

HUNTER-GATHERERS IN THE CAIRNGORM MOUNTAINS

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Since 2013 an interdisciplinary and international team of archaeologists, geologists and palaeoenvironmental specialists have been exploring the early prehistoric settlement of the Cairngorm mountains, indicating that hunter-gatherers were very familiar with this remarkable landscape. Research is ongoing, and there is a significant role for hill walkers and mountaineers to play in helping with this.

The story of the appearance of hunter-gatherers in the Cairngorms is bound up with the climate and landscape changes at the end of the last Ice Age and the start of the Holocene era. Put simply, the Late Glacial Maximum – the maximum extent of the ice, which at its most extensive covered Scotland – was followed by a warm Interstadial (interglacial) period: the Bølling-Allerød from circa (c) 12,700-10,900 BC (this period used to be called the Windemere Interstadial). Climate and environment changed over this period, but in general the Scottish landscape was characterised by low scrub and grasslands.

During this period, hunter-gatherer groups re-settled southern Britain. These were *Homo sapiens* populations, probably small in total number and mobile. They seem to have relied heavily on large game. Their technologies, art and ritual practices were very similar to hunter-gatherer populations in the rest of Northern Europe – indeed, with lower sea levels, at this time Britain was connected to the continent, and was really an extension of it. These were groups of Upper Palaeolithic hunter-gatherers in archaeological terminology, sometimes also described as Late Glacial.

There is some evidence for the presence of Late Glacial hunter-gatherers in Scotland. A collection of stone tools from Howburn Farm, Lanarkshire probably dates to about 12,000 BC, with the possibility of some later visits. Artefacts from Kilmefort Cave, Argyll probably date to about 11,500 BC. Stone tools from closer to the Cairngorms, on Nethermill on the River Dee near Banchory, are probably of the same period.

The interstadial period ended with a return to cold conditions and the formation of glaciers in corries and valleys of the high mountains during the Younger Dryas (10,900-9,700 BC). Human settlement likely retreated. On Islay, distinctive stone tools probably date to about

10,000 BC – as this cold period was ending. Some stone tools found scattered through northern and western Scotland may suggest cultural links with northern Scandinavia at this time.

Following the end of the Younger Dryas there was quite rapid warming at the start of the Holocene, and the recolonisation of Scotland by plants, animals – and in due course, humans. The landscape changed significantly over time as rivers readjusted to post-glacial conditions, as sea levels changed, and different vegetation communities were established. In the high mountains, earthquakes and rockfalls were common as the landscape readjusted to the removal of the weight of ice that had compressed it for millennia.

Into this landscape moved groups of Mesolithic – or middle stone age - hunter-gatherers. In Scotland, this period ends at about 4000 BC with the arrival of farming and the Neolithic. Across Europe there was great diversity in how these groups of hunter-gatherers organised themselves. Some were specialist sea-fishers and marine mammal hunters, others targeted terrestrial game, some exploited woodlands heavily for plant foods. In some places hunter-gatherers became less mobile over time and marked their relationships with place through the construction of formal cemeteries. Some communities used light weight tents as a preferred form of architecture, others utilised much more substantial buildings, with what appear to have been rules, or at least strong preferences, as to how space would be used inside. Although the archaeological record for the period is dominated by stone tools, the material world of these hunter-gatherers was rich. Sites with organic preservation across Europe show us art, often decorating tools, elaborate antler head-dress costumes seemingly associated with shamanic practices: in Sweden, in a lake at the edge of a settlement human skulls were propped on poles. These hunter-gatherers were characterised by diversity, complexity and creativity. They were reliant on ‘wild’ food, although this simple phrase fails to capture the ways in which hunter-gatherers influenced their environment through practices of management which altered those landscapes. This included importing so-called wild animals to islands, managing woodlands through practices such as coppicing as well as a host of more subtle interactions.

