

# Tower BF7, Fanellan, Beaully, Highland

## Archive Report: the lithic assemblage (4011161)

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### Introduction

A lithic assemblage of 181 pieces of chipped stone was recovered during the course of the excavations at Tower BF7, Fanellan, Beaully (cf. Masson-Maclean 2014). It is these artefacts, which are the focus of this report.

### Methodology

The methodology, type and attribute terminologies employed for the analysis of lithics from Fanellan follows the format devised and adopted for the *Southern Hebrides Mesolithic Project* (Finlayson *et al.* 1996, 2000). This built upon the research design used for the analysis of the lithic assemblage from Kinloch, Rùm (Wickham-Jones 1990), which was itself derived from the terminologies of technological analysis put forward by Tixier *et al.* (1980); subsequently enhanced (Inizan *et al.* 1999). It also incorporates aspects of Madsen's (1992) classification scheme for primary technological attributes. This format lends itself to the incorporation of later prehistoric forms such as Neolithic and Bronze Age projectile points and certain types of scrapers. Appendix 1 is a glossary of terms.

The database uses Access™ 2010 for the typological and technological analysis of the lithics. References to specific artefacts will cite the catalogue number followed by the small finds number, where available.

### Raw materials

Flint dominates the assemblage; 161 lithics representing 88.95%. The other raw materials present are quartz (6.62%), chalcedony (2.76%), with jasper, rhyolite, and Arran pitchstone each at 0.55%.

There are no known flint sources at Fanellan. The nearest sources of drift flint are recorded at Lossiemouth, Moray and at a number of locations in Aberdeenshire including the Den of Boddam, Buchan (Wickham-Jones and Collins 1977, 9-12) .

85.03% of the fresh flint is the ubiquitous grey hues associated with flint nodules eroding out of the offshore cretaceous sediments (after Hall 1991, Figure 3) potentially indicating the use of beach pebble resources. Caution is warranted when assigning the source of flint based on colour alone. For example, the variation in the hues of flint from Buchan include greys, reds, browns and yellows (Warren 2006, 35).

Other than small fraction debitage, 25 lithics display cortex either as primary or secondary pieces. However, one artefact presents with a battered cortex, and 15

(60.00%) have a pitted cortex which may indicate the use of beach pebbles (cf. Wright 2012). The remainder having a smooth and hard cortical variation suggesting a proportion of the flint found at Fanellan may have derived from fluvio-glacial sources, although the movement of raw materials from Moray and Aberdeenshire cannot be discounted entirely.

## Condition

92.27% of the lithics are fresh; burnt 15.71%. The frequency of burnt pieces is probably understated. Experimental work undertaken by Finlayson (1990, 53) on flint indicated that some burnt pieces would not be classified as such due to the absence of burnt attributes.

The absence of any of the stages of patination suggests that the lithics were either recovered from moisture retaining soil matrices, or similar. The process of patination refers to the change of the original inner colour of raw material to white, which results from the loss of water from the internal crystallite structure of siliceous materials. For example, a predominantly sand matrix will produce white cortication (after Shepherd 1972).

## Character

Table 1 and Figure 1, respectively show the character of the assemblage and the percentage frequencies of artefact types.

One bipolar core and one platform core fragment were found during the excavations. The rhyolite bipolar core (023:044) has three platforms; two opposed and one crossed. Nine flakes (13.85%) of the 65 blanks, i.e. 60 flakes and five blades, display bipolar attributes. The two chunks and the tested quartz cobble are also bipolar. Generally, bipolar blanks will be under-represented because not all debitage products will present with attributes associated with a bipolar reduction strategy (after Kuijt *et al.* 1995, 117).

The majority of the blanks are tertiary (67.69%) with primary 9.23% and secondary 23.08%.

There are 37 blanks where it is possible to determine the bulb of percussion. 22 (59.46%) have a diffuse bulb, and 18.92% have lip attributes; pronounced bulb 21.62%. This indicates the dominance of using a soft hammer to remove blanks from cores (78.38%). 90.70% of the 43 blanks, where it is possible to determine the striking platform, have a simple or plain platform of which 10.26% display attributes associate with trimming/scrub preparation. The remaining platforms are cortical (9.30%).

