

**NORTH OF SCOTLAND ARCHAEOLOGICAL SOCIETY**

**TOPOGRAPHICAL SURVEY OF LOCH ACHILTY CRANNOG**



**Site Name: Loch Achilty Crannog**

**Author: Richard Guest**

## **Introduction**

The Topographical Survey of Loch Achilty Crannog sits within the wider NOSAS crannogs project. The research questions of the wider Crannogs project are:

1. Identification of previously unrecorded crannogs,
2. Are they artificial or not? (Evidenced by placed timbers or stones),
3. What is the chronology/dating? (Evidenced by artifacts at initial survey and by dating of organic matter at full survey),
4. What is the relationship with terrestrial settlement? (from desktop survey),
5. Is there a recognisable pattern of construction method and resource use? (Stone or wood).

The project commenced with a desktop survey, examining satellite imagery, aerial photographs, mapping and lidar, to identify previously unrecorded crannogs. Existing crannog records were studied to identify suitable sites for further survey. Sites had to be accessible for diving equipment. It was decided to concentrate on sites where there was no record of diving having taken place, no excavation had taken place in modern times and there was no scientific dating evidence. It was clear that the vast majority of sites had never been studied since they were first recorded in antiquarian times, principally by the Rev. Odo Blundell.

The Loch Achilty Crannog was chosen for further study because it met all the above criteria. The landowner Mr Mark Butcher was contacted and gave his approval for NOSAS to carry out a survey.

## **Aims of the project**

The aim was to carry out a topographical survey of the island known as Loch Achilty Crannog, to establish not only the extent of the island above water but to record the full extent of the artificial mound rising from the bed of the loch. The artificial mound and the loch bed surrounding it would be examined under water to look for any artifacts associated with it, particularly anything which might provide dating evidence.

## **Site Description**

Loch Achilty is a small loch just over 1km long and 0.6km wide. It is in the parish of Contin in the Highland area of Scotland, about 11km inland from the head of the Cromarty Firth at Conon Bridge, at an altitude of 30m AOD. It is surrounded on three sides by steeply sloping ground, now forested, but to the east is good quality farmland sloping gently down to the Black Water, a tributary of the river Conan. The above water exposure of crannog itself is tiny, just 17m long by 11m wide. It is situated close to the south shore of the loch, near the western end. There are several mature trees growing on it but the surface is stony, with almost no soil.

The crannog is recorded in Canmore at <http://canmore.org.uk/site12472> and in HER at <http://her.highland.gov.uk/MHG7791>

## **Historical Background**

The crannog was inspected by O.Blundel in 1913. He described it as up to 60' (18.5m) long by up to 42' (7.4m) wide on the surface and 79' (24.3m) long x 59' (18.15m) at the base. He refers to timbers protruding on three sides. The New Statistical Account in 1845 refers to buildings on an artificial island, associated with Maclea Mor, who remains undated. The Ordnance Survey name book in 1876 ascribes the artificiality and MacLea association to Eilean Mhìelidh, a natural island on the north side and makes no mention of the crannog.

The book of Ross, Sutherland and Caithness, Orkney and Shetland: descriptive, historical and antiquarian notes, (MacDonald, Polson and Brown, 1931) refers to the crannog.

The O.S. made visits in 1965 and 1970 and record rather smaller dimensions than Blundell, both above and below water.

There is no record of any modern examination and no dating evidence of any kind.

## **Site Work**

### **1. Initial Inspection**

The crannog was reached by canoe from the Forest and Land Scotland carpark at the north- west corner of the loch. An initial inspection of the underwater structure was made by snorkelling. It could be seen that the mound consisted of stones of a fairly uniform size which could be easily manhandled. The side slopes were steep and even. It was clear that this was a manmade structure. Much long timber was visible, but it appeared to be lying on the surface of the stone mound, mostly orientated down-slope from shallow to deep. The impression gained was that these were tree trunks of trees which had been growing on the island and had died and fallen in or been blown in by gales. Underwater visibility was about 1.5m. It was possible to see the loch bed from the surface on the shallow side (nearest the shore) but on the deeper side the stone pile disappeared into the gloom. It was determined that scuba diving would be necessary in order to carry out an underwater survey. As there was only one diver in NOSAS at the time, this had to be delayed until a second diver could be recruited. At this point, NOSAS contacted the Nautical Archaeological Society for assistance.

### **2. Topographical Survey**

A diver from NAS volunteered to assist and an expedition was arranged for the 18/19 August 2023.

