Society of Antiquaries of Scotland

SCOTTISH ARCHAEOLOGICAL INTERNET REPORTS

e-ISSN: 2056-7421

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How to cite:
MacGregor, G 2019 'Mesolithic and later activity at North Barr River, Morvern', *Scottish Archaeological Internet Reports* 84. https://doi.org/10.9750/issn.2056-7421.2019.84

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Mesolithic and later activity at North Barr River, Morvern

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Funding
Forestry and Land Scotland

Forestry and Land Scotland | Coilltearachd agus Fearann Alba

e-ISSN: 2056-7421
https://doi.org/10.9750/issn.2056-7421.2019.84
Published by the Society of Antiquaries of Scotland.

Society of Antiquaries of Scotland
National Museums Scotland
Chambers Street
Edinburgh EH1 1JF
United Kingdom

Managing editor: Catherine Aitken
Copy-editor: Helen Bleck
Production: Raspberry Creative Type, Edinburgh

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1. ABSTRACT

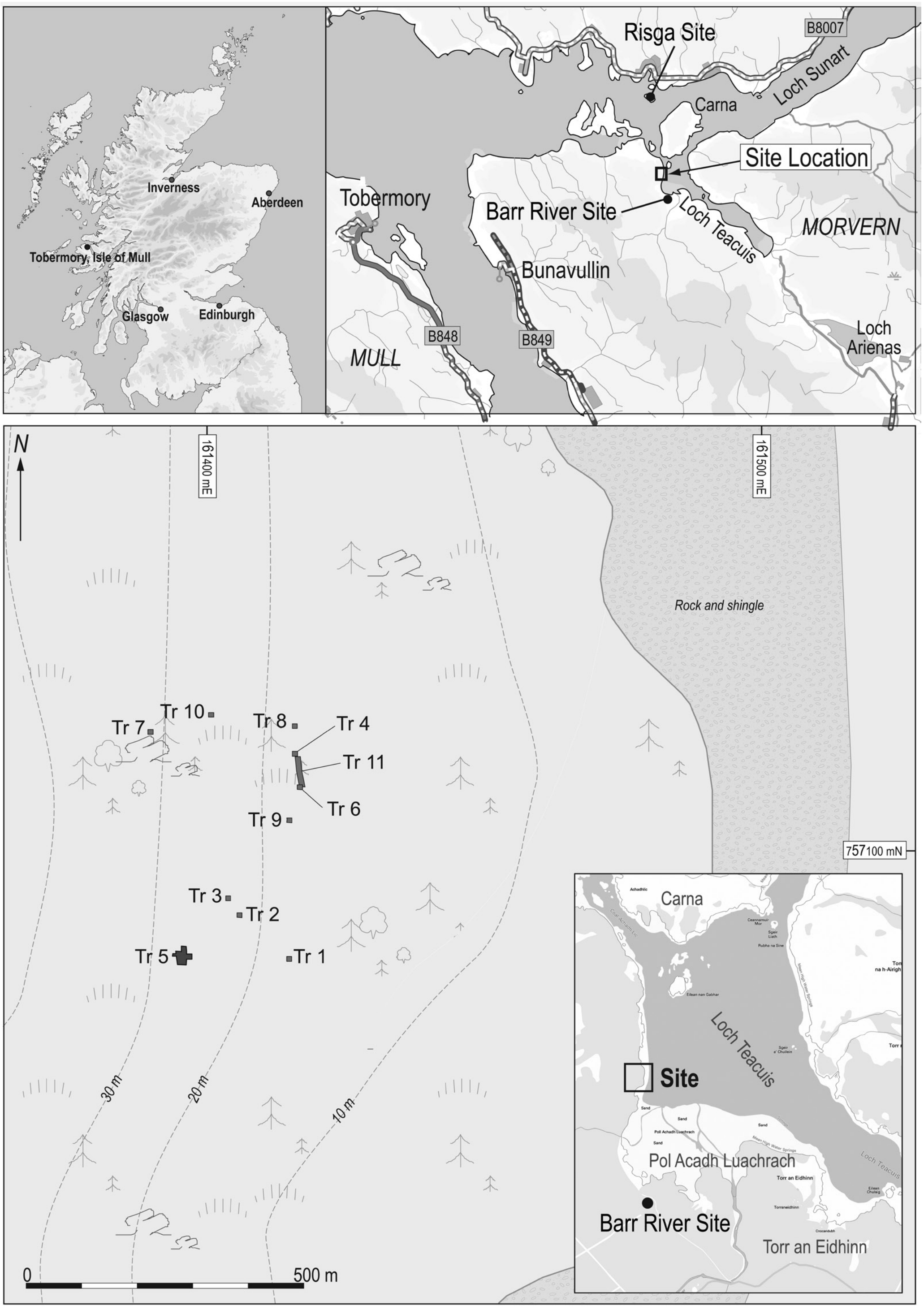
At North Barr River, Morvern, inspection of forestry planting mounds on a raised beach terrace identified a chipped stone assemblage associated with upcast deposits containing charcoal. An archaeological evaluation of the site, funded by Forestry Commission Scotland, sought to better understand the extent and character of this Mesolithic and later prehistoric lithic scatter. The lithic assemblage is predominantly debitage with some microliths and scrapers. The range of raw materials including flint, Rùm bloodstone and baked mudstone highlights wider regional networks. Other elements, including a barbed and tanged arrowhead, belong to later depositional episodes. Two mid-second millennium BC radiocarbon dates were obtained from soil associated with some lithics recovered from a mixed soil beneath colluvial deposits. The chronology of a putative stone bank or revetment is uncertain but the arrangement of stone may also date to the second millennium BC.

2. INTRODUCTION

Inspection of machine-dug planting mounds at North Barr River, Morvern, for broadleaf trees in a previously afforested area of conifer plantation yielded struck flint and other pieces which indicated the presence of a prehistoric site. This led Forestry Commission Scotland (FCS) to fund an archaeological evaluation from 4 to 9 October 2010, undertaken by Glasgow University Archaeological Research Division, in order to inform land management plans (MacGregor, Becket & Sneddon 2010a). This paper presents the results of this evaluation and the analysis of the lithic assemblages recovered from North Barr River, placing them in a wider regional and national context.