Six the non-bipolar blanks (10.71%) have evidence of anvil support. The practice refers to those occasions placing the platform core on an anvil for support to

facilitate blank removals. It suggests that platform and bipolar reduction strategies may have been coeval (cf. Wright 2012).

95.38% of the blanks are irregular; regular 4.62%. The regular pieces comprise of two true blades with parallel sides (031: 052 and 118). Regularity is determined by a blank with a straight edge greater than 10mm. Blanks with a straight edge of less than 10mm are classified as irregular (Wickham-Jones 2004, 71).

Small fraction debitage accounts for 61.33% of the assemblage of which 86.49% were retrieved from retents. The term 'small fraction debitage' refers to pieces where all of the metric variants are less 10mm (cf. Finlayson *et al.* 2000, Table 2.5.5).

It is unusual that, even for a small assemblage, all of the lithic artefacts are the product of primary technology. There are no modified pieces.

Fanellan	Total	Flint	Quartz	Chalcedony	Jasper	Pitchstone	Rhyolite
Tested Split Pebbles	1		1				
Chunks	2	2					
Cores	2	1					1
Flakes	60	49	10		1		
Primary	6	4	2				
Secondary	15	13	2				
Tertiary	39	32	6		1		
Primary regular							
Primary irregular	6	4	2				
Secondary regular	1	1					
Secondary irregular	14	12	2				
Tertiary regular							
Tertiary irregular	39	32	6		1		
Blades	5	5					
Primary							
Secondary							
Tertiary	5	5					
Primary regular							
Primary irregular							
Secondary regular							
Secondary irregular							
Tertiary regular	2	2					
Tertiary irregular	3	3					
Small Fraction	111	104	1	5		1	
Total	181	161	12	5	1	1	1

Table 1: Character of the lithic assemblage.

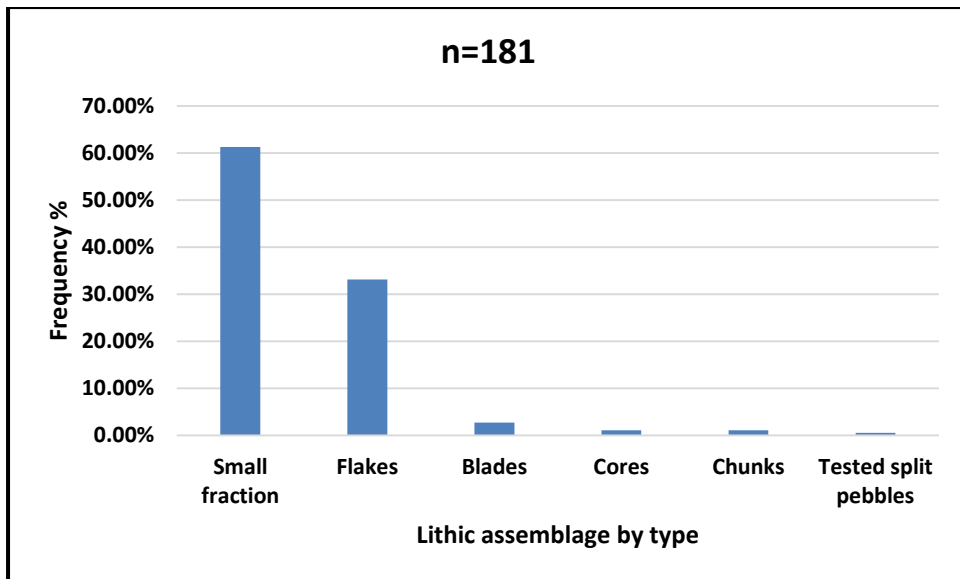


Figure 1: Percentage frequency of lithics by type.