Using canoes and a rowing boat the divers and their kit were taken out to the crannog. Whilst the divers kitted up and made a circuit of the crannog underwater, looking for artefacts and establishing the limits of the artificial mound, a party on shore laid out a base line along the long axis of the island and took offsets to the edge of the water on either side. No artefacts were found. It was confirmed that the timbers appeared to be fallen trees or driftwood. There was no evidence of a causeway linking the crannog to the shore. The crannog was found to sit on the edge of a shelf, with the loch bed sloping steeply down, immediately north of the base of the structure. The divers followed the slope down to 7m, at which point they were in complete darkness due to the peaty water.

On a second dive, the survey was extended underwater. As the deepest part of the base was less than 3m and on this occasion visibility was good enough to see from the surface to the base of the crannog, a system was devised to take horizontal measurements to the base of the mound. The divers placed 4m long canes in the loch bed around the base of the mound and recorded the water depth at each cane by measuring with a tape measure from the surface. These canes were long enough to break surface. The divers then surfaced and whilst one diver held the cane as near vertical as possible, the second diver held the zero end of the tape on the cane and a person on shore measured the offset from the baseline. At the extremities of the base line the canes were placed in line with the baseline so in effect the baseline was extended along the surface of the water to the extremity of the underwater structure.



Surveying on the island © Duncan Ross



The author examining timber on the loch bed @Duncan Ross



Base of crannog where it meets the loch bed @Duncan Ross



Looking up-slope from base of crannog© Duncan Ross

These measurements enabled a plan and cross sections to be drawn showing the extent of the crannog both above and below water. The underwater length measured was slightly greater than that recorded by Blundell but the width was almost exactly the same.

At the end of the survey the divers discovered two timbers which were embedded in the stone mound on the north side, one at the very base of the crannog (timber2) and one slightly higher up (timber 1). It appeared that these timbers must have been placed during the construction of the stone mound.