3. SITE LOCATION AND PROJECT BACKGROUND

During the machine excavation for broadleaf tree planting in May 2010, Pete Madden (FCS) collected several lithic artefacts from a discrete area on a coastal terrace overlooking Loch Teacuis (Illus 1). Visual inspection of the planting mounds by FCS archaeologist Matt Ritchie produced further lithics and revealed that charcoal and ash-rich sediments had also been dug through during creation of the planting mounds, which suggested the potential for in situ preservation. Assessment of the collections identified a dominant Mesolithic component as well as later prehistoric elements indicated by the initial find of a barbed and tanged arrowhead (Finlay



Illus 1 Site location

2010). Four microliths picked up by Steven Birch in August that year are also discussed below.

Located in Morvern, Lochaber District in Highland Region, the North Barr River site (NGR: NM 61430 57082) is situated on the east-facing slopes of Tom nan Eildean, overlooking and to the west of the estuary of Barr River and Loch Teacuis (Illus 1). The site is located at about 10m OD on a distinctive terrace, measuring up to *c* 70m north to south by *c* 25m east to west. Its western extent is defined by a steep slope representing a former shoreline. The geology across most of the site is Late Glacial raised beach deposits of gravel sands and silts and clays, with further deposits of marine beach deposits on the eastern fringe. The solid geology consists of granofelsic psammite belonging to the Morar Group with a microdiorite and lamprophyre dyke and microgabbro and basalt dyke in proximity (British Geological Survey 1977).

Several Mesolithic sites are known in the vicinity: the island of Risga, well known for its shell midden, is visible to the north (Lacaille 1954; Pollard 1996; Pollard 2000; NMRS no.: NM65NW 22) and a scatter site at Barr River, excavated by the late John Mercer in 1972, offers the closest parallels (Mercer 1979; NMRS no.: NM65NW 5). There are a few other Mesolithic scatters from Morvern, such as Acharn Farm (Thornber 1974a; Rich-Gray 1975; NMRS no.: NM65SE 6). Later prehistoric activity is known in the wider region, with a barbed and tanged arrowhead having been discovered *c* 2.5km to the south and other forms of Bronze Age activity are attested by several burial cairns (for example, Ritchie & Thornber 1975; Ritchie & Thornber 1988; NMRS no.: NM64NW 5).

4. FIELDWORK RESULTS

Gavin MacGregor, Alistair Becket and David Sneddon

A more detailed account of fieldwork undertaken in October 2010 can be found in the data structure report (MacGregor, Becket & Sneddon 2010b). In summary, the aims and objectives of the evaluation were to ascertain the character, extent and date of any archaeological site determined by:

- surface collection of lithic artefacts, including quartz, from all exposed mounds on the terrace;
- excavation of testpits across the terrace (*c* 1m square) to evaluate the extent and preservation of in situ deposits and determine the likely impact of mounding on any subsurface archaeological deposits present;
- excavation of two hand-dug trenches to evaluate the extent and preservation of in situ deposits and investigate the impacts of mounding and earlier site operations on any artefacts and deposits present.

4.1 Surface collection

Struck lithics were collected from all exposed mounds on the terrace in October 2010 at the start of the evaluation. Finds were collected to a 1m level of resolution and surveyed to provide a plot of artefact distribution (see Illus 2). Surface collection recovered 140 worked lithics from 66 planting mounds, including two microliths and three microlith fragments (see Table 2). This confirmed the broad spatial distribution of the initial FCS surface collection.

4.2 Test pits

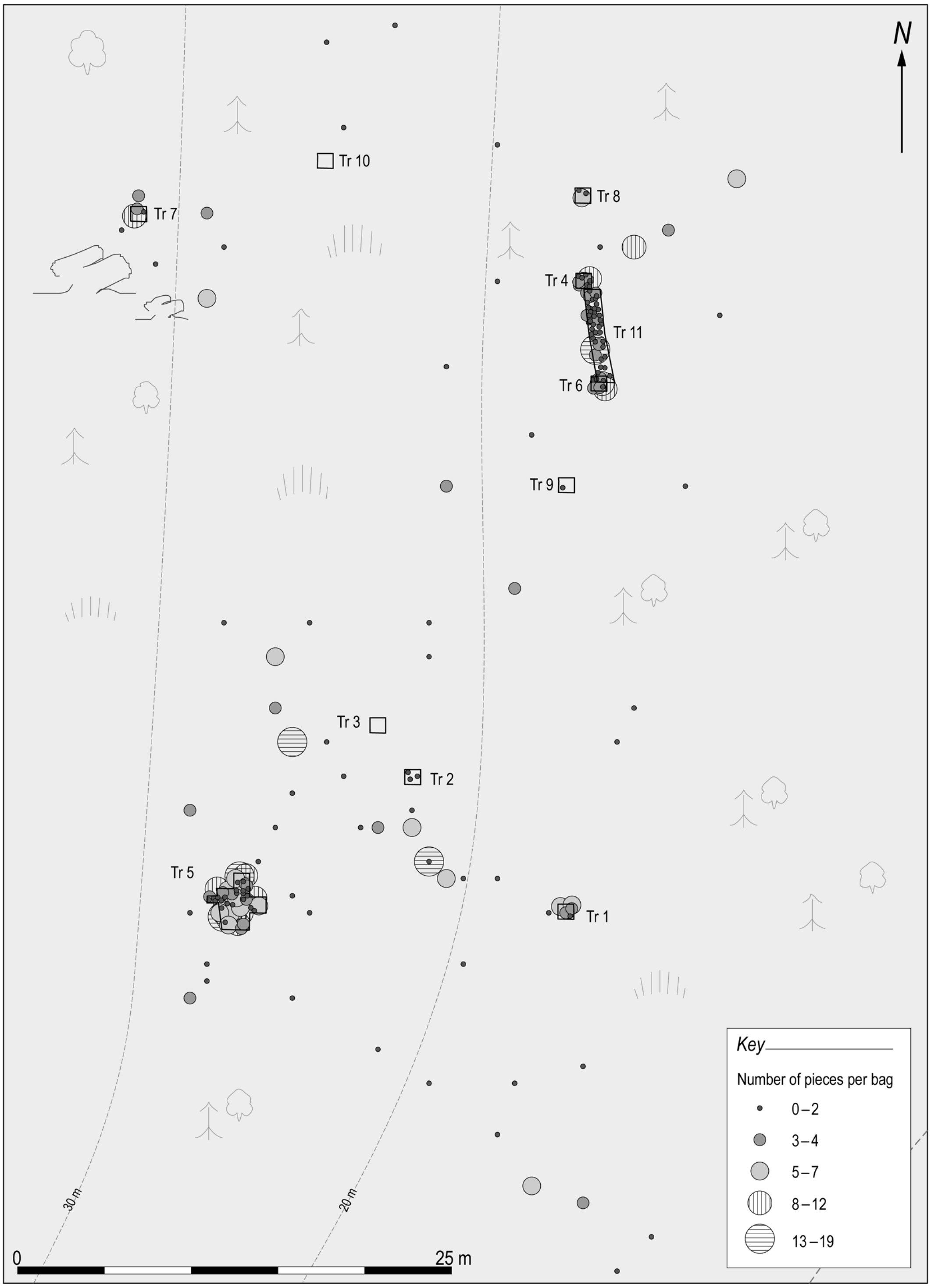
Hand excavation was undertaken of ten testpits across the terrace (*c* 1m square). The finds were recovered to a 0.25m level of resolution (Quads A–D and by 0.05m spits) and a bulk sample was typically taken from each pit for lithic and carbonised macroplant recovery. Two test pits (TP3 and TP10) were abandoned due to the difficulties presented by ground water *c* 0.45m below the surface.

