIG 74. DIGITISED ISLAND (WITH LOCATION OF FINDS) AND ELEVATION PROFILE OF DUN NA CILLE DERIVED FROM AERIAL PHOTOGRAMMETRY SURVEY

Amongst the submerged stone perimeter and the rubble of stone on the loch bed, large quantities of rounded stones, predominately quartz, were observed. These are similar to the rounded quartz objects also seen in large quantity around Eilean Chream and other crannogs. No other materials were observed, but a fine silt covering the stones may have obscured any additional remains. Observations appear to confirm the medieval nature of the island, and if any earlier remains do exist they are likely well obscured by later activity.

# 6. SPECIALIST REPORTS

## POTTERY

*Mike Copper*

**Introduction**

This report presents a characterisation of thirteen ceramic assemblages from the islands of South Uist, North Uist and Benbecula recovered from the beds of freshwater lochs around a series of small, mostly artificial islets during the summer of 2022 as part of the *Islands of Stone* project. Analysis was undertaken by Dr Mike Copper at the University of Bradford during the autumn and winter of 2022.

*A note on methodology and nomenclature*

Assessing vessel numbers presents significant challenges when dealing with hand-built, open-fired vessels made of local clay and tempered with local rock, as all known Outer Hebridean prehistoric and medieval vessels were. In the Western Isles, the tempering materials derive overwhelmingly from the islands' ubiquitous igneous gneiss, which means that fabric often varies little from site to site and over several millennia. To avoid overestimating vessel numbers, the approach taken during analysis firstly involved assigning sherds to **sherd groups** on the basis of form, colour, fabric, decoration or physical association. Each sherd group represents a group of sherds considered *more likely than not* to represent parts of the same vessel. **Vessel numbers** were then assigned to sherd groups considered *more likely than not* to derive from the same pot. In cases where it was not possible to determine which vessel a sherd group belonged to then it was recorded as '*Vessel Uncertain'*. In this way, overestimation of vessel numbers could be avoided. As a result, a hierarchical system of nomenclature is employed here: project/site/vessel/sherd (e.g. IoS22/Site 13/Vessel 2/Sherd 7). An overview of the assemblages recovered in 2022 is given in Table 2.

| Site name and *Islands of Stone* site number | Number of sherds | Minimum number of vessels | Total weight | Mean sherd weight | Date |
|---|---|---|---|---|---|
| **Dunan Dubh** IoS Site 12 | 1 | 1 | 1 | 1 | Uncertain |
| **Loch nan Gearrachan** IoS Site 13 | 1 | 1 | 8 | 8 | Uncertain |
| **Loch an Duin** IoS Site 15 | 10 | 1 | 178 | 17.8 | Early Iron Age* |
| **Loch nan Clachan** IoS Site 18 | 15 | 6 | 370 | 24.67 | Neolithic* |
| **Ormacleit** IoS Site 22 | 19 | 5 | 265 | 13.94 | Late Bronze Age/Early Iron Age |
| **Tobha Bheag** IoS Site 115 | 48 | 4 | 635 | 13.23 | Early Iron Age* |
| **Eilean an t-Sagairt** IoS Site 116 | 41 | 1 | 1636 | 39.9 | Neolithic |
| **Kildonan** IoS Site 126 | 87 | 15 | 1857 | 21.34 | Neolithic |

| | | | | | |
|---|---|---|---|---|---|
| **Mingearraidh** IoS Site 128 | 3 | 1 | 55 | 18.33 | Iron Age |
| **Eilean Chreamh** IoS Site 132 | 72 + 202g of very small fragments | 2 | 2492 | 32.25 (excluding fragments) | Mid/Late Iron Age* |
| **Loch an Eilean** IoS Site 135 | 11 | 1 | 121 | 11 | Early Iron Age |
| **Loch an Eilean** IoS Site 136 | 1 | 1 | 30 | 30 | Medieval* |
| **Ob Saile** IoS Site ML8 | 38 | 1 | 615 | 16.18 | Early/Mid Iron Age* |

TABLE 2. SUMMARY OF CERAMIC ASSEMBLAGES FROM UIST LOCHS (IOS22). N.B. DATES MARKED WITH AN ASTERISK ARE SUPPORTED BY DIRECT RADIOCARBON DATING ON ORGANIC RESIDUES

**The Pottery**

Fabrics

The opening agents used in the pottery from all thirteen sites are, with the exception of just two sherds from Ormacleit, very similar in character and, as with previous assemblages associated with Outer Hebridean loch islets, are consistent with derivation from local igneous gneiss, the principle rock type across most of the Western Isles. The main minerals present are feldspar and quartz together with small quantities of biotite (the latter constituting less than 5% of the mineral inclusions). The fabrics form a continuum from fine to coarse. As a result, the divisions between the categories employed here are of necessity somewhat arbitrary. As the colours of many of the sherds have been significantly affected by the environment of the loch bed—notably by algal growth—as well as by the nature of firing and use, colour provides a poor basis for identifying sherd groups. It is of significance, however, that the pale colour of most of those sherds that have been less affected by their depositional context is suggestive of open firing in an oxygen-rich environment. This applies to all of the vessels examined in 2022.

The nature of the inclusions in the pottery described below suggests that it was added by the potters rather than being present within the natural clay itself. It is interesting to note that sand often forms small beaches around the edges of freshwater lochs in the Western Isles, often being naturally sorted by wave action into coarser and finer fractions. Free from the fragments of shell found on coastal beaches, which can cause pots to break after firing due to 'lime blowing' (Gibson and Woods 1997: 203), this readily available source of temper is not only unlikely to have been ignored by prehistoric potters in the Outer Hebrides but also closely resembles the inclusions found in prehistoric Hebridean pottery in particle size and structure, suggesting that this is the most likely source of temper employed throughout prehistory. Experimental work by the present author using this sand and 'wild' Hebridean clay has shown it to be an excellent tempering material for potters making and open-firing hand-built vessels.