### Recovery by context

Table 2 breaks down the lithics recovered to the context of recovery at Fanellan. The artefacts from contexts 031, 038, 058 and 061 will be the subject of additional analysis.

Context	Total	Small fraction	Flakes	Blades	Cores	Chunks	Tested split pebbles
038	52	36	13	3			
058	32	9	21		1	1	
031	18	4	12	1			1
061	17	11	4	1	1		
037	12	10	2				
036	11	9	2				
047	10	9	1				
078	5	5					
090	4	4					
048	4	3				1	
085	3	3					
044	2	2					
092	2	2					
001	1		1				
011	1		1				
025	1		1				
028	1	1					
041	1	1					
043	1		1				
060	1		1				
096	1	1					
097	1	1					
	181	111	60	5	2	2	1

Table 2: Type of lithics recovered by context.

### **Context 031**

This context is recorded as a possible abandonment layer formed after the circular timber structure went out of use.

Nine flint (bipolar 22.22%; platform 77.78%) and three quartz flakes (bipolar 33.33%; platform 66.67%) were recovered from (031). One of the flint flakes has evidence of anvil support (003:010). Apart from the small fraction debitage, there is one platform flint narrow blade fragment (007:014) and a bipolar tested split quartz pebble (020:039).

Other than the lithics, there are 17 sherds of pottery, seven pottery fragments, numerous pieces of burnt bone and fragments of pyrite recovered from this context.

### **Context 038**

52 lithics were recovered from a layer (038) beneath levelling deposit (058), possibly re-deposited as part of the foundation of the circular timber structure.

11 of the 13 irregular flint flakes indicate the use of a platform reduction strategy, although three were reduced with anvil support (115; 116; 117). The remaining two flakes are bipolar. There is one regular and two irregular tertiary blade fragments. One of the blades has evidence of anvil support (119), and another with edge damage (118). It is not possible to determine if the edge damage relates to use. The remaining 36 lithics are flint small fraction debitage.

Burnt bone, pottery sherds and fragments and one piece of clay were also recovered from (038).

**Context 058**

Lithics were recovered from (058), a likely levelling deposit uncovered in the south-eastern area of the circular timber structure.

Table 3 shows the reduction strategy dominance of platform to bipolar for finds other small fraction debitage. A flint flake (044:070) presents with evidence for anvil support.

The raw material of one of the pieces of small fraction debitage is Arran pitchstone (047:073). Pitchstone found on mainland Scotland is usually associated with Early and Middle Neolithic events (cf. Ballin 2009).

The profile of the lithics from (058) has common differences with those recovered from overlying possible abandonment layer (031). The lithics comprise in the main flakes and small fraction debitage. Platform reduction dominates flake production. There are also incidences of flakes presenting with attributes of anvil support from both contexts.

There are no lithics fashioned from rhyolite other than the bipolar core (023:044).

Other artefacts from (058) include pottery sherds and fragments, bone fragments and a saddle quern. The data structure report notes a sherd of prehistoric pottery as possibly originating from a clearance cairn (046).

		Flint		Quartz		Rhyolite
	Total	Bipolar	Platform	Bipolar	Platform	Bipolar
Flakes	21	16	1	1	3	
Core	1					1
Chunk	1			1		
	23	16	1	2	3	1

Table 3: Lithics other than small fraction debitage recovered from (058) analysed by reduction strategy and raw material.

**Context 061**

Underlying (031) was a trampled charcoal rich floor deposit around the hearth [029] within the circular structure.

Apart from the undiagnostic 11 pieces of flint small fraction debitage, all of the lithics from (061) are from a platform reduction strategy. They comprise four irregular flakes (three flint and one quartz), a platform core fragment and regular narrow blade (031:052). This is a 'true blade' with parallel sides would not look out of place in a Mesolithic assemblage, although without supporting data it could also indicate a Neolithic event.