In most cases the test pits (TP1, 2, 4, 7, 8 and 9) revealed that beneath the topsoil there was an interface layer of mixed orange, grey and brown sands and silts which lay on the natural orange sand and clay subsoil. There was some evidence for leaching in the profiles and areas of iron pan on the surface of, and extending into, the subsoil. In several cases this was penetrated by old tree roots, relating to the previous conifer plantation. The interface layer appeared to be heavily mixed, probably as a result of bioturbation. Struck lithics were generally recovered from both topsoil and the interface layers. Towards the base and corner of TP6 was a potential feature defined by a concentration of oak charcoal (see Miller, Section 7 below). Unfortunately, there was ground water in a critical location which precluded further investigation.

4.3 Evaluation trenches

Two areas were subject to further evaluation through the expansion of the initial testpits to establish the extent and preservation of possible in situ deposits. The first was located on the main terrace, where there was an apparent lithic concentration, a linear trench (Tr11), measuring 5m by 1m incorporated TP4 and TP6. After removal of turf and topsoil, a mixed layer (C011= 008 in Tr6) containing struck lithics was present. It was excavated in 0.05m-deep spits, and artefacts were recovered three-dimensionally within the trench. Pieces were concentrated in the upper spit, with numbers falling off significantly in the second spit. No archaeological features were present and the lower deposits were not excavated.

The second area, Tr5, was located at the foot of the slope which defined the western extent of the terrace and measured up to 4m north to south by 2.7m east to west (Illus 3). Evaluation continued at this point because a notable concentration of struck lithics was present in TP5, which appeared to relate to a sealed soil horizon (C013), and to be associated with a concentration of stone (Deposit 015 (D015)) which was potentially archaeological. The extended area revealed identical deposits to those in the original test pit. Beneath the turf and topsoil was a colluvium layer (C009); this was excavated in spits down to the surface of the darker silt/sand (C013). The assemblage from this lower deposit was predominantly small fraction debitage with a few larger flakes and a mixed range of retouched pieces, including microliths and scrapers.



Illus 2 Artefact distribution

Illus 3 Excavation plan and section through Trench 5

The concentration of sub-angular and sub-rounded boulders and cobbles (D015) was revealed further, and some sat completely or partially upright within D013 (see Illus 3). The concentration of stone appeared to curve slightly from a north/south orientation round to the south-south-west and headed towards a very large boulder that had collapsed from further up-slope which seemed to lie on top of D013. The base of D013 was not reached within a small excavated slot due to ground water. The stones (D015) were concentrated in a rough curvilinear shape and sat within what appeared to be a relatively undisturbed deposit (D013), suggesting that they are archaeological in origin.

4.4 Charcoal-burning platform

Located closer to the shore and beyond the concentration of struck lithics found on the terrace are the remains of a charcoal-burning platform. It is a subcircular feature about 2.5m in diameter, associated with which is a marked quantity of charcoal visible on the surface.

5. CHIPPED STONE ASSEMBLAGE

Nyree Finlay

In addition to the excavated finds, three episodes of surface-collected material are considered here: the initial FCS assemblage that led to the identification of the site (Finlay 2010); four microliths found by Steven Birch in August 2010; and pieces recovered from the evaluation phase surface collection. All of the lithic material was classified using standard terms and methodologies for Scottish Mesolithic assemblages (after Wickham-Jones 1990; Finlayson, Finlay and Mithen 2000). For the purposes of this discussion, the entire assemblage is presented and treated as a unitary entity with subdivision by mode of recovery, trench and context where appropriate.

Most stages of lithic reduction are present, including cores, chunks, flakes and blades as well as small-sized debitage (less than 10mm max. dimension). This includes small complete knapping flakes of *c* 5mm length or less as well as broken fragments of larger debitage pieces. The retouched component is characterised by the microliths and scrapers, with a few other retouched pieces including some diagnostic later prehistoric forms. A diverse range of lithic raw materials are used including flint, bloodstone, baked mudstone, quartz and several other raw materials such as jasper and chalcedony. The condition of the evaluation assemblages is mixed and for the non-quartz component predominantly patinated (white surface cortication 46 per cent) with at least 21 per cent burnt. Seven pot-lid heat spalls were recovered (three <10mm) from Tr5, Tr11 and as surface finds. Slight iron staining from local iron pan is present on the patinated surface of several pieces and three pieces have random plant gloss.

5.1 Surface collections

5.1.1 Initial identification of the site: the FCS collection

In addition to the initial find of the small barbed and tanged arrowhead, Pete Madden collected a further 21 pieces (six blades, one core, four chunks, eight flakes and two pieces of smaller debitage (<10mm max. dimension) from across the wider terrace area (FCS environs). Of note is an intensively worked platform core piece with a bipolar final stage and another flake that may also directly relate to this reduction episode. A further 88 pieces derive from collection made during the course of about two hours by three people, which yielded a few microlithic forms and a notable blade assemblage (Finlay 2010). A notable feature was the relatively high blade:flake ratio. The overall lamellar index is 27 per cent (after Bordes and Gaussen 1970), which is also associated with a preponderance of tertiary pieces. The four cores comprise a couple of flint platform cores, an intensively worked remnant and a baked mudstone opposed platform blade core with flake final removals (FCS101). The presence of complete small debitage flakes (*c* 60 per cent of the <10mm fraction) also indicated a locale of primary knapping activity.