Timber 1, Concave © Duncan Ross



Timber 2 © Duncan Ross



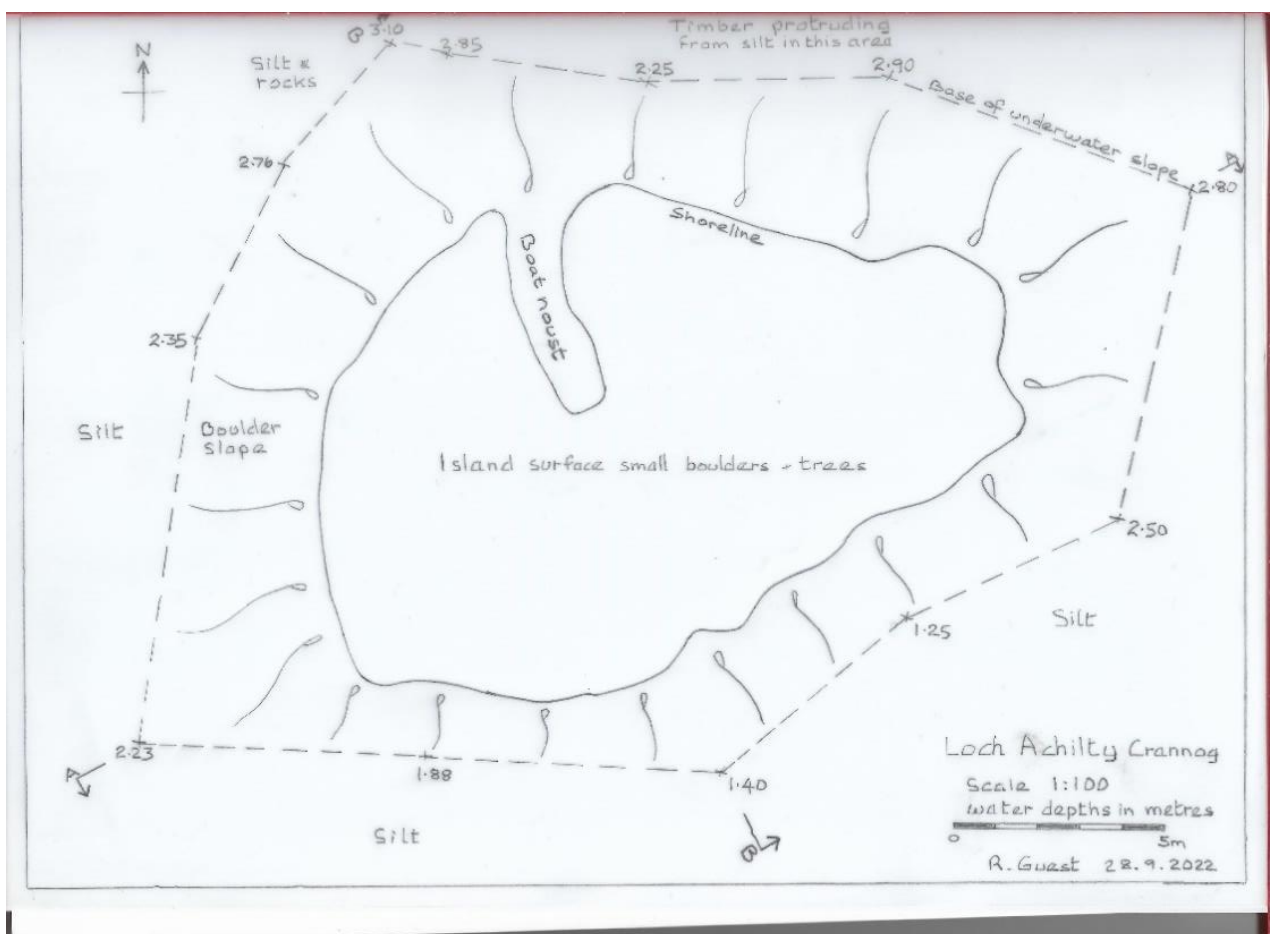
### 3. Timber Sampling

After discussion with the NOSAS committee, NAS, a professional archaeologist with experience of crannogs, and the landowner, it was agreed to take samples of the embedded timbers for carbon dating. Subsequent dives were arranged on 11 March and 16 April 2023, the first with an NAS trustee and the second with a diver who had recently joined NOSAS. One timber was sampled on each dive, the timber proving very hard and time consuming to cut. The samples were stored in water from the loch in sealed plastic bags, kept in a fridge until they could be sent for analysis.

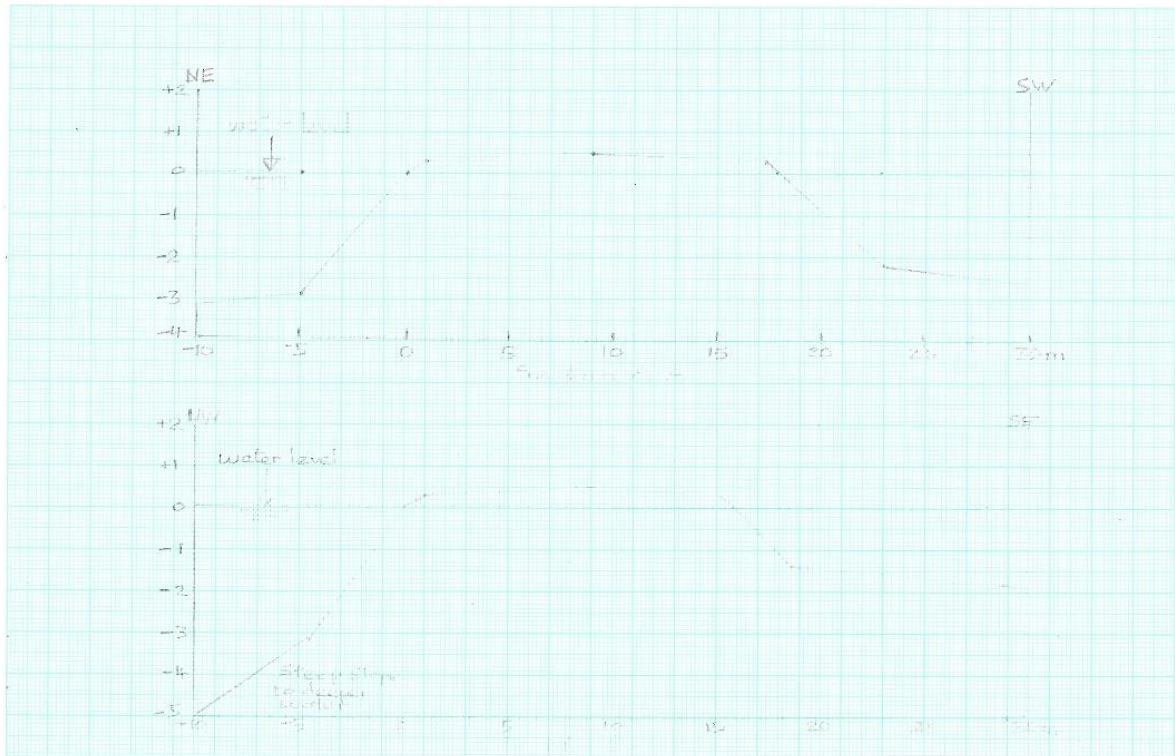
## Results

### 1. Survey

The plan and sections from the tape and offset survey are reproduced below.