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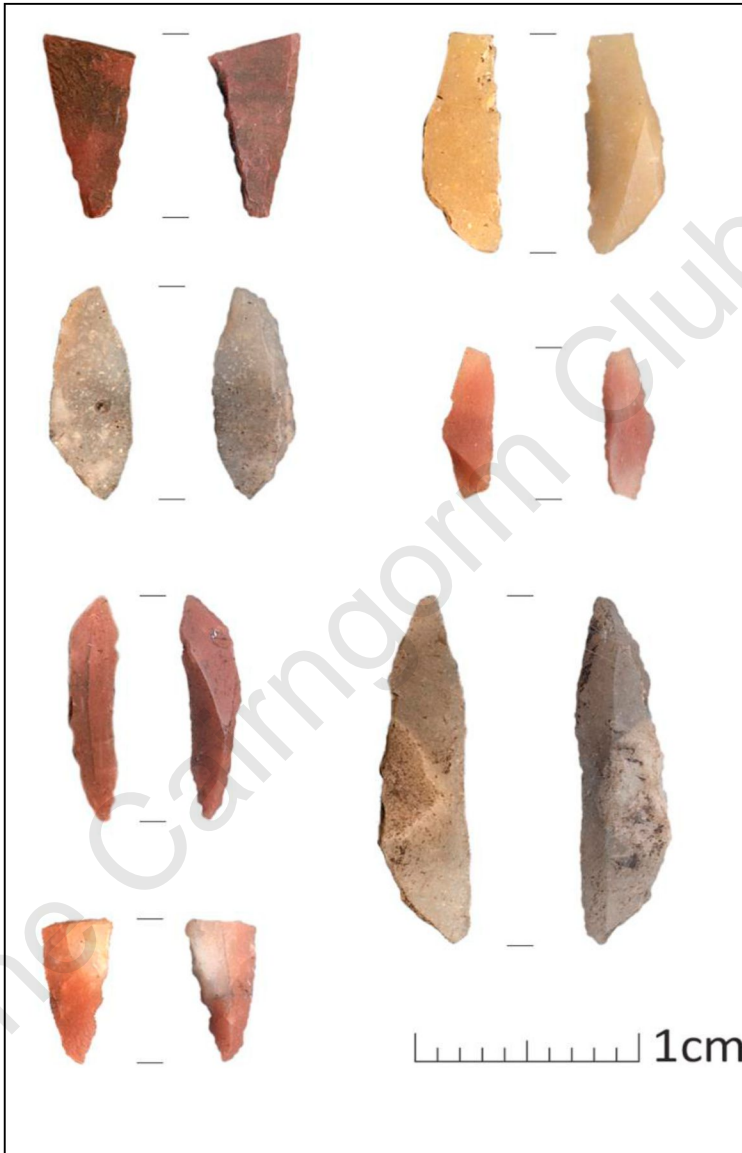
Finding Mesolithic hunters in the Mountains

Across Europe, one of the key features of the Mesolithic is the movement of hunter-gatherers into different landscape types. Mountains are a key part of this. Mesolithic communities established settlements at approximately 2300m above sea level (asl) in the Eastern Alps, probably moving into the mountains seasonally, retreating to deeply incised river valleys in winter. In Switzerland, rock crystal was quarried from outcrops at c. 2800m asl. In some parts of Norway, groups of hunter-gatherers appear to have exploited reindeer in the high mountains, carefully selecting locations on migration routes. Although accounts of Mesolithic Europe are often dominated by the distinctive forms of hunter-gatherer behaviour that developed in association with rich and productive marine environments, mountains are a key part of the story of this period.

The dominance of the coast in our accounts of Mesolithic hunter-gatherers has been true of Scotland. Most of our sites in the east and west of Scotland are near the coasts. This is unsurprising. Mesolithic sites leave little trace above ground. Most have been found through collections of stone tools from the surface: this normally means that you are more likely to find sites near population centres and in areas of ploughing. Shell middens – distinctive accumulations of shells and other material – are prominent features that can be discovered in erosive contexts. But they are – by their nature – likely to be coastal. Finally, in recent years, Mesolithic sites have been excavated in advance of infrastructural or commercial developments. These have made invaluable contributions to our understanding of the period but are also more likely to be near the coasts than the inland mountains.

Some of the challenge of finding these inland, mountain sites is demonstrated by considering the size of the stone tools in question. At one site we excavated in the Cairngorms (photograph 1, following page), the average maximum size of the flint artefacts recovered by excavation was only 8.7mm. Finding artefacts of this size in a landscape that is covered by peat which has to a large extent formed after the Mesolithic period, is not straightforward. And it is here that we can turn our attention to Mar Lodge Estate and the Cairngorms.

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1 Microlith fragments from Caochanan Ruadha. Microliths are a distinctive Mesolithic tool type, small blades of flint, snapped and modified into shapes. Multiple microliths would have been hafted in a tool: forming the blade of a knife, or barbs/tips of a projectile.