Extensive quartz shatter was noted but none collected (Matt Ritchie, pers comm). The FCS collection is presented in Table 1.

An additional four geometric microliths were collected by Steven Birch in August 2010 and these comprise three backed bladelets and a scalene triangle. Two appear to have been fashioned in grey flint but all are patinated and in keeping with those discussed below from the evaluation and FCS collection.

5.2 Evaluation assemblage

In excess of 950 pieces were examined from the fieldwork undertaken in October 2010 including natural and unworked quartz and other pieces subsequently discounted from the analysis presented below. A summary of the assemblage is presented in Tables 2 and 3. Of this, 358 pieces were obtained from the bulk samples taken for palaeo-botanical and artefact recovery, constituting 79 per cent small fraction (<10mm) debitage and three microliths.

5.3 Test pit assemblage

Individual test pit assemblages largely mirror the profile of the surface-collected material and are characterised by debitage in which flint, other siliceous materials and quartz are present. No discrete spatial differences were identified and the mixed character of this assemblage is evident; there is a reworked bipolar flint chunk from TP8.

Table 1 FCS surface collection

Initial FCS surface collection	No.	Flint	Baked mudstone	Other
Primary technology				
Chunk	14	12		2
Core	4	3	1	
Blade	24	22	1	1
Secondary blade		*4*		
Inner blade		*18*		
Flake	64	62	1	1
Primary flake		*2*		
Secondary flake		*22*	*1*	*1*
Inner flake		*38*		
Indeterminate blank (inner)	1	1		
Pieces less than (<10mm max dimension)	33	33		
Secondary technology				
Barbed and tanged arrowhead	1	1		
Microlith	1	1		
Other microlithic forms	2	2		
Notch and snap	1	1		
Other retouched pieces	5	5		
Total	**150**	**143**	**3**	**4**

Table 2 Secondary technology (FCS surface collection and evaluation assemblages)

Type	Total	Flint	Quartz	Bloodstone	Indet.	FCS surface	Surface	TP1	TP4	Tr5 & FCS surface	Tr8	Tr11
Microliths and related												
Crescent	3	1		1	1		1			1		1
Backed bladelet	4	3			1	1	2			1		
Leaf point	1	1								1		
Irregular/indet.	4	2		1	1	1	1			2		
Microlith fragments	6	2		1	3	1	2			3		
Truncation	2	1			1					2		
Notch and snap truncation	1	1				1						
Scrapers												
Convex short	2	2									1	1
Angled/side	2	1			1					2		
Other end scrapers	2	1			1			1				1
Irregular scraper	1	1								1		
Perfunctory	4	4				1				2	1	
Perfunctory forms	8		8				1	1	1	4		1
Other retouched pieces												
Semi-invasively retouched blade	1	1								1		
Other retouch and fragments	4	4				2				2		
Serrated edge-damaged blade	1	1								1		
Barbed and tanged arrowhead	1	1				1						
Total	**47**	**27**	**8**	**3**	**9**	**8**	**7**	**2**	**1**	**23**	**2**	**4**

Table 3 Excavated assemblage by raw materials (excluding retouched pieces)

Raw material/type	Evaluation surface collection	TP1	TP2	TP4	TP5 and Tr5	TP6	TP7	TP8	TP9	Tr11
Flint and other siliceous material (indet.)										
Core	*1*		*1*		*7*	*2*				
Microblade platform					1					
Non-specific (blade/flake) platform	1		1		4	2				
Core fragment					2					
Chunk	9	3	2		16	1		1		5
Flake	*39*	*10*	*2*	*6*	*87*	*7*		*2*	*1*	*11*
Primary flake	3	1		1	5					1
Secondary flake	10	5	1	2	27	2		1	1	2
Inner flake	26	4	1	3	55	5		1		8
Blade	*20*	*0*	*0*	*2*	*17*					*1*
Primary blade										
Secondary blade	2				3					
Inner blade	18			2	14					1
Small fraction (<10mm)	24	5	1	6	139	12		5	1	12
Quartz										
Split pebble					1					
Core					1	1			1	
Chunk	17	9	3	6	44	8	7			14
Flake and splintered flake	*10*	*2*			*9*	*2*	*1*	*1*		*4*
Primary flake	1				1					
Secondary flake	7	2			1		1			
Inner flake	2				7			1		
Blade (secondary)										1

Table 3 *cont.*

Raw material/type	Evaluation surface collection	TP1	TP2	TP4	TP5 and Tr5	TP6	TP7	TP8	TP9	Tr11
Flint and other siliceous material (indet.)										
Small fraction (<10mm)	8	21	5	40	52	21	18	2	1	12
Other materials										
Agate chunk				1						
Agate pebble					1					
Baked mudstone platform core					1					
Baked mudstone chunk	1									
Bloodstone flake	2	1			1	1				1
Bloodstone <		1			3					
Chalcedony pebble					1					
Chalcedony chunk										2
Chalcedony blade	1									
Chalcedony <					1					
Unidentified chunk					1					
Jasper flake	1									
Total	**133**	**52**	**14**	**61**	**382**	**53**	**26**	**11**	**4**	**59**

5.4 Trench 5 and Extension

The assemblage is dominated by small fraction debitage. Overall it is quite diverse and chronologically mixed. This area was very productive in terms of retouched pieces but this may also be a reflection of increased lithic recovery. There is a clear Mesolithic element, including a fine leaf point microlith, truncations and some of the larger debitage. This area also yielded several pieces of bloodstone.

There are a couple of large flint blades but these actually appear to be later prehistoric in character – one is a semi-invasive retouched form from the upper deposits (SF96.2) and there is also a serrated edge-damaged blade with some random plant gloss on the ventral surface (SF128.1, length 41mm). Both forms are typical of Later Neolithic–Bronze Age forms and this date range would also fit some of the scrapers. These indicate the undertaking of Bronze Age processing and craft activities. Overall, the character of the material is quite mixed and the cores are mostly non-specific platforms and are quite heavily worked.