The fabric types employed during analysis were as follows (terms used correspond to the definitions employed by the Prehistoric Ceramics Research Group (PCRG 2011)). The categories correspond to those employed in previous analyses undertaken as part of the *Islands of Stone* project. No vessels recovered in 2022 were of Fabric 4 (assigned to sherds analysed in previous years).

> Fabric 1: Fine, well-fired clay varying from dark grey to pale earthy yellow and orange and containing common to very common (20%-40%) sub-rounded to sub-angular, well-sorted fine sand with rare larger fragments (<2mm across).
>
> Fabric 2: As Fabric 1, but with the addition of moderate (10%-20%) inclusions of up to 3mm (small granules). Inclusions in Fabric 2 are moderately sorted.

Fabric 3: Well-fired clay varying from dark grey to pale earthy yellow and orange, with common (20%-30%), moderate to poorly sorted, sub-rounded to sub-angular inclusions ranging in size from fine sand to sparse (<10%) granules of 3-4mm.

Fabric 5: Well-fired clay varying from dark grey to pale earthy yellow and orange, with common (20%-30%), moderate to poorly sorted, sub-rounded to sub-angular inclusions ranging in size from fine sand to sparse (<10%) granules of 3-4mm. Also, moderate (10%–20%) larger inclusions up to 15mm. The latter may include fragments of local rock in addition to individual minerals.

| Site | Fabric 1 | Fabric 2 | Fabric 3 | Fabric 5 |
|---|---|---|---|---|
| **Dunan Dubh** IoS Site 12 | 100% | | | |
| **Loch nan Gearrachan** IoS Site 13 | 100% | | | |
| **Loch an Duin** IoS Site 15 | 90% | | 10% | |
| **Loch nan Clachan** IoS Site 18 | 87.5% | 9.37% | 3.13% | |
| **Ormacleit** IoS Site 22 | 68.42% | 21.05% | | 10.53% |
| **Tobha Bheag** IoS Site 115 | 20.8% | 50% | 6.3% | 22.9% |
| **Eilean an t-Sagairt** IoS Site 116 | | 100% | | |
| **Kildonan** IoS Site 126 | 67.8% | 32.2% | | |
| **Mingearraidh** IoS Site 128 | 33.3% | 66.66% | | |
| **Eilean Chreamh** IoS Site 132 | | 100% | | |
| **Loch an Eilean** IoS Site 135 | 100% | | | |
| **Loch an Eilean** IoS Site 136 | | | 100% | |
| **Ob Saile** IoS Site ML8 | | 100% | | |

TABLE 3. FABRIC TYPES AS PERCENTAGE OF SHERDS (IOS 22)

**Assemblages by site**

**Dunan Dubh (IoS Site 12. Canmore 10367)**

A single, pale coloured sherd was recovered from Dunan Dubh. Beyond noting that it was likely from a hand-built and open-fired vessel there is little that can be inferred from this very small (1g) fragment.

**Loch nan Gearrachan (IoS Site 13. Canmore 10087)**

A single, highly abraded sherd (8g) was found at Loch nan Gearrachan. Having no visible decoration and providing no indication of vessel form there is little that can be said about this sherd beyond noting that it is likely from a hand-built and open-fired vessel.

**Loch an Duin (IoS Site 15. Canmore 10351)**

Ten sherds were recovered from Loch an Duin, probably representing two vessels. While two thick sherds (15 and 16mm) are likely to derive from a large vessel of uncertain form, the remainder are from a flat-based vertical- or splay-sided bowl. A radiocarbon date of 730–405 cal BC obtained from Vessel 1 indicates that this is an Early Iron Age pot. The similarity of the sherds to the vessel from Ob Saile (IoS ML8, described below), also dated to the Early Iron Age, is of note.

**Loch nan Clachan (IoS Site 18. Canmore 10094)**

Thirty-three sherds were recovered from Loch nan Clachan, representing a minimum of six vessels, all of which exhibit forms and decoration consistent with that recognised at mid- to late 4$^{th}$ millennium BC sites across the Western Isles, including at other Neolithic islet sites (Copper 2015; Copper 2017b; Garrow et al. 2017; Copper and Armit 2018). Five of the vessels whose form could be identified were jars, probably of baggy form, of which the single ridged example was decorated with a herringbone motif. The fact that some sherds from lower down the vessels' bodies were thick (<13mm) suggests that these vessels could have been quite deep (over c.30cm). Vessel 5 had a collared rim, a style that is well represented on Outer Hebridean Early Neolithic jars. A second jar (Vessel 4, Fig 75) appears to have been undecorated. While uncommon on vessels of this type, an undecorated baggy jar was also found at Tobha Bheag [Eilean an t-Sagairt] (IoS Site 116, see below). One sherd from an Unstan bowl (Fig 75) and a second from a shouldered bowl were also present. The latter type of vessel is of interest in that its form most likely derives from the Beacharra bowls that are well represented in Argyll and around the Firth of Clyde while its decoration of parallel lines over vertical or sloping lines is very strongly associated with Unstan bowls in both the Outer Hebrides and Orkney. Only in the Western Isles do these two features coincide, which may indicate a link between the two vessel forms.

FIG 75. RIM SHERD FROM UNDECORATED PROBABLE BAGGY JAR (VESSEL 4) LOCH NAN CLACHAN (SCALE: 5CM)

With the exception of the undecorated Vessel 4, it is likely that all of the Loch nan Clachan jars bore motifs made up of bands of sloping lines. On pottery found at other contemporaneous sites in the Western Isles these usually form elements of herringbone motifs, and it is therefore most likely that this was also the case at Loch nan Clachan. The sloping, vertical or 'diagonally radiating' lines on the rims of the Loch nan Clachan jars are also well represented elsewhere in the Western Isles.