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The Upper Dee Tributaries Project

The genesis of all our recent work on Mesolithic hunter-gatherers in the Cairngorms lies with footpath maintenance carried out on Mar Lodge Estate, which is managed by National Trust Scotland (NTS). During routine maintenance in 2003 a small number of flint artefacts were identified in two locations: at Chest of Dee and Cochanan Ruadha, on the Geldie Burn. The footpath workers identified that the flint was potentially significant and reported it to the National Trust Scotland archaeologist. The artefacts were recognised as probably being Mesolithic in date, and in follow up work, the NTS identified a further site at Carn Fiaclach Beag in Glen Dee. All the sites were covered by peat and very close to rivers.

Because of the impacts of climate change on river temperatures, NTS were required to propose a programme of riparian afforestation. The presence of Mesolithic stone tools in riverine contexts was therefore both a challenge and an opportunity: could planting take place without damaging these sites? Were the sites just a few stone tools or did anything else survive? These were pressing management questions even before we consider the value of finding out what the sites can tell us about Mesolithic hunters in the Scottish mountains. It is worth noting that the challenges of assessing the archaeological impact of re-afforestation and re-wilding continue – as will be discussed below.

The Upper Dee Tributaries Project (UDTP) was developed by Shannon Fraser (NTS Archaeologist) to address this challenge. Shannon brought together researchers from Universities of Aberdeen, Dundee, Stirling and my own institution, University College Dublin (although I have been based in Ireland since 2002 my PhD at Edinburgh focused on the Mesolithic of eastern Scotland). The UDTP conducted geomorphological assessments of the valleys of the Geldie and parts of the Dee. This sought to confirm which riverine landforms might date to the Mesolithic and which were more recent. UCD and Aberdeen also conducted excavations at Cochanan Ruadha and Chest of Dee.

Test excavations at Chest of Dee uncovered a complex and rich archaeological site at 415m asl on the eastern bank of the Dee immediately below the waterfalls at Chest of Dee and extending,

discontinuously, down river to shortly before the modern junction with the Geldie. The site here was identified by artefacts on the surface which had been uncovered by the construction of 'high build' paths – cutting turf on either side of the path and inverting them to create the path.

It is important to stress that all the sites we have excavated so far have been found through activities associated with modern footpaths. This means that although all of our sites seem to show that communication routes into and through the mountains were important in the Mesolithic, we have to be a little careful in making this statement as it may simply be a bias caused by how we are finding them.

Returning to Chest of Dee, the earliest dates from the site, at about 8100 BC are hard to understand, but there is clearly more activity at c 7500 BC and then an expansion in activity at 6900-6700 BC, with occasional activity in the two millennia that follow – this was clearly a place of importance over the very long term, even if there may have been gaps in this sequence of activity. This longstanding use may be linked to the prominent landscape location of the Chest of Dee site – above the river junction and with the striking feature of the Chest of Dee falls, and the pools beneath them. Mesolithic sites near upland river junctions are also well known in the Tweed valley. It is interesting to note that the waterfalls at the Chest of Dee were probably formed during the period of Mesolithic occupation of the site when the Dee changed channel. The first settlement at Chest of Dee probably took place before the falls were present. This site was in, or at the edge of, forest. In the early phases of occupation, the woodland was characterised by birch and willow, with pine becoming dominant over time. Stone tools from the site were common: with flint carried from deposits on either the North Sea or Moray Firth coasts, and a local rhyolite also used. Activity on site includes hearths, spreads of material and pits.

The Chest of Dee site was used for a long time and was probably not always used for the same reasons. It is located on a natural communication route into the high mountains and near prominent landmarks. Salmon, possibly resting beneath the falls, may have been an important resource as well as game and plants from the woodlands.

The diversity of the stone tool assemblage confirms that a range of tasks were undertaken here. Given prevailing climate conditions, it is likely that the use of Chest of Dee was seasonal, winter occupation may have been challenging and we might assume that this was during the summer.

In contrast activity at Caochanan Ruadha, on the Geldie Burn, appears to have been more specialised. Here, a very low-density scatter of flint artefacts is located on the gentle slopes at the eastern edge of a large valley basin at 540 m asl (photograph 2 below).