5.5 Trench 11

The assemblage is chronologically mixed, with a bloodstone crescent microlith as well as a large convex scraper that is more in keeping with later prehistoric assemblages. There is a worked quartz component here comprising a blade, worked chunks and small fraction debitage. The flint assemblage is also quite diverse in terms of technology and events, and includes quite a large nodule opening flake.

5.6 Raw materials

Several different lithic raw materials were identified and traditions of lithic use in the wider region are diverse and complex (see Wickham-Jones 1986; 1990; 2004). As noted elsewhere, the patinated and burnt condition of an assemblage constrains raw material identification (Wickham-Jones 1990), and this is also true here, with some of the material classified as flint best considered within a broader, more general, class of chalcedonic silica (after Wickham-Jones 2004). Indeed, due to patination/burning, nearly half of the excavated non-quartz assemblage, the raw material could not be conclusively identified.

5.6.1 Flint

Around 75 per cent of the excavated non-quartz assemblage is considered to be flint. All of the pebble flint exploited appears to have been derived from beach or secondary fluvio-glacial deposits and the use of pebble material is indicated by the presence of heavily battered and water-rolled cortex. Where visible the original internal colour of the pieces indicates the predominance of light grey and brown flint pieces with the occasional darker grey pebble.

The variation in the colour and texture of material is typical of the variation found more generally within Scottish west coast assemblages (Mithen 2000; Wickham-Jones 2008). It is likely that flint and some of the other non-quartz was collected from neighbouring raised beaches or other similar regional deposits. The availability of flint in the Morvern area has been commented on in the past (for example, Lacaille 1954). One FCS split beach flint pebble gives a good indication of the probable average length of the pebbles exploited, at *c* 35mm in length, but the majority of pieces are smaller than this. It is evident from a few larger blanks that are less than 55mm max. dimension that medium-sized flint pebbles were also exploited, such as that used for a large Tr5 blade (FCS101, length 51mm).

5.6.2 Quartz

Quartz is a readily available raw material in the immediate environment and one that was used extensively across Scotland in prehistory (Ballin 2008). The challenges in identifying worked quartz are well known and need not be repeated at length here. The quartz component was divided into three categories – unmodified pieces mostly weathered and sub-rounded to more angular pebbles and chunks (not considered further here); pieces where stuck attributions are weak/dubious (accounting for around 25 per cent of the hand-collected quartz assemblage, much of this within the <10mm size class) and pieces with genuine fracture attributes. Both of the latter are presented in Tables 2 and 3.

Several different types of quartz are present; the majority fall within Ballin's (2008: 46) milky quartz class. These were divided on the basis of colour, texture and inclusions into four main types:

Type A: 72 per cent (of the quartz assemblage), semi-translucent, fine-grained white, frequently with dark mineral inclusions and some golden micaceous cortex that resembles glitter.

Type B: 18 per cent, quite fine-grained but more variable in grain size and poorer quality than Type A, this also has brown–dark green, as well as grey mineral inclusions.

Type C: 3 per cent, a matt white quartz with some reflective fine grains (Ballin 2008: fine-grained quartz category), occurs primarily as weathered pieces.

Type D: 10 per cent, a white, reflective quartz with a slightly greasy texture with variable grain size; some of this material is burnt and would fall into a coarse-grained quartz category (Ballin 2008).

The more milky, semi-translucent types (A and B) are those which have more conclusive traces of deliberate reduction, but there is no clear patterning in the association between types and raw materials, and the raw material variation should be seen as something of a continuum. Some vein quartz is evident as well as the more common weathered blocks. There are also some larger tabular blocks with a distinctive gold micaceous surface from Tr6 and Tr11 in particular. Several of these tabular pieces have single flakes or removals predominantly from one side. While this could reflect quite expedient deliberate use and reduction, artificial fracturing through machinery and other natural agencies is also likely to account for some of the patterning seen, given that a few of the removals are very fresh.

The quartz assemblage is dominated by chunks and small fraction debitage. The evidence for the deliberate reduction of quartz is quite limited, but this may be a reflection of its availability and the expedient use of this resource without recourse to systematic reduction that naturally enhances the archaeological identification of utilised material. There is some evidence for systematic cores: one is a large, weathered block with anvil-supported removals from one side only, which is a probable core/scraper from Tr6, and there are a couple of the large tabular blocks, again with removals predominantly from one side only, from Tr5 and Tr11. Some of the other tabular pieces appear simply to be broken or have one end fractured off. These are of a totally different size and character from the technological strategies seen in the other raw materials, with pieces of 70–123mm max. dimension present.

While some of the other quartz chunks are clearly struck, there is actually little evidence for systematic reduction and comparatively few bipolar pieces. The impression is of casual exploitation of this resource coupled with the high potential of pseudo-modified pieces. There are some with what appears to be genuine secondary retouch but in many instances this is quite perfunctory, random and irregular in character. A couple of chunks from Tr5 have naturally sharp converging points but there is nothing systematic in this element of the assemblage. A few of the flakes and some of the small fraction debitage do signal an element of quartz working by both platform and bipolar strategies but the frequency of bipolar signatures at 9 per cent is notably low.

5.6.3 Baked mudstone

The pieces of a grey to bluish material resemble the baked mudstone on Skye (Wickham-Jones, pers comm), although we should not automatically assume this is the source since other regional outcrops are likely and at least one piece is from an abraded pebble. There is a large worked chunk that has abraded surface cortex (SF203) and a finer-textured blue/grey basal rejuvenation flake from a probable flake core that has a length of discrete fine semi-abrupt removals and may have served as a scraper (SF99.1). While attributed to this material class it has quite a fine-grained texture and may be geologically distinct. Three pieces of light grey baked mudstone came from the FCS surface collection, including a narrow-blade platform core, worked for only a quarter of the circumference (FCS110, length 30mm). There is also a decent blade from a different core, length 36mm, and a smaller flake fragment.

5.6.4 Rùm bloodstone

Around ten pieces of Rùm bloodstone were identified and counts in this material are likely to be notably under-estimated. The colour and texture of this material varies from a bluish matrix with red inclusions through to light pink. Of note are a couple of crescent microliths and some small fraction debitage, suggesting that it was probably worked on site rather than simply reflecting tool discard.