Two radiocarbon dates were obtained from organic residues on sherds from Loch nan Clachan. Vessel 1 (the shouldered bowl) returned a date of 3484–3109 cal BC, and Vessel 2 (of uncertain form) returned a date of 3513–3362 cal BC. The pottery from Loch nan Clachan therefore joins a growing number of Early Neolithic assemblages associated with islets in the Outer Hebrides, its vessel forms and decorative motifs all fitting comfortably within the regionally distinctive Outer Hebridean Early Neolithic tradition.

FIG 76. UNSTAN BOWL SHERD (VESSEL 3) FROM LOCH NAN CLACHAN (SCALE: 5CM)

**Ormacleit (IoS Site 121. Canmore 270831)**

Nineteen sherds were recovered at Ormacleit, representing a minimum of five vessels. Most are severely abraded and exhibit no decorative or otherwise distinctive features indicative of age or style. While sherds from Vessels 3 and 4 are less abraded and have smoothed exteriors it is again difficult to attribute an age to them.

The two sherds representing Vessels 1 and 2 are of interest for their very coarse temper, which includes large fragments of feldspar or quartz and even of the metamorphic gneiss from which the individual mineral particles derive. This is suggestive of the use of crushed rock as temper rather than loch sand. Both sherds are thick (10mm and 14mm) and the rough and cracked exterior of the Vessel 1 sherd is reminiscent of the crudely made vessels recovered from Loch Duna (Ranish) and Loch Mor, both on the Isle of Lewis, previously reported on (Copper 2017a). In lieu of a radiocarbon date, it is therefore suggested here that these latter vessels are likely to be of Middle/Late Bronze Age or Early Iron Age date. While the presence of two highly abraded sherds cannot be used to date the whole Ormacleit assemblage without evidence of contemporaneity, these parallels for the time being represent the best evidence currently available for the age of the pottery from this site.

**Tobha Bheag (IoS Site 115. Canmore 270754)**

Forty-eight sherds were recovered from Tobha Bheag in Loch a'Phuirt-ruaidh, representing a minimum of four vessels, though the actual number is likely to be higher (the severely abraded nature of the remaining sherds means that it is not possible to say whether they came from the identified vessels or represent elements of further pots). Vessel 1 is a flat-based, vertical- or splay-sided pot with a flat rim and thick (<12mm) walls. Although finger indentations are visible on some of the Vessel 1 sherds, no decoration could be discerned, though whether this results from post-depositional abrasion is not possible to tell. Vessel 2 is represented by a single, very small (2g) and thin (4mm) sherd (Fig 77). It is considerably less

abraded than Vessel 1 and bears a single, short, impressed or incised line. This sherd is intriguing in that it does not resemble any other pottery recovered from the Uist Lochs in 2022. While evoking Beaker sherds from the Western Isles (e.g. Shepherd 1976), it is unfortunate that the limited evidence presented by the Vessel 2 sherd does not permit an unambiguous attribution to any particular ceramic style or age. Like Vessel 1, Vessels 3 and 4 are flat-based pots. However, the limited number of sherds and their severely abraded nature allows us to add little extra information beyond noting vessel form. The four remaining sherd groups cannot be matched with certainty to any of the identified vessels; they could potentially represent further vessels.

FIG 77. TOBHA BHEAG VESSEL 2 (SCALE: 3CM)

An organic residue radiocarbon date of 372–197 cal BC on Vessel 1 places this pot in the later part of the Early Iron Age. Comparable flat rimmed, undecorated vessels are known from Late Bronze Age and Early Iron Age sites in the Western Isles, including Cladh Hallan and the pre-broch midden at Dun Vulan (Parker Pearson and Sharples 1999: 50–2).

**Tobha Bheag [Eilean an t-Sagairt] (IoS Site 116. Canmore 270753)**

Forty-one sherds from a single vessel (Fig 77) were recovered from the loch bed close to Eilean an t-Sagairt, which lies just to the south of the islet of Tobha Bheag in Loch a'Phuirt-ruaidh. A substantial proportion (c.50%) of the vessel remains, made up of 41 sherds weighing a total of 1636 grams. Twenty-six of the sherds were unabraded or only slightly abraded, with the remainder being differentially abraded or exhibiting abrasion on all facets. The more abraded sherds were almost entirely thick sherds from the base of this round-bottomed baggy jar. The vessel was well-constructed and the paucity of dark wall cores, even on sherds 20mm thick, is indicative of skilful and thorough firing. Unlike many other sherds from the Uist lochs, the body of this vessel was pale in colour with little fire-clouding or sooting visible. Despite its size and thick base, the pot's fabric belonged to fabric group 2, which differs from the finest fabric only through the slightly larger size of some inclusions.

The vessel is an undecorated baggy jar with an everted and internally bevelled rim, a distinctive Neolithic form. Although unusual, vessels of this style lacking decoration are known from other Outer Hebridean Neolithic sites including Eilean Dòmhnuill (Vessels 144-147) and An Doirlinn where the ceramic assemblage was notably plainer than contemporaneous assemblages from elsewhere in the Western Isles (Copper 2017b; Copper forthcoming), as well as Loch nan Clachan (IoS site 18, reported on above).

FIG 78. LARGE, UNDECORATED BAGGY JAR (VESSEL 1) FROM EILEAN AN T-SAGAIRT (SCALE: 5CM)

**Kildonan (IoS Site 126. Canmore Site 10094.)**

Eighty-seven sherds were recovered from Kildonan, representing a minimum of 15 vessels. Vessel forms and decoration indicate that all of the pottery recovered belongs to the distinctive regional Hebridean Early Neolithic style. In addition to the assemblages recovered as part of the *Islands of Stone* project from Loch Bhorgastail, Loch Langabhat, Loch Arnish and Loch Marabhat (Copper in Garrow et al. 2017: 37–49; Garrow and Sturt 2019a; Copper 2022), comparable assemblages from elsewhere in the Western Isles include those from Eilean Dòmhnuill (Copper 2015; Copper forthcoming), Northton (Johnson 2006), Eilean an Tighe (Scott 1951) and Allt Chrysal (Gibson 1995).