## **Discussion and summary**

None of the lithics are truly diagnostic and cannot be ascribed to any given prehistoric archaeological epoch. However, the Early Neolithic sees an increase in the use of quartz as a supplementary raw material in Eastern Scotland (cf. Warren 2006, 35-37). Arran pitchstone has a wide distribution across Scotland (cf. Ballin 2009; Williams Thorpe and Thorpe 1984). The recovery of pitchstone on the mainland is generally associated with Early and Middle Neolithic contexts (cf. Ballin 2009), although it has recently been found in the excavations of Mesolithic pits at Dunragit, Dumfries and Galloway (GUARD Archaeology forthcoming). The narrow 'true blade' (031:052) is a type found in many Mesolithic assemblages, however, without any corroborative data it may be representative of a Neolithic event.

The lithic assemblage is small but includes the types of debitage products associated with larger assemblages, e.g. cores, tested split pebbles, chunks, blades, flakes and small fraction. Furthermore, the majority of lithics were recovered from deposits relating to the foundation, use or abandonment of the ring-groove structure. The anvil support attributes on lithics from (031), (038), and (058) suggests that platform and bipolar reduction strategies were coeval. The presence of bipolar products does not necessarily indicate a different phase of activity.

The presence of primary blanks along the other debitage products may indicate the evidence of limited primary and secondary knapping events recovered from within the confines of the structure. However, are they representative of events contemporaneous to the structure, or are they residual from previous events?

There are no radiocarbon dates from (031), (038), (058), and (061), although Early Iron Age dates have been obtained from the fill (028) of the hearth [029], and a structural posthole [020]. A pit within the circular structure [081], and another outwith [091] have also been dated to the Early Iron Age. Lithics were not retrieved from pits either dated to Late Neolithic [051] [056], or Bronze Age [050]. There are two pits dated to the Late Bronze Age. A flint flake was recovered from [059] (043), and one piece of small fraction debitage from [042] (041). Late prehistoric pottery from (031), (038) and (058) does not necessarily assist in determining a relative date for the lithics because of the disturbed nature of the contexts.



There are elements of residuality from pre-Iron Age periods, however, there are characteristic elements of the assemblage that could be ascribed to Iron Age events (after Humphrey 2003, 20; 2004).

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## Appendix 1: Glossary of Terms<sup>1</sup>

### *Introduction*

The definitions of terms is a composite from a number of different sources (i.e. Finlayson *et al.* 2000; Inizan *et al.* 1999; Wickham-Jones 1990, 2004). If other sources are used then the relevant section is referenced accordingly.

### *Glossary*

**Anvil:** These coarse stone artefacts are recognised by distinctive wear patterns (Clarke 1990, Illustration 78). They may have also used as percussors (Finlayson *et al.* 2000, 72).

**Anvil support:** Refers to those occasions where the platform core is placed on an anvil for support to facilitate blank removals.

**Blade:** A blade is arbitrarily defined as an artefact which is twice as long as it is wide usually with straight parallel sides. Such examples may sometimes be referred to as 'true blades' to distinguish them (Wickham-Jones 2004, 69).

**Blade-like flakes:** The blade fits the metric parameters to be categorised as such, however, the morphology of the piece is more in keeping with that of flakes, e.g. they may often be irregular and do not have parallel sides.

**Blanks:** Collective term for blades and flakes (Wickham-Jones 2004, 69).

**Bulb of percussion:** This attribute signifies where the core was struck to detach the blank. A pronounced bulb may indicate the use of a hard hammer, and a diffuse bulb invariably indicates the use of a softer hammer (Wickham -Jones 2004, 69). Bulb and lip and pronounced lips are associated with the use of soft hammer. Lip attributes may suggest the use of an antler percussor (Madsen 1992, 104-105). Experimental studies confirm this, although such studies are usually undertaken using flint of exceptional quality (cf. Ohnuma and Bergman 1982). Bulb attributes will vary with different raw materials (cf. Costa *et al.* 2005).

**Chunk:** These artefacts are generally a by-product, and do not have a platform or ventral face. Some chunks may have been used, e.g. *pièces esquillées* (Wickham-Jones 2004, 69).