5.6.5 Chalcedony, jasper and agate

Other identifiable raw materials include a blue/grey chalcedony including an intensively worked and exhausted multi-stage platform core which has a final bipolar stage (SF35). There is also a proximal blade fragment (<10mm) in this material and it may actually be bloodstone variant. There is also a single small flake of fine-grained deep red jasper. Agate is represented by a single chunk and an unworked white/translucent pebble.

5.7 Technological character of the assemblage: primary technology

Two technological strategies are represented: platform and bipolar reduction. The evidence for bipolar or anvil reduction is actually very limited and the absence of bipolar cores is noteworthy, although there is evidence for the more controlled anvil support of cores. Some evidence of bipolar stages is visible on two of the microblade cores; one appears to predate the removal of blades and probably relates to opening. The main technique is platform reduction; most removals are unidirectional and this can be seen on the scar patterns on cores and blanks.

There is some evidence for opposed and alternating platform techniques. Strategies to rejuvenate platforms and address knapping errors are frequent in the assemblage, including platform rejuvenation blades and also both core-trimming blades and basal core rejuvenation pieces. These strategies are noted in other Scottish Mesolithic pebble assemblages, where the variable quality of the raw material demands flexibility on the part of the knapper to correct errors and maintain the core face (Finlay 2008). This was clearly an issue for the knappers at North Barr River, for several of the pieces have visible flaws and vugs. The general impression is that the knapping of siliceous materials is very competent in character and well executed, which is also reflected in the relative frequency of blades.

5.7.1 Cores

Most of the cores are quite intensively worked, and some of these exhibit earlier stages of removals. The majority are non-specific platform cores, less than 30mm in length. It is probable that many of these were blade platforms in their earlier stages with the final removals being flakes. Many have step and hinge terminations on the face and evidence of anvil support, rather than true bipolar knapping. The use of a supporting anvil is also seen on many of the flakes and blades and there is limited evidence for bipolar reduction, suggesting quite a controlled and parsimonious use of the raw materials. There is one flint microblade core remnant (Tr5, SF128.6) and a baked mudstone opposed blade platform core (FCS101). One baked mudstone single platform microblade core is on the side of a previously intensively reduced and bipolar worked piece, giving it a handled appearance; here the typical removals are only 10mm long by 4mm wide (core max. dimension 22mm, FCS103). In contrast, the quartz cores have a few often unsystematic removals predominantly from one side of a weathered or tabular block.

5.7.2 Flakes, blades and small fraction debitage

The high lamellar index noted in the initial FCS surface collection is also seen in the evaluation phase surface collection. This is not seen in the individual test-pit assemblages, where blades are not common, the only exception being Tr5, where it is 16 per cent (quartz excluded and also in size profiles below).Here the assemblage is chronologically mixed and several larger blades are present. Overall, the blade length dimensions range from 10mm to 51mm (average 24.0±9.49m, mode 22mm, n=40) with widths of 4–24mm (average 10±34mm, mode 10mm) with average thickness 3.65±2mm). This compares with the frequencies from the core dimensions, which are 17–35mm max. flaking dimension. Overall the flakes are variable and range from 5mm to 53mm (average 17.4±7.9mm, mode 10mm, n=130) and between

6mm and 47mm wide (average 14.7±5.6mm, mode 13mm) with thickness1–22mm (average 3.88±2.47mm, mode 4mm).

The presence of smaller debitage (<10mm in size) identifies that primary knapping waste is present in the form of complete small debitage flakes; this includes flint, bloodstone and quartz. Some of these flakes are less than 3mm long but the majority of this component are small chunks.

5.8 Technological character of the assemblage: secondary technology

5.8.1 Microliths

The most numerous category of retouched pieces are the microliths and microlith fragments. Backed bladelets are the most common form. There are three from the evaluation phase, one has irregular backing on one side (SF2010.122), another with angled retouch at the base (SF25) and one more typical backed form (SF35.2). One backed blade microlith which retains the bulb of percussion has abrupt backing along the right side that converges to form a natural point at the distal end (FCS59, length 14mm, width 5mm). There are three crescents, two are small, backed on one side, one in flint the other burnt with enclume retouch (SF108.2, SF5.3). There is also a larger pink bloodstone piece that could be considered in this category on a larger flake blank but equally may be non-microlithic (SF161.1). Another bloodstone piece is on the distal end of an irregular flake (SF123.9) that resembles a backed bladelet in form.

There is a single fine complete grey flint leaf point microlith from Tr5 (SF99.7). Another flint piece has irregular abrupt microlithic retouch around the four sides; some of this looks quite fresh and may simply be trample damage, but it can be classified as an indeterminate microlith form (FCS82). There are also six microlith fragments, most are too small to shed light on the original form and are quite different in type (SF2010.30, SF2010.100, SF28.11, SF42.9, SF173.3, FCS58).

5.8.2 Microlithic truncations

There are two retouched truncations, one a partially laterally retouched blade (SF129.4).Retouch on this piece may have been abandoned during backing due to blank thickness towards the hinge termination. There is also a proximal truncated blade with some fine lateral edge damage (SF128.5). Microlith bases appear to be predominantly trimmed, which might account for the lack of microburins and other truncations, although there is a single notch and snap truncation with a retouched notch on the proximal right side and a straight break (FCS60). Similar to a microburin formed to remove the bulb of percussion, but lacking the characteristic break facet, such pieces are relatively frequent finds in Scottish Mesolithic assemblages (Finlay 2000).

5.8.3 Barbed and tanged arrowhead

A small burnt grey flint barbed and tanged arrowhead. It has one vestigal barb, the other is slightly spatulate and a sub-rounded tang. Although fashioned using bifacial invasive retouch, this is largely limited to one face (length 25mm) and it is a Sutton-b type (after Green 1980).

5.8.4 Scrapers

The scrapers form a diverse collection of pieces; most are on flint. There are a couple of side scrapers (SF90.2, SF174.1) that have quite short lengths of semi-abrupt retouch and an angled side scraper (SF93.8). There are also a couple of irregular end scrapers (SF181), one on a blade core trimming flake (SF153). There is also a larger convex flint scraper (SF148) that has inverse retouch to create a convex end scraper at the proximal end; this piece is likely to be later prehistoric. Most of the others could be Mesolithic (for example SF72.6, SF153) as forms are quite variable, with somewhat irregular types often found on other west-coast Scottish Mesolithic sites (for example, see individual reports in Mithen 2000, for the southern Hebrides).