FIG 79. UNSTAN BOWL SHERD (VESSEL 15, LEFT) AND NECKED BOWL (VESSEL 1, RIGHT) FROM KILDONAN (SCALE: 5CM)

Vessel forms and decorative motifs find numerous parallels elsewhere in the Western Isles. These include shouldered and necked bowls (Vessels 1 (Fig 79) and 6), Unstan bowls (Vessels 14 and 15 (Fig 79)) and baggy jars, including ridged baggy jars (Vessels 2 (Fig 79) and 3). Likewise, decorative motifs, all of which are incised, fit well with those observed elsewhere in the Western Isles. These include horizontal bands of sloping lines, often seen to form herringbone motifs, and vertical 'stacks' of short, horizontal lines separated by vertical lines (Vessel 1). Rim forms include 'simple', 'collared', 'everted with internal bevel', 'externally bevelled' and flat-topped variants. With the exception of the aforementioned 'stacks' of short horizontal lines, decoration on rims and internal bevels was exclusively made by incising diagonal or 'diagonally radiating' lines.

FIG 80. RIM SHERD FROM RIDGED BAGGY JAR (VESSEL 2), KILDONAN (SCALE: 5CM)

Where techniques could be ascertained, vessels were built from coils or straps of clay. Occasionally, an additional coil can be seen to have been added to form more complex forms of rim. No evidence of slipping was noted, with surfaces simply being smoothed before decoration took place. Vessels were, however, very well constructed and fired, with darker wall cores, indicative of shorter firing times or lower temperatures leading to incomplete combustion of organic matter contained in the clay, noted only on thicker sherds. Forty-three of the sherds were recorded as being unabraded or only slightly abraded and forty-four as abraded or differentially abraded.

Of the eight vessels whose rim diameters could be determined, six fell between 20 and 22cm, the average rim diameter being 18.6cm. A small shouldered bowl (Vessel 6) had a rim diameter of 10cm and a necked jar (Vessel 1) of 14cm. It is difficult to infer vessel volumes from rim diameters as this is significantly affected by the depth of the vessel. However, it is likely that smaller pots such as Vessels 1 and 6 would have held around 1.5 litres with the larger jars having volumes in the region of 7 or 8 litres. The one Unstan bowl whose rim diameter could be measured is likely to have held between 2 and 3 litres due to the much shallower profile of this type of vessel.

**Mingearraidh (IoS Site 128. Canmore 9826)**

Three body sherds were recovered from around Mingearraidh, representing two vessels of uncertain form, though probably vertical-sided. None were decorated, though the single sherd representing Vessel 1 was smoothed both internally and externally (the other two sherds were too severely abraded to be sure of surface treatment). In lieu of a radiocarbon date the lack of decoration combined with the vertical-sided nature of Vessel 1 is suggestive of a date somewhere between 1500 BC and the end of the first millennium AD. Unfortunately, the small size of the assemblage makes it hard to be any more accurate than this.

**Eilean Chreamh (IoS Site 132, Canmore 9794)**

Seventy-two sherds were recovered from Eilean Chreamh, derived from a minimum of two vessels of Mid/Late Iron Age date. Radiocarbon dates on organic residues indicate that Vessel 1 was in use in AD 21–431. The flat-bottomed and undecorated pots were most likely of tall, slightly flaring form with weakly everted rims and slightly convex walls. Vessels of similar form can be found amongst the Late Iron Age assemblage from the Udal as well as Norse pottery from this and other sites in the Inner and Outer Hebrides, Northern Isles and adjacent areas of the mainland (Lane 1983: 624–34), drawing attention to the long-lived nature of Hebridean ceramic traditions. Both pots were dark in colour and very highly fired; some fire clouding was visible suggesting that they had been fired in an oxygen-rich environment, most likely an open fire.

**Loch an Eilean (IoS Site 135. Canmore 270796)**

Eleven sherds, representing a single vessel, were recovered from Loch an Eilean Site 135. This is likely to have been a flat bottomed, vertical- or splay-sided bowl. A single rim sherd has a flat top resembling that on the Early Iron Age vessel from Tobha Bheag mentioned above. It is hard to suggest a date for the vessel from Loch an Eilean, though the Late Bronze Age and Early Iron Age examples mentioned in relation to Tobha Bheag, as well as the radiocarbon date for Vessel 1 from the latter site, are suggestive of a date falling in the second half of the second or the first three quarters of the first millennium BC.

**Loch an Eilean (IoS Site 136. Canmore 270812)**

A single sherd was recovered from Loch an Eilean (Site 136). Of the coarse Fabric 3, smoothed externally and from a vessel of uncertain form, this undecorated sherd produced a radiocarbon date on organic residue of AD 1440–1620.

**Ob Saile (IoS Site ML8. Canmore 373291)**

A single, large base/wall sherd from one vessel was recovered from Ob Saile, representing a simple, flat bottomed and fairly shallow bucket-shaped bowl with a rim diameter of 14cm and a base diameter of 12cm (Fig 81). Organic residue is present internally. The vessel is made from fabric 2 and the pot has been well fired, evidenced by its survival in a wet environment, even though dark wall cores remain. The vessel is built from straps of clay, with joins visible on the pot walls internally. The outside of the pot was smoothed, though depressions from fingers made during forming are clearly visible on the walls and, internally, on the base. No decoration was applied externally although the base of the pot is marked by two impressed lines which cross slightly off-centre. It is possible that these marks were made deliberately. There are also fine striations on the base that are likely to have been made by wiping with an organic material such as grass. A radiocarbon date of 384–203 cal BC was obtained from organic residue adhering to Vessel 1, indicating that this pot was in use in the later part of the Early Iron Age.