When occupied, at about 6200 BC, the site was in light woodland, close to the tree line. The valley basin was probably a wetland, and the Geldie may not have been a distinct river in this section.

The site (photograph 3 on the following page) was identified through the presence of stone tools in a path eroded in peat. On this low hill side, a few discrete concentrations of stone tools can be found – one excavated by UCD School of Archaeology provided evidence for the use of a light



2 Overview of excavation at Caochanan Ruadha, showing site location at edge of open ‘basin’ in the Geldie. Note location of footpath where finds were initially discovered. © Graeme Warren

structure c 3 x 2.2m in size with a central fire-setting – presumably a tent. The preservation of this evidence is likely because the site has never been cultivated: whilst sites are hard to find in mountain landscapes, they can be very well preserved.

The flint assemblage is very specialised, mainly comprising the debris from repairing and replacing the flint components of composite tools made from wooden hafts with inserted stone cutting edges or tips. Remarkably, microscopic analysis of patterns of damage on the edges of these tools suggests that within the tent some areas were specifically associated with processing of animal products, including stone tools with characteristic impact fractures from use as a projectile.



3 Excavation at Caochanan Ruadha, 2014. Each find bag marks the location of an artefact. © Graeme Warren

It is likely that this structure was only occupied for a very short time period, perhaps only a night or two. It is located on a hill side with other

signs of activity, one of which appears to have taken place a little prior to 6200 BC. It is possible that this was a location used repeatedly – a familiar place to visit. We can't be certain why it was visited but might again assume that it was during the summer. We have evidence for hunting, and it is possible that people came here to hunt. But they may also have been travelling through this natural communication route from the Dee to the Feshie and simply hunting whilst travelling. Remarkably, the occupation of the site is broadly contemporary with a key deterioration in climate in the northern hemisphere – the so-called 8200 BP event. This dramatic cooling, caused by changes in North Atlantic Ocean Circulation, had a significant impact on the climate and vegetation of Scotland, and it is possible that glaciers reappeared in the high corries at this time. It is an unexpected time to find visitors to the Geldie.

Further work

Following the completion of the UDTP, further work led by UCD School of Archaeology has sought to uncover further evidence of Mesolithic activity in the Cairngorms. This includes two ongoing projects: excavations at Sgòr an Eòin, and an attempt to predict likely site locations in the high mountains.



4 Overview of river terrace at Sgòr an Eòin. Our site is located to the right of our tent (blue). © Graeme Warren

Survey work undertaken by a UCD student team in 2015 identified three stone tools in an area of eroded peat associated with a small water course on a flat well drained river terrace on the east bank of the Dee at Sgòr an Eòin at c 475 m asl (photograph 4 on previous page). The terrace, which is about 15 m above the Dee, is of Late Glacial age, and in the early Holocene would have provided a well-drained vantage point immediately upstream of a notable valley pinch point. The area would have been wooded, with willow and birch woodland giving way to pine over time. Excavations on site were planned for 2019 but curtailed by the presence of breeding birds during the fieldwork seasons, and in 2020 they were cancelled because of Covid-19.



5 Excavation at Sgòr an Eòin, 2021 facing up Glen Dee.

© Graeme Warren

We were delighted to be able to conduct test excavations in 2021 (photograph 5 above). These offer a preliminary insight into the site here, with more work planned for 2022.

Our test excavations suggest that this is another very small site, with the main area that lithics were recovered from probably less than 5m in extent. Worked stone is quite rare, with a total of only 46 found so far. They are small, and frequently burnt. Formal tool types are also rare,

although two characteristic manufacturing by-products do date the site to the Later Mesolithic period. The site today is very badly drained, but this is due to post-Mesolithic landscape change. At this early stage it is difficult to interpret the nature of activity at Sgòr an Eòin but it is superficially similar to Caochanan Ruadha: a small site, with a limited number and diversity of stone tools, located at about 500m asl in places on good communication routes and with good views.

A new project based in UCD and started in September 2021, aims to help provide better information about the hunter-gatherer use of high mountain landscapes in the Late Glacial and Early Holocene and to contribute to decisions about how to manage these landscapes. *Looking Up* is a collaboration between Graeme Warren (UCD Archaeology), Sam Kelley (UCD Earth Sciences) and Alice Doughty (University of Maine) funded by the Irish Research Council's COALESCE scheme (2021-2023). It combines geological and archaeological perspectives on the high mountain landscapes to try and predict where archaeological sites might be. More specifically, geological techniques (photograph 6 below) are used to get better dating information about the deglaciation of the Cairngorms, and this contributes to the construction of models of the location and extent of the ice sheet over time.