In addition, there are 12 more perfunctory forms, primarily on quartz chunks, where it is unclear whether the retouch is genuine modification. In a couple of cases, it is likely related to bipolar spalling (one flint, SF166.3). Natural fracture or later trample damage is most likely for these often unsystematic removals, but these are classified as perfunctory scraper forms here for they may reflect very casual use of tabular quartz blocks and chunks.

5.8.5 Other retouched pieces

Several pieces fall in this category: a flake (SF174.6) and a flake segment with some microlithic retouch (SF172). A burnt flint blade with semi-invasive removals along both lateral edges (SF96.2) is broken at the distal end and the retouch is quite poorly executed but it is likely to be a later prehistoric retouched knife form. From the FCS collection there is one broken retouched blade fragment with a length of fine abrupt retouch at the proximal lateral left side (FCS75). Another is a steeply backed blade (FCS83, length 25mm) with slightly invasive retouch along both extant sides which converges at an irregular squared point at the distal end with some cortex present and a fresher bending fracture at the proximal end. This is most likely a later prehistoric steeply backed piece as these have quite abruptly backed retouch, rather than a tanged point fragment (*contra* Finlay 2010). There is also a fine larger flint blade with serrated edge damage and random plant gloss on the ventral surface (SF128.1) which is also quite typical of Late Neolithic/Early Bronze Age forms.

6. COARSE STONE

Ann Clarke

Four potential anthropogenically modified stone objects were recovered from the excavations. Two sandstone slab fragments and a spall appear to be entirely natural in character. A plain hammerstone is the only obvious tool (SF84, TP4, C011*)*. This is a sub-oval pebble of fine-grained micaceous sandstone with localised areas of light pecking on various parts of the surface (max. dimensions length 53mm; width 47mm; thickness 38mm). Unlike cobble tools from other Scottish Mesolithic sites, it does not have distinguishing patterns of wear traces that would indicate the specific craft practices (Clarke 2009).

7. CHARCOAL ANALYSIS

Jennifer Miller

Samples were examined from selected contexts, including those processed for lithic recovery. A programme of charcoal analysis was also undertaken in order to provide materials for characterisation and AMS dating.

Flots from bulk samples were dried and sorted using Siraf tanks and standard methodology. Carbonised material recovered was not abundant and consisted entirely of small charcoal fragments of variable condition, see Table 4. Taxa identified included primarily oak (*Quercus*) and hazel (*Corylus*) with occasional willow (*Salix*) and birch (*Betula*).

Table 4 Charcoal remains identified from samples

Context		010	011	012	013	013	013	013	013	013	013	014
Sample		005	006	007	010	018	022	023	024	025	027	008
Trench		6	4	4	5	5(s)	5(s)	5(s)	5(s)	5(s)	5(s)	6
Volume CV >4mm		<5ml	<10ml	1 fgmt	<2.5ml	1 fgmt	<2.5ml	<2.5ml	<2.5ml	<2.5ml	<2.5ml	2.5ml
CV >1mm		–	–	–	<2.5ml	–	<2.5ml	<2.5ml	–	<2.5ml	–	<2.5ml
Charcoal	Common name											
Betula	birch	–	2 (1.0g)	–	–	–	–	–	–	–	1 (0.05g)	–
bark (cf *Betula*)	cf birch bark	–	–	–	–	–	–	–	–	–	1 (<0.05g)	–
Corylus	hazel	–	3 (1.5g)	1 (0.5g)	5 (0.4g)	–	1 (<0.05g)	1 (0.05g)	2 (0.1g)	1 (<0.05g)	–	–
Quercus	oak	7 (0.7g)	3 (2.1g)	–	3 (0.1g)	–	1 (<0.05g)	–	–	–	–	4 (0.2g)
Salix	willow	–	–	–	–	1 (0.2g)	1 (<0.05g)	1 (<0.05g)	1 (<0.05g)	1 (0.05g)	–	–

8. RADIOCARBON DATES

Two samples of carbonised remains of single entity short-lived species were submitted to the Scottish Universities Environmental Research Centre (SUERC) for AMS radiocarbon dating (Table 5). One was a sample of *Corylus* charcoal from C013; the second sample of *Salix* charcoal was also selected from this context to provide a control.

The radiocarbon dates clearly do not relate to the main phase(s) of activity represented by the lithic assemblage. They do, however, offer an insight into the chronology and nature of the depositional processes for some Tr5 deposits. Given that both samples returned a broadly similar date, this suggests a distinct phase of depositional activity in the mid-second millennium BC which lay down C013 or resulted in the intrusion of mixed charcoal into this deposit.

Table 5 Radiocarbon dates

Site	Sample	Material	Context	Description	Depositional context	Uncal	Cal 1-sigma	Cal 2-sigma	Delta-^{13}C ‰
North Barr River, Morvern	SUERC-37986	*Corylus* charcoal	013	Single entity	Layer sealed beneath colluvium	3245±35	1604–1453 BC	1610–1440 BC	−26.0‰
	SUERC-37987	*Salix* charcoal	013	Single entity	Layer sealed beneath colluvium	3340±35	1686–1538 BC	1734–1526 BC	−27.4‰

9. DISCUSSION

The investigations at North Barr River established that even with the impact of forestry operations there are archaeological remains preserved on the terrace, primarily on the western side due to protection by colluvial deposits. On the terrace itself archaeological deposits, indicated by one potential but unexcavated negative feature, appear to have been subject to bioturbation. At two locations, evaluation suggests that the lithic assemblage is distributed throughout a number of different sediments, primarily as the result of biological and erosional soil processes. In the case of Tr5, on a marked terrace at the foot of a slope, potentially in situ archaeological deposits are preserved beneath colluvium. The concentration of stones set within the subsoil defines the edge of break in slope at this point. That the arrangement is anthropogenic, with set upright stones, is clear and it could be structural in nature, although questions remain as to its exact character and chronology. While the range of Mesolithic structures is diverse (Wickham-Jones 2002) and includes stone settings (for example Lussa Wood, Jura (Mercer 1980; NMRS no.: NR68NW 4)), the likelihood is that this relates to post-Mesolithic activity, given the very mixed character of the lithic assemblage and dates.