Plan of crannog (1:100 scale when printed at A4)



Cross-sections A-A and B-B

## 2. Timber Samples

NOSAS are indebted to Michael Stratigos from Aberdeen University for determining the species of the timber and for preparing and forwarding the samples to SUERC laboratory for carbon dating. Both samples were Quercus (Oak) and fortunately sample 2 (the lower timber at the very bottom of the crannog) included the outermost rings of the tree. Sample 1 had a radiocarbon age BP of 561 +/- 19, whilst sample 2 was BP 890 +/- 24, placing them in the mediaeval period. The SUERC certificates are reproduced below.

### Conclusions

Achilty crannog is confirmed as an artificial construction of stone with some embedded timber. It sits in a water depth of 1.25m to 3.10m, on the edge of an underwater shelf which slopes rapidly into deeper water.

Timbers embedded in the construction date from the mediaeval period. Due to the position of timber 2 at the very base of the crannog, it is concluded that the construction of the stone mound cannot be any earlier than the age of this timber.

There is no evidence on the surface of any buildings.

### **Proposals for Future Work**

Crannogs from the mediaeval period are very rare and very few of them have been studied. There is minimal knowledge of the construction techniques used in the Highland area, or of the function to which crannogs were put. NOSAS believe that Achilty crannog would be a good subject for more detailed study, possibly a partial excavation with a view to determining the method of construction. This may even reveal clues as to its purpose.

### **Acknowledgements**

Mark Butcher (landowner), Michael Stratigos (Aberdeen University), Claire Hallybone and Duncan Ross (NAS), James McComas, Liz Long, Steve North, Beth Blackburn, Anne and Dave Coombs, Alistair Duff and Andrew Newton (NOSAS volunteers).




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*RADIOCARBON DATING CERTIFICATE*

09 October 2023

**Laboratory Code** SUERC-122712 (GU65306)  
**Submitter** Richard Guest  
NOSAS  
  
**Site Reference** Loch Achilty Crannog  
**Context Reference** Timber 1 - Outermost 10 rings  
**Sample Reference** 1  
**Material** Waterlogged Wood : Quercus sp.  
 **$\delta^{13}\text{C}$  relative to VPDB** -26.8 ‰

**Radiocarbon Age BP** 561  $\pm$  19

**N.B.** The above  $^{14}\text{C}$  age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Laboratory and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon* 58(1) pp.9-23.

For any queries relating to this certificate, the laboratory can be contacted at [suerc-c14lab@glasgow.ac.uk](mailto:suerc-c14lab@glasgow.ac.uk).