FIG 81. SMALL, SHALLOW VESSEL (VESSEL 1) FROM OB SAILE (SCALE: 5CM)

**Summary**

The pottery recovered from the Uist lochs survey in 2022 represents an eclectic mixture of styles and ages, as might be expected given the wide-ranging number, location and character of sites investigated. Six of the sites produced Iron Age pottery and one provided a Medieval date, but the three sites producing Neolithic pottery are of particular note given the recent discovery of Neolithic pottery around a number of small islets sites across the Isle of Lewis (Garrow and Sturt 2019b). While Neolithic activity on archaeological islands in Uist was known before 2022 (Scott 1951; Armit 2003; Henley 2012) the identification of three new assemblages from islet/crannog sites is of considerable significance. As with the Lewis sites, the pottery from Loch nan Clachan, Kildonan and Tobha Bheag [Eilean an t-Sagairt] repeats the same vessel forms and decorative techniques that give Outer Hebridean Early Neolithic pottery its distinctive character.

Given the abraded and fragmentary nature of many of the pots recovered, combined with their often stylistically undiagnostic character and the limited amount of contextual data available, the radiocarbon dates obtained from organic residues on several Iron Age vessels and the single Medieval vessel has proven important for confirming or rectifying provisional dates based on comparison with previously dated

assemblages. They will contribute to a better understanding of the development of Hebridean pottery from the Middle Bronze Age onwards.

Finally, it is worth drawing attention to the fact that Late Neolithic and probably also Early Bronze Age (although see Tobha Bheag, IoS site 115, Vessel 2) pots are absent from the assemblages recovered in 2022. Indeed, no pots of this date are associated with any of the Outer Hebridean islet sites investigated to date.

## FLINT/QUARTZ

*Duncan Garrow*

Quartz was noted as being present on many of the sites visited. Without specialist knowledge, it can be very difficult to tell if quartz pieces are worked or not (especially when observed underwater). Quartz is not especially diagnostic chronologically and on some sites was evident in large quantities. For these reasons, quartz was not, as a rule, collected as part of our July 2022 survey work. The very small amounts of worked flint encountered were collected. Flint is more often closely associated with Neolithic sites specifically, in the Outer Hebrides. Single flint flakes were found on two sites: Kildonan Mill Loch (IoS 126) and Ormacleit (IoS 121), both in South Uist. Additionally, a single flake of black stone (possibly Arran pitchstone), along with three pieces of worked quartz, were also collected at Kildonan Mill Loch.

## WORKED STONE

**Cannel coal bangle from Tobha Beag, South Uist (IoS 115, Canmore 270754)**

*Fraser Hunter*

Underwater survey around the islet at Tobha Beag produced a fragment of a bangle, most likely of cannel coal. Its narrow D-section is not typologically distinctive on current knowledge; such bangles occur at various times throughout the first millennia BC and AD. However, local parallels suggest a more refined chronology. Such bangles are rare finds in the Outer Hebrides: a recent summary (Hunter forthcoming) identified only two instances from Lewis (from two sites), three bangles and one bead from North Uist (all from different sites), and single bangle finds from Benbecula and Barra. In South Uist, they are otherwise known only from Cladh Hallan, where excavations produced six bangle fragments and two beads in a diverse range of materials. Apart from Cladh Hallan (with late Bronze Age – early Iron Age dates), all datable examples are middle Iron Age. Given this, an early-middle Iron Age date for the Tobha Beag example is most likely.

The rarity of such bangles arises from a lack of raw materials in the islands and the immediate vicinity. Although lignite is found in the Tertiary deposits of Skye and Mull, cannel coals and oil shales are more typical of the coalfields of central and south-western Scotland, with an outlier deposit at Golspie (Gibson 1922). Inspection of the Western Isles finds indicates a diverse range of materials was in use, and several show indications of repair or reuse, showing that these were valued items. In this case, there are no signs of repair, and it is best seen as an accidental loss or discard once it broke.

Detailed description: Narrow D-sectioned bangle, the interior slightly convex, turning sharply into a rather shallow convex exterior. The surface is worn from submersion, and no traces of toolmarks from manufacture or any use-wear survive. There is no sign of repair or reuse after breakage. The conchoidal fracture and hints of a weakly laminar structure suggest it is a cannel coal. L 48.3mm, W 6.0-6.2mm, H 12.7-13.1mm; internal diameter 55-60mm (29% survives).

**Pumice artefact from Ormacleit, South Uist (IoS 121, Canmore 270831)**

*Duncan Garrow*

A single piece of perforated pumice was recovered adjacent to the islet at Ormacleit (IoS 121). The artefact was sub-rectangular to oval in shape and measured 48 x 37 x 14 mm thick. It was perforated towards the

centre with a 7mm diameter perforation (Figure XX). The object was likely used as a fishing net float (or similar). Pumice was used in the Outer Hebrides to make artefacts from the Neolithic period onwards and it is thus difficult to date precisely.


FIG 82. PUMICE ARTEFACT FROM ORMACLEIT

## ANIMAL BONE

*Jaco Weinstock*

Animal bone was recovered from four sites in total, most of it from Eilean Creamh. The animal bone finds are as set out below in Table 4.