The overall impression is of an extensive background lithic scatter in which several discrete phases of Mesolithic and later activity are represented. The closest Mesolithic site is that of Barr River (Mercer 1979; NMRS no.: NM65NW 5). It is clear that here the artefacts were present in hill wash, and some clearly derived from further upslope and in rather rolled condition. Test excavation did not recover in situ remains. Detailed information is limited but the assemblage of around 80 pieces was also heavily patinated or burnt. Four geometric microlith fragments and a

Illus 4 Aerial photograph, North Barr River site in centre (© FCS Photography by Caledonian Air Surveys)

microburin were found. Several bipolar pieces are illustrated (Mercer 1979, fig 2), but no mention is made of the character of the debitage and whether blades are frequent, and the whereabouts of the assemblage could not be established. Therefore it seems likely that the North Barr River site represents further evidence of quite widespread occupation along this coast, although at present the extent and character of that activity cannot be elucidated further. Nonetheless, the site is an addition to understanding the character of regional Mesolithic occupation. Located on the northern coastline of Morvern on a terrace with extensive views across Loch Teacuis, it is part of the wider 'fluid seascape of the west coast' (Birch 2006: 135) (Illus 4 and 5).

This fluidity is not only in terms of people's movement via water but also in terms of the sea level change, as evident through the raised beaches representative of former shore lines. The region would have been affected by the ice sheets of the Loch Lomond Readvance (Ballantyne 2004: 28–9, see fig 2.1). As Ballantyne discusses, following ice-sheet deglaciation the Western Highlands may have experienced significant levels of landslides through earthquakes due to glacio-isostatic uplift and tectonic stress (ibid: 34). The early Holocene sea level changes culminated in a Main Post Glacial Shoreline of about 10m (ibid: 37, fig 2.6) at some point between 7200 BP and 6000 BP in the region, and as the sea level rose above the Main Late Glacial Shoreline it may have sealed many early Mesolithic sites. This was followed by continued regression of the shoreline. Due to these complex dynamics it is not possible, in the absence of more detailed geomorphological study, to suggest a date for the Barr River Mesolithic activity relative to its shoreline position.

Research undertaken on Mull (for example, Bonsall et al 1991; National Museums Scotland 1993; Mithen et al 2006; Mithen & Wicks 2009) and Ardnamurchan (for example, Crerar 1961; Thornber 1974b and see also Pollard 1996; Pollard 2000) document the presence of sites with similar assemblages.

The use of a relatively diverse range of raw materials, in particular Rùm bloodstone and baked mudstone, the latter possibly from the source at Staffin, north-east Skye, documents the wider interconnections and regional networks in operation (Wickham-Jones & Hardy 2004; Hardy & Wickham-Jones 2008; Saville et al 2012). The geometric microlithic component finds wider regional parallels at sites with fragments recovered at Mercer Barr River site, as well as those further afield like Kinloch, Rùm (NMRS no.: NM49NW 3)and sites in the southern Hebrides (Mercer 1979; Wickham-Jones 1990; Mithen 2000). In the absence of firm dating it is difficult to consider this in more detailed terms, especially as several phases of activity are represented and especially given the wide date range currently available for such assemblages.

While the evidence is partial from Barr River, together with a wider body of evidence, it has been sufficient to inform an artist's speculative illustration of Mesolithic activity in these 'fluid seascapes'.

9.1 Later prehistoric and Early Bronze Age activity

While the absence of deposits and radiocarbon dates which directly relate to the Mesolithic were disappointing, the results of excavation and analysis do give an unintended insight into another era of activity in the second millennium BC. That there was subsequent activity at this location is no real surprise, not least due to the previous discovery of a barbed and tanged arrowhead and the evidence of a later charcoal-burning platform at the site. The charcoal dating to the second millennium BC may simply be the result of intrusive material migrating down the soil profile, but with the later lithic assemblage component it may represent a distinct phase of deposition. This may relate to increased erosion on the slope due to changing vegetation (potentially as forest clearance) and perhaps in combination with changing climatic conditions, as well as signalling more occupation/craft activity in the vicinity – perhaps more than might be suggested simply by a taskstation or lost arrow.

At a range of other Mesolithic sites there is evidence that suggests such locations were similarly favoured in the Bronze Age, including Camas Daraich, Skye (Wickham-Jones & Hardy 2004; NMRS no.: NG50SE 27), Kinloch, Rùm (Wickham-Jones 1990; NMRS no.: NM49NW 3), Sand, Applecross (Hardy & Wickham-Jones

Illus 5 Illustrative drawing (© FCS by Dave Powell)

2008; NMRS no.:NG64NE 5) and further afield, as at Oliclett, Caithness (Pannett & Baines 2006; NMRS no.:ND34NW 43). These are all Mesolithic sites where barbed and tanged arrowheads and other Bronze Age knapping episodes are documented. North Barr River contributes to the growing body of evidence documenting certain types of Bronze Age activity taking place at such previously favoured locations in the landscape, perhaps part of wider deliberate practices of earlier site reuse also seen in the first millennium BC (for example Hingley 1996; Lelong & MacGregor 2007).

In conclusion, the limited programme of archaeological investigation at North Barr River has helped clarify the character and extent of some of the deposits present and has identified further traces of Mesolithic and later prehistoric activity at this location. There are, however, several outstanding questions, such as the exact nature of the buried features and potential for in situ Mesolithic preservation. The survival of comparable deposits elsewhere uncovered in the context of forestry plantation, as also seen in the Southern Uplands (Ward 2005: 134), highlights the importance of pursuing investigation of these often discrete sites and fortuitous opportunities.

The location of North Barr River on the shores of Loch Teacuis, and the presence of a range of raw materials which had to be obtained elsewhere, inevitably means that the people using this site were situated in a wider network of relationships which may have extended by water into the inner Hebrides and beyond. In this respect the site contributes to the study of these spatial networks, while the late prehistoric activity and potential reuse in the second millennium BC also serves to remind us of the wider temporal networks at play in the past.

10. ACKNOWLEDGEMENTS

The archaeological evaluation was undertaken with the assistance of Pete Madden, Jim Kirby and Colin MacDonald. Thanks are extended to Forestry Commission Scotland for support during the project, which was specified and monitored for the FCS by Matt Ritchie. The site archive will be deposited with the Historic Environment (RCAHMS) and the evaluation finds allocated to a museum by the finds disposal panel.

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