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : B. Topping

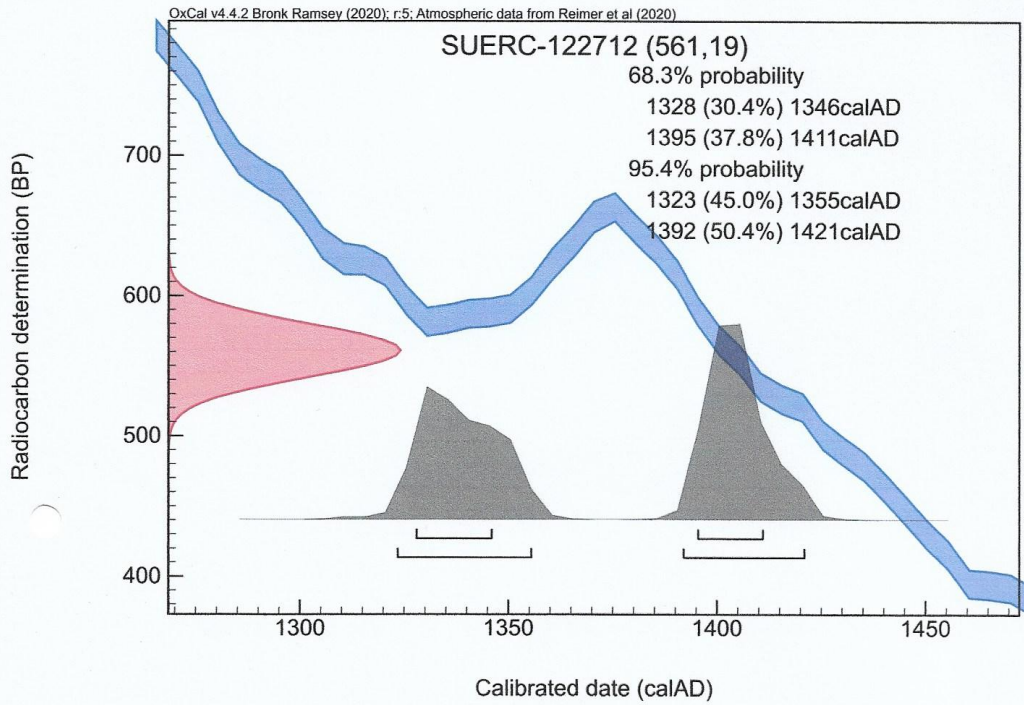


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The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.\*

The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

\* Bronk Ramsey (2009) *Radiocarbon* 51(1) pp.337-60

† Reimer et al. (2020) *Radiocarbon* 62(4) pp.725-57



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**RADIOCARBON DATING CERTIFICATE**  
09 October 2023

**Laboratory Code** SUERC-122713 (GU65307)  
**Submitter** Richard Guest  
NOSAS  
  
**Site Reference** Loch Achilty Crannog  
**Context Reference** Timber 2 - Outermost 10 rings  
**Sample Reference** 2  
**Material** Waterlogged Wood : Quercus sp.  
 **$\delta^{13}\text{C}$  relative to VPDB** -27.8 ‰

**Radiocarbon Age BP** 890  $\pm$  24

**N.B.** The above  $^{14}\text{C}$  age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Laboratory and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

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Conventional age and calibration age ranges calculated by : E. Dunbar

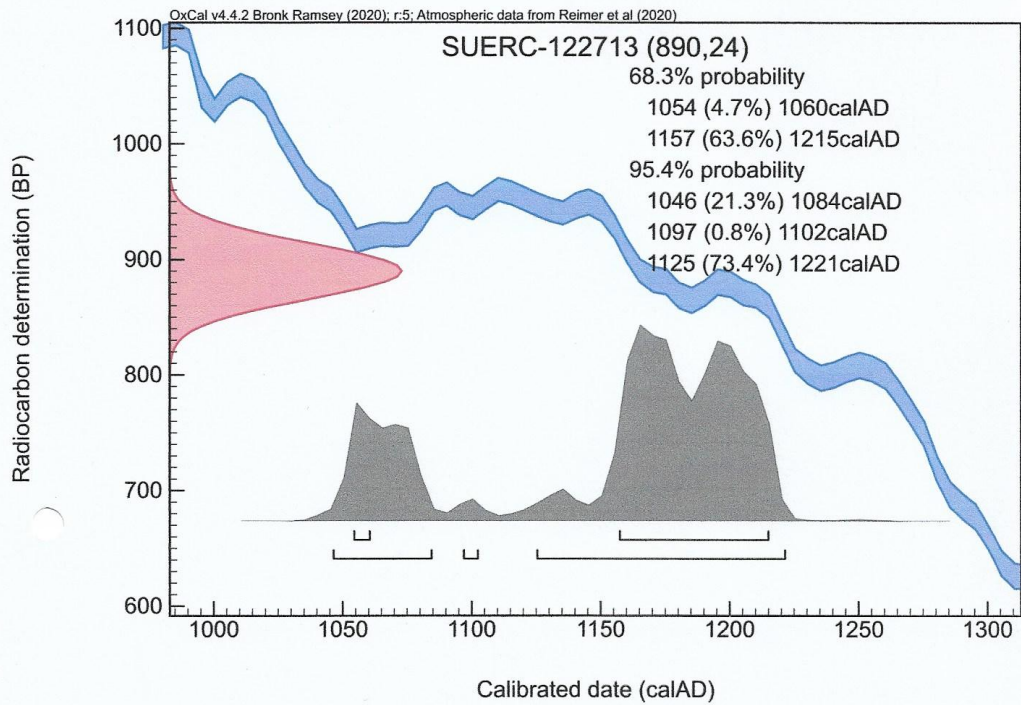
Checked and signed off by : B. Tuzney



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