| IoS site | Canmore No. | Site name | Specimen | Taxon | Skeletal element | Other comments |
|---|---|---|---|---|---|---|
| 15 | 10351 | Loch an Duin | 1 | sheep/goat? | Humerus? | |
| 15 | 10351 | Loch an Duin | 2 | unidentified | unidentified | burnt |
| 121 | 270831 | Ormacleit | 1 | Cattle | Metacarpal | |
| 121 | 270831 | Ormacleit | 2 | Unid. large mammal | unidentified | partially burnt |
| 132 | 9794 | Eilean Chreamh | 1 | Cattle | Humerus | right hand side |
| 132 | 9794 | Eilean Chreamh | 2 | Cattle | Metacarpal | right hand side |
| 132 | 9794 | Eilean Chreamh | 3 | Red deer | Mandible | right hand side; adult |
| 132 | 9794 | Eilean Chreamh | 4 | Cattle | mandibular molar 1/2 | |
| 132 | 9794 | Eilean Chreamh | 5 | Cattle | mandibular molar 1/2 | |
| 132 | 9794 | Eilean Chreamh | 6 | Cattle | maxillar molar | |
| 132 | 9794 | Eilean Chreamh | 7 | Cattle | maxillar molar | |
| 132 | 9794 | Eilean Chreamh | 8 | Horse | maxillar tooth | right |
| 132 | 9794 | Eilean Chreamh | 9 | Horse | maxillar tooth | left |
| 132 | 9794 | Eilean Chreamh | 10 | Cattle | Humerus | right |
| 132 | 9794 | Eilean Chreamh | 11 | Sheep/Goat | maxillar molar | left |
| 132 | 9794 | Eilean Chreamh | 12 | Cattle? | Matapodial | |
| 132 | 9794 | Eilean Chreamh | 13 | Unidentified | unidentified | 1x sheep-sized, 1x cattle-sized mammals |
| ML8 | 373291 | Ob Saile | 1 | Cattle | Mandible | right hand side; younger than 18 months of age |

TABLE 4. ANIMAL BONE SAMPLES BY TAXON AND ELEMENT

## LEATHER SHOE

A substantial fragment of a leather shoe was recovered from the loch bed at Eilean Chreamh (IoS 132, Canmore 9794). This was directly radiocarbon dated to 1450-1630 cal AD.

FIG 83. FRAGMENT OF LEATHER SHOE (SCALE: 10 CM)

## SLAG

A single piece of possible slag (62g) was recovered from the loch bed at Eilean Chreamh (IoS 132, Canmore 9794).

## CORE

The core taken at Loch nan Clachan revealed the following sequence:

| From (cm) | To (cm) | Description |
|---|---|---|
| 0 | 33 | Very dark grey (Gley 1 3/N to light grey Gley 1 7/n) sandy silt. Visible lenses of in-washed sands interbedded with silts. Increasing organic content down core to boundary |
| 33 | 37 | Clear boundary over 4 cm of mixed sandy silt (as above) with increased back (Gley 1 3/10y very dark greenish grey/black) organic rich silt peat? |

| | | |
|---|---|---|
| 37 | 43 | Very dark grey/black (2.5/2.5 10y) organic rich silt, with clear organic fragments. |
| 43 | 47 | Clear boundary over 3cm decreasing organic content increasing sand fraction, becoming sandy silt. |
| 47 | 103 | Very dark grey (Gley 1 3/N) sandy silt with clear lenses of quartz(?) rich sand - nicely banded/varved loch deposit. Possible increase in organic content down core. some thin lenses of clay? |

TABLE 5. SEDIMENT SEQUENCE OF CORE FROM LOCH NAN CLACHAN

This is provisionally interpreted as being a loch bed sandy deposit, overlain by an organic rich layer (37-47cm) associated with islet construction (and possibly a period of lower loch level and peat formation), topped by post islet construction loch deposits. Samples have been taken for pollen and radiocarbon analysis to help resolve issues relating to the dating of the sequence, its association with islet construction and the environmental context of construction.

## RADIOCARBON DATING

*Duncan Garrow*

**Introduction**

In total, thirteen samples from seven different sites were submitted for radiocarbon dating (Table 6). All of the pottery sherds on which good amounts of carbonised residues were observed were submitted; additionally, animal bone from the four sites where it was found, as well as a leather shoe fragment and one piece of wood, were dated. All of this dated material was recovered from the loch bed around each of the islets. Two submitted samples (both animal bone) failed due to low carbon yields. Two additional samples taken from the core at Nan Clachan (IoS 18) have subsequently also been submitted; the results are pending and have not therefore been included in this report.

**Discussion**

The radiocarbon determinations that were obtained directly on pot sherds were enormously helpful in securing tighter date brackets for activity at those sites. As Copper discusses in his pottery report, given the abraded and fragmentary nature of many of the sherds recovered, combined with their often stylistically undiagnostic character, it is often difficult to place sites precisely within a fairly large timespan (e.g. from the Middle Bronze Age to the Medieval period) on the basis of ceramics. Radiocarbon certainly helped in this regard on several sites.

On two sites where two radiocarbon determinations were obtained, the calibrated dates were some distance apart. This was the case at Loch an Duin (IoS 15, Canmore 10351) and Eilean Chreamh (IoS 132, Canmore 9794). At Loch an Duin, the Early Bronze Age date of 1880-1650 cal BC was more surprising than the Early Iron Age date of 740-410 cal BC. No other crannog sites have previously seen activity during the Early Bronze Age, meaning that this islet would benefit particularly from further investigation. At Eilean Chreamh, it seems likely that the two dates, one Late Iron Age and one Medieval/post-Medieval are indicative of genuinely long-term use/occupation.

The other dates of especial note, largely because they were in some ways unexpected given the character of the site itself (see Section 5. Surveyed Sites), were the two Medieval/post-Medieval determinations at Loch An Eilean (IoS 136, Canmore 270812). The single small, dated sherd was undiagnostic, the dated wood was recovered underneath the outer 'skirt' of stones forming the base of the crannog, perhaps indicating later alterations (or conceivably even initial construction) during this relatively late period of crannog occupation and use at this site.