**Cores:** The core is the artefact from which blades and flakes are struck.

**Bipolar/bipolar cores:** Indicates that cores are worked utilising an anvil. They may present with removals from both the proximal and distal ends due

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<sup>1</sup> Wright 2014

to the strike of the hammerstone and the shock reverberation from the anvil, and there may be evidence of severe crushing damage, percussion ridges from repeated strikes, step and hinge terminations and the presence of cortex (Hayden 1991, 3).

**Platform/platform cores:** The term refers to the utilisation of a plain or simple platform which is struck to detach blades and flakes. These cores can be predominantly for either blade or flake production. A distinction that is ascertained by determining the most common form of blank removed. Some cores will be classified as non-specific platform referring to the removal of blades and flakes in broadly equal frequencies. The remaining category is for cores described as amorphous which represent irregular knapping sequences (Wickham-Jones 2004, 70; Finlayson *et al.* 2000, Table 2.5.3).

**Core rejuvenation strategies:** Knapping accidents will occur resulting in negative step and/or hinge terminations on the flaking surface of the core, which may be removed by a core rejuvenation blank to leave a clear flaking surface for future removals. Accumulations of material at the distal end of the core can be removed by the blank with a plunging termination. Strategies are also encountered when part of the platform surface is removed by a side blow (after Inizan *et al.* 1999, 153).

**Cortex:** Refers to the original surface of the nodule or pebble, which may be fresh, rolled, abraded, pitted or battered. Cortex may be either smooth/chalky or smooth/hard. The cortical attribute may indicate the possible source of the raw material (Wickham-Jones 2004, 69).

**Dorsal and ventral faces of blanks:** The upper face or dorsal is the flaking surface of the core prior to the removal of the blank. The lower face or ventral represents the fracture face of the blank having been detached from the core. The ventral and the core will conjoin.

**Edge damage:** Edge damage may result from the reduction strategy, use and other post-depositional factors such as ploughing, trampling, natural abrasion, and other unknown taphonomic processes (Finlayson *et al.* 2000, Table 2.5.1; Mallouf 1982; McBrearty *et al.* 1998; Neilsen 1991).

**Flake:** A classification of a blank. Metric variants distinguish flakes from blades. Flakes are also generally less regular than blades. They may be either modified or unmodified for use (Wickham-Jones 2004, 69).

**Hammerstone:** Hammerstones vary in hardness which may be indicated by the bulb of percussion on blanks, and the negative bulb of percussion visible on cores (Wickham-Jones 2004, 69-70).

**Languette:** Represents a knapping error creating tongue-like distal termination. They are associated with a soft hammer (Inizan 1999 *et al.*, 144).

**Original pebble/nodule size:** A medium sized pebble has been categorised as fist-sized. An approximate term based in the size of pebbles recorded on Islay (Finlayson *et al.* 2000, Table 2.5.2).

**Patination:** Discolouration of original fresh colour artefacts. Variations in patination may arise because of the nature of the soil matrix from which they were recovered. It may also indicate ground disturbance (Inizan *et al.* 1999, 147; Wickham-Jones 2004, 69).

**Platform type:** There are four types of platform referred to (Finlayson *et al.* 2000, Table 2.5.4).

**Cortical:** The entire blank platform is covered in cortex.

**Simple/plain:** Represented by a simple flaked surface.

**Complex/faceted:** Multiple flake removals define this form of platform. Examples of this strategy during the Mesolithic period are likely to be accidental.

**Crushed:** A collapsed platform associated with bipolar reduction.

**Primary material:** Cortex covers the dorsal surface of the artefact (Wickham-Jones 2004, 70).

**Primary technology:** Refers to the procurement of raw material, preparation of cores and debitage products, such as blades, flakes, chunks and small fraction debitage (Wickham -Jones 2004, 70).

**Reduction strategy:** Refers to the use of either bipolar or platform reduction strategies (Wickham-Jones 2004, 71).

**Regular/irregular blanks:** Regularity is determined by a blank with a straight edge <10mm. Blanks with a straight edge of <10mm are classified as irregular (Wickham-Jones 2004a, 71).