6 Sampling in the high Cairngorms to help refine the chronological models of ice retreat.

© Graeme Warren

This, in combination with previously existing geomorphological maps, means that we can reconstruct how key aspects of the landscape changed over time and when areas might have become available for settlement. A key component of this research is exploring the location of areas on the high plateau that hold long lasting snow each year. These are important places for animals to congregate and might therefore have been attractive places for hunters to target. (The longest lasting snow, such as the famous Sphinx, are located deep in corries which would not be suitable places for archaeological prospection).

Summary

The recent evidence for Mesolithic activity in the Cairngorm mountains suggests that the ways in which hunter-gatherers used this landscape in the deep-time past was varied. Some locations were returned to repeatedly over centuries and millennia, and these sites seem to indicate a range of activities taking place. Other sites appear to have been more specialised, or perhaps just used for less time. It is early days yet, but the evidence from Caochanan Ruadha and Sgòr an Eòin may suggest a pattern of using raised ground at about 500m.

At present the evidence for hunter-gatherer use of mountains in Scotland is different in character to elsewhere in Europe. We do not yet have sites in the higher reaches of the mountain landscape, although Looking Up aims to identify these. We are still seeking to understand the precise strategies that brought people into the mountains and how they influenced these mountain landscapes. More research is needed, but the evidence uncovered to date suggests that this will be widespread, if hard to find. Field survey and excavation is critical and has the chance to transform our understanding of the earliest prehistory of Scotland's mountains.

How can I contribute?

Many of these sites are most likely to be found through identifying stone tools – typically small flakes and blades of flint (although other materials were used in prehistory these can be hard to identify). The use of flint offers us one benefit in trying to find these sites: because flint is not naturally present in the Scottish mountains it looks distinctive enough to catch the eye. The people with the best chance of finding stone tools

in the mountains of Scotland are those who spend the most time there – people who work in these landscapes or those who spend time hillwalking and exploring them. If you find something, please do the following:

1) Record its location with photographs – close ups and landscape settings.

2) Get spatial information about the find (grid reference, or tag position on a phone/GPS). Try to reduce as much as possible any potential damage to the object and do not clean it or attempt to apply any substances to it (but if an object is wet and made of wood or textile it is a good idea to keep it damp by keeping it with some of the soil in which it was found and keeping it in a plastic bag).

3) Most importantly, when you get back, please report the find to Treasure Trove as quickly as possible using the online form (<https://treasuretrovescotland.co.uk/information/information-for-finders/>). Objects can also be deposited with your local museum or Local Authority Archaeologist. As with any finds in Scotland, stone tools are subject to Treasure Trove (<https://www.digitScotland.com/what-if-i-find-an-artefact-a-beginners-guide-to-treasure-trove/>). If you do find stone tools in the mountains, especially in the Cairngorms, please also email me!

See also: <https://www.digitScotland.com/how-you-can-help-find-prehistoric-hunter-gatherers-in-the-scottish-mountains/>

Acknowledgments

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Further Reading

There are several short introductions to the Mesolithic in Scotland:

Wickham-Jones, C.R. 1994, *Scotland's First Settlers*. London. Batsford/Historic Scotland.

Finlayson, B. 1998, *Wild Harvesters: The First People in Scotland*. Edinburgh. Cannongate.

Warren, G.M. 2005, *Mesolithic Lives in Scotland*. Stroud. Tempus.

The excavation report from Chest of Dee, which summarises the Caochanan Ruadha excavations is open access

Wickham-Jones, C.R., Noble, G., Fraser, S.M., et al. 2020, New Evidence for Upland Occupation in the Mesolithic of Scotland.

Proceedings of the Prehistoric Society **86**, 13-42.

(<https://www.cambridge.org/core/journals/proceedings-of-the-prehistoric-society/article/new-evidence-for-upland-occupation-in-the-mesolithic-of-scotland/5C6A4D9DF6F5321A0BF5A37BE6712453>)

Dig it Scotland have a short article on how you can help find Mesolithic sites.

<https://www.digitScotland.com/how-you-can-help-find-prehistoric-hunter-gatherers-in-the-scottish-mountains/>

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