| Site | IoS site no. | Canmore site no. | Sample ID | Material | Context | Age | error 1s | Date range | Reporting No. | Lab No. | d13C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Loch an Duin | 15 | 10351 | IoS22_15.1 | Charred residue on pottery | Loch bed | 2421 | 24 | 740-410 cal BC | SUERC-108001 | GU62878 | -26.2 |
| Loch an Duin | 15 | 10351 | IoS22_15.2 | Animal bone (sheep/goat humerus) | Loch bed | 3445 | 22 | 1880-1650 cal BC | SUERC-108009 | GU62884 | -24.9 |
| Loch nan Clachan | 18 | 10094 | IoS22_18.1 | Charred residue on pottery | Loch bed | 4564 | 22 | 3480-3110 cal BC | SUERC-108003 | GU62880 | -27.6 |
| Loch nan Clachan | 18 | 10094 | IoS22_18.2 | Charred residue on pottery | Loch bed | 4641 | 23 | 3510-3360 cal BC | SUERC-108004 | GU62881 | -26.7 |
| Tobha Bheag | 115 | 270754 | IoS22_115.1 | Charred residue on pottery | Loch bed | 2210 | 24 | 370-200 cal BC | SUERC-108029 | GU62899 | -26.3 |
| Eilean Chreamh | 132 | 9794 | IoS22_132.2 | Leather (shoe) | Loch bed | 386 | 24 | 1450-1630 cal AD | SUERC-108010 | GU62886 | -28.0 |
| Eilean Chreamh | 132 | 9794 | IoS22_132.3 | Charred residue on pottery | Loch bed | 1666 | 21 | 260-430 cal AD | SUERC-108028 | GU62898 | -25.6 |
| Loch An Eilean | 136 | 270812 | IoS22_136.1 | Charred residue on pottery | Loch bed | 402 | 24 | 1440-1620 cal AD | SUERC-108000 | GU62877 | -25.9 |
| Loch An Eilean | 136 | 270812 | IoS22_136.2 | Wood (Salix sp. (outer rings) | Under stones of crannog | 152 | 21 | 1670-1955 cal AD | SUERC-108011 | GU62887 | -29.8 |
| Ob Saile | ML8 | 373291 | IoS22_ML8.1 | Charred residue on pottery | Loch bed | 2231 | 24 | 380-200 cal BC | SUERC-108002 | GU62879 | -24.9 |
| Ob Saile | ML8 | 373291 | IoS22_ML8.2 | Animal bone (cattle mandible) | Loch bed | 2418 | 24 | 730-400 cal BC | SUERC-108008 | GU62882 | -21.8 |
| Ormacleit | 121 | 270831 | IoS22_121.1 | Animal bone (cattle metacarpal) | Loch bed | failed | - | - | - | GU62883 | - |
| Eilean Chreamh | 132 | 9794 | IoS22_132.1 | Animal bone (red deer mandible) | Loch bed | failed | - | - | - | GU62885 | - |
| Loch nan Clachan | 18 | 10094 | IoS22_18.3 | Leaf and small twig fragments. | Base of organic rich layer | Result pending | - | - | - | - | - |
| Loch nan Clachan | 18 | 10094 | IoS22_18.4 | Leaf fragments | Middle of core | Result pending | - | - | - | - | - |

TABLE 6. RADIOCARBON DATES FROM THE UIST CRANNOGS SURVEY 2022

# 7. DISCUSSION

Neolithic materials were recovered from three sites (Fig 81). At Loch nan Clachan and Kildonan both Hebridean Ware and Unstan-type vessels were observed on the loch bed around the islets, while at Tobha Bheag (Eilean an t-Sagairt) sherds from a large undecorated baggy jar were recovered. Charred residues from two pots recovered from Loch nan Clachan were radiocarbon dated to 3480-3110 cal BC and 3510-3360 cal BC and it is likely the Neolithic pottery from the other two sites reflect similar dates.

In the case of Loch nan Clachan and Kildonan, loch levels around the islets were shallow (< 2m) enough to enable the pottery to be observed/felt and recovered on snorkel. In both instances, large quantities of pottery were noted. Although there was poor visibility at Loch nan Clachan, the pottery at both sites appeared to be partially submerged within loch bed deposits, in some instances only detectable by wafting or probing surface sediments by hand. At both sites, pieces of roundwood and possibly timber were also noted (the former within the core taken around 3m from the islet's edge and the latter in-situ around 7m from the islet's edge). This accords well with the construction of Neolithic crannogs in Lewis. The core taken at Loch nan Clachan contained a distinct organic layer that included fragments of roundwood and charcoal. Analysis of this core is on-going but will hopefully aid in answering questions relating to the construction and use of this islet. The roundwood and timber or organic matting observed at Kildonan likewise suggests a possible timber structure at this site. Coring around the islet and/or sampling the observed organic remains would likewise help elucidate the nature of islet construction and broader environmental changes through time but is hindered by the islet's status as a Scheduled Monument. Of note, small fragments of wood or wood fibres were observed along with the recovered bones, but the pieces were too slight to be recovered. Thus there is the potential for timber at this site, but little else can be said about it at this time.

Loch an Duin is of further interest given the Early Bronze Age date (c. 1880-1650 cal BC) of a sheep/goat humerus recovered from around the islet. Few archaeological islands in Scotland have been dated to the Bronze Age; the only exception on the mainland is Buiston crannog, which produced a Late Bronze Age date (c. 855 BC). Otherwise, the only two islets to have produced Bronze Age dates are two initially Neolithic crannogs in Lewis, Loch Bhorgastail (c. 1430-1130 cal BC) and Loch Langabhat (c. 1420-1130 cal BC). This evidence, combined with other material remains and physical characteristics observed at the site (e.g. potential wooden features, submerged nature of islet and causeway compared to other Iron Age islets in the same loch, etc.), suggest the presence of more substantial, and perhaps even earlier, remains at this site.

Materials from seven other islands suggest Iron Age or later dates. These finds were often found close to the islet, either amongst the submerged stones or in the shallows (< 30cm) around them. In addition to pottery, many of these sites also produced bones and rounded or worked stone; in some instances these materials showed signs of burning. Such finds are common on Iron Age crannogs on the mainland and have been suggested as the remnants of food production or other substance-based activities. Similarities in the material record pertain not just to generic finds but also to more specific material remains, such as the cannel coal fragment recovered from Tobha Bheag and the likely roundhouse on the surface of Mingearraidh. The similarity of these sites with mainland crannogs is not particularly noteworthy, but the differences in terminology is; some of the islets that produced Iron Age materials are classified as duns despite their material records being remarkably similar to sites classified as crannogs on the mainland. The similarity in finds despite the discrepancies in site classifications is intriguing and shows the need to think of Iron Age islands as a more cohesive site type as proposed by Cavers (2010) and Lenfert (2013). Although no earlier remains were recovered from any of these sites, their absence does not preclude their existence.