**Remaining platform size:** This schema is taken from Madsen (1992, Figure 70).

**Point:** Where remaining platform represents <33.33% of blank width.

**Small/narrow:** Remaining platform width is c.33.33% of blank and length is <33.33% and >66.67%.

**Broad/narrow:** Remaining platform length is >66.67% of blank.

**Large:** The width and length of the remaining platform is >66.67%.

**Retouch, angle of:** There are four forms of retouch referred to in this study (cf. Inizan *et al.* 1999, 129-130; Woodman *et al.* 2006, 95). The first three categories are focused on the edge of the blank.

**Abrupt:** Marginally less than 90°.

**Enclume:** Use of anvil with angle at 90°.

**Semi-abrupt:** angle at approximately 45°.

**Semi-invasive:** Similar to semi-abrupt, although retouch extends across the surface of the blank.

**Retouch, extent of:** The extent of removals are classified as either short, semi-invasive, invasive or covering (Figure 6).

**Retouch, position of:** Direct retouch is visible on the dorsal face, conversely inverse retouch is seen on the ventral face. Alternate is where a blank has been modified by both direct and inverse retouch.

**Secondary material:** Artefact with cortex visible on the dorsal surface (Wickham-Jones 2004, 71).

**Secondary technology:** Refers to the modification of blanks into tools (Wickham-Jones 2004, 71).

**Scrapers:** Scrapers present with a blunt working edge (cf. Finlayson *et al.* 2000, Table 2.5.8).

**Short convex:** Convex scraping edge <10mm thick.

**Short convex flared:** As for short convex but where artefact narrows from scraping edge.

**Short thick convex:** As for short convex with scraping edge <10mm.

**Short thick convex flared:** As for short thick convex but flared.

**Long convex:** Scraper which is twice as long as it is wide with a scraping edge of <10mm.

**Long convex flared:** As for long convex but flared.

**Long thick convex flared:** Scraper which is twice as long as it is wide with a scraping edge of >10mm.



**Disc:** Continuous retouch to circumference of scraper.

**Concave:** Scraper with concave scraping edge.

**Denticulate:** Scraping edge is denticulated or presents with multiple notches.

**Angled:** A scraper with more than one scraping edge which meets to form an angled corner(s).

**Sub-angled:** As for angled but with rounded corners.

**Straight:** The edge is neither convex nor concave in plan.

**Wide convex:** A side scraper with retouch to longest axis.

**Irregular:** Scrapers which do not into the other classifications.

**Fragment:** Refers to a scraper fragment.

**Siret fracture:** Refers to a knapping error where the width of the blank is split. This may or not extend the full length of the blank (Inizan *et al.* 1999, 156).

**Small fractiondebitage:** Debitage where metric variants are all <10mm (Finlayson *et al.* 2000, Table 2.5.5).

**Tertiary material:** Artefact without any trace of the original cortical surface present (Wickham-Jones 2004, 70).

**Tool form types:** General term for all tool forms. Apart from microliths and scrapers other tool forms are set out below (cf. Finlayson *et al.* 2000, Table 2.5.1).

**Abruptly backed:** Any artefact which has abrupt retouch to blunt edge.

**Thin-backed:** Refers to any artefact with fine retouch to blunt edge.

**Point:** Two or more convergent edges with retouch.

**Denticulate:** Edge is formed as a series of notches. Each notch may be as a result of single or multiple removals.

**Thick denticulate:** As for denticulate but where modified edge is >10mm.

**Notch:** Artefact with non-contiguous notch attributes. The notch may be as a result of single or multiple removals.

**Miscellaneous retouch:** Artefact with retouch that do not fit into any of the other categories.

**Awl:** Generally awls are fashioned on thick blanks and comprise of abrupt retouch on two sides to form point.

**Trimming:** Relates to the abrasion of an unretouched edge producing semi-invasive scalar removals. It is associated with the shaping of artefacts.