Further, there were a number of sites that did not produce any materials but remain open to the possibility of their existence. In the three lochs where Neolithic pottery was produced, the finds were more deeply

embedded within loch bed sediments and at a greater distance (and thus depth) from the islets, whereas later finds were often recovered from the surface of loch bed deposits within the shallows around the islet. Thus for the sites that exhibited deeper alluvial deposits and/or silting (e.g. Gunisary Bay, Loch an Duin, Ob Sail, Loch an Eilean-136, Mingearraidh), the possibility remains for the existence of Neolithic (or any other) material culture within these deeper sediments. Further, underwater observation was limited at a handful of sites (e.g. Oban Trumisgarry, Loch an Daill, Gunisary Bay) and/or loch depths were too great to be observed on snorkel (e.g. Dun Eashader, Loch Carabhat); the potential for material remains at these islets still exists. In contrast, there were a few sites at which good visibility, a shallow loch, and compact loch bed sediments allowed much of the underwater extent around the islets to be observed. Some of these sites were clearly artificial (e.g. Clachan, Loch nan Gearrachun) yet produced little to no material remains, leaving much to be speculated at regarding these sites. Finally, three HER/NRHE recorded sites (Loch Bru, Loch an Fhaing and Ormiclate) did not appear to be artificial nor even substantially modified, and produced no archaeological material. Although clearly outside the scope of our interest, whether these sites should even be considered 'archaeological islands' remains open to debate.

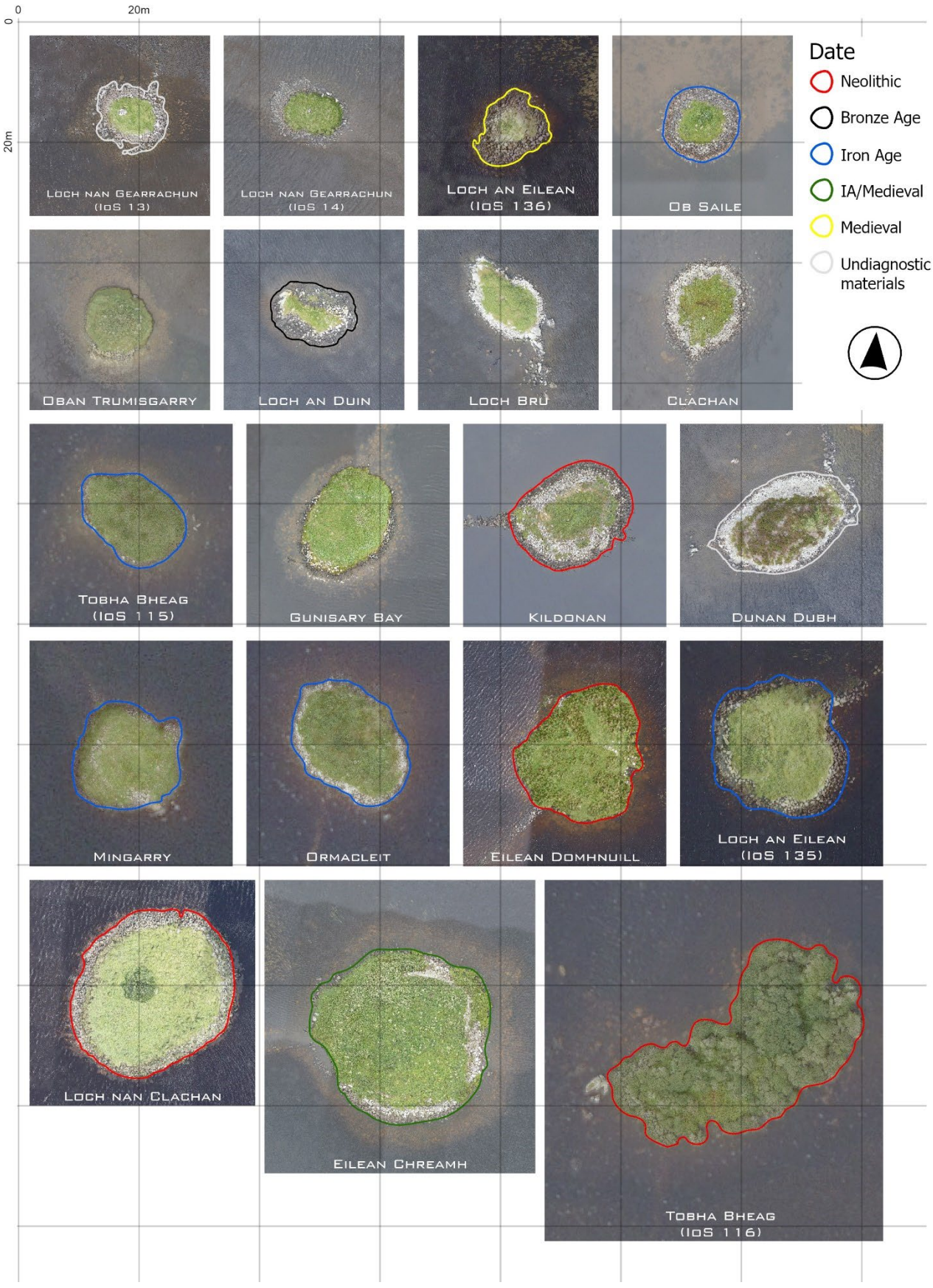


FIG 84. CRANNOGS SURVEYED BY SIZE AND DATE

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