

## Neolithic Consultation Draft

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## Introduction

The appearance, probably shortly after 4000 BC, of a new lifestyle that was more sedentary than that of Mesolithic hunter-fisher-foragers marks the beginning of the Neolithic period in Scotland. This lifestyle was based on the use of domesticated plants and animals and featured fresh technology (pottery) as well as notably different practices, traditions and beliefs. DNA evidence has shown that this farming lifestyle was introduced by immigrants from Continental Europe (Brace *et al.* 2019) and, as far as Perth and Kinross is concerned, the particular 'strand' of Neolithisation represented in this part of Scotland is the 'Carinated Bowl Neolithic', whose proximate Continental origin is the Nord-Pas de Calais region of northern France (Sheridan 2010a). The end of the Neolithic period is conventionally defined as the point at which Beaker pottery and associated Continental novelties appeared, during the 25th century BC (SCARF 2012); we know that this was also associated with the arrival of incomers from the Continent. For the purposes of this Framework, the Neolithic period is divided into the Early Neolithic, between c.4000 BC and c.3500 BC; the Middle Neolithic, between c.3500 BC and c.3000 BC, and the Late Neolithic, between c.3000 BC and 2500/2450 BC.

Our understanding of the Neolithic period in Perth and Kinross is perhaps the broadest (if not the deepest) of any local authority area in Scotland – including Orkney – with a wide range of aspects of Neolithic lifeways and material culture identified through a long tradition of sustained campaigns of research excavation and, from the 1970s onwards, intense aerial reconnaissance and detailed cropmark interpretation. This work has since been supplemented by a broad range of important discoveries made during developer-funded archaeological work. There is also a strong tradition of 'amateur' archaeology in Perth and Kinross, underpinning excavation campaigns, arable fieldwalking and the identification of rock art. This chapter provides a short regional overview for the Neolithic in Perth and Kinross as we currently understand it and includes a brief history of archaeological research undertaken in the region as well as a more detailed assessment of the current resource. The research agenda provides recommendations for further work in the form of research priorities and questions.

## Regional Overview

The diverse natural environment of Perth and Kinross, with its distinctive Highland and Lowland landscape character types, has prompted an equally unique historic environment consisting of a broad range of Neolithic timber, earthwork and megalithic sites and monuments. These generally survive as upstanding archaeological sites in upland areas and as sub-surface remains, often made visible as cropmarks, found throughout the more agricultural broad valleys, basins and river corridors of the lowlands. Important natural routeways such as the east-west running straths and

river corridors affording access to the Tay estuary and Firth coincide with good quality agricultural land, especially in the eastern and southern parts of the region, to make a landscape with attractive prospects for Scotland's first farming communities.

Not surprisingly, since Perth and Kinross is a modern administrative construct, the Neolithic of this part of Scotland has seldom been synthesised in isolation, with the area generally considered as part of the 'Tayside Region' or 'eastern lowland Scotland' as evidenced in many of Barclay's publications (eg Barclay and Maxwell 1998; Barclay 1999; 2003). Incorporation into a broader regional picture is also evident in the Scottish Archaeological Research Framework (ScARF) where Perth and Kinross features extensively in the Neolithic report as part of an '*East and Central Scotland between the Great Glen and the Forth*' synthesis (ScARF 2012, section 3.3.1). Valuable insights into various aspects of the region's Neolithic can also be found in edited volume chapters such as in *Vessels for the Ancestors* (Sharples and Sheridan 1992) and *The Neolithic of Mainland Scotland* (Brophy *et al.* 2016), as well as throughout Noble's *Neolithic Scotland: timber, stone, earth and fire* (2006), within Kinnes' thoughtful review of Scottish Neolithic studies in the mid-1980s (Kinnes 1986), and as part of *Prehistoric Forteviot* (Brophy and Noble 2020), the first monograph of the Strathearn Environs and Royal Forteviot (SERF) project. Richard Bradley's excavations at Croftmoraig/[Croft Moraig](#), Strathtay are invaluable in revealing that some monuments, long considered to be of Neolithic date, are in fact much later (Bradley and Sheridan 2005; Bradley 2011; Bradley and Nimura 2016). As regards Neolithic material culture in Perth and Kinross, the axeheads of Alpine jadeitite are covered in the publications concerning the French-led, international *Projet JADE* (Sheridan *et al.* 2011; Sheridan and Pailler 2012; Gauthier and Pétrequin 2017), while thin-sectioned axeheads of other kinds of stone are listed in *Stone Axe Studies II* (Clough and Cummins 1988; Ritchie and Scott 1988) and the results of National Museums' Scotland excavations at the stone quarry at [Creag Na Caillich](#) near Killin were published by Edmonds *et al.* in 1993. A review of the Neolithic pottery from central and eastern Scotland was published by Trevor Cowie in 1992 and 1994 (Cowie 1992; 1994; see also Sheridan 2016), while the pitchstone finds from Perth and Kinross are covered by Torben Ballin's nationwide survey of the use and dating of pitchstone (Ballin 2009; 2015), and maceheads are covered in Fiona Roe's nationwide survey (Roe 1968; 1979).

### **An 'Eastern Lowland' Scottish Neolithic**

In a sense, the Neolithic of Perth and Kinross, as we currently understand it, forms part of an 'eastern lowland' Scottish Neolithic which has been defined by Sheridan and Brophy (ScARF 2012) as consisting of:

- an extensive array of timber and earthwork monument types, notably cursus monuments, palisaded enclosures, timber circles and pre-henge activity;
- a burial record dominated by long barrows, mortuary enclosures and, to a lesser extent, round mounds/barrows;
- cropmark evidence for timber halls (eg [Clais](#)) and similar rectangular structures;
- a settlement record dominated by pits and pit clusters;
- a broad selection of material culture including Neolithic pottery traditions from Carinated Bowl to Grooved Ware.

To these can be added Late Neolithic timber structures featuring a central setting of four large posts, with one or more surrounding post ring, whose dating has become a little clearer since 2012 thanks to the excavations at [Leadketty](#) (Wright and Brophy forthcoming), Dunning and

[Haughs of Pittentian](#) (Becket *et al.* forthcoming), Crieff. The function of these structures, however, remains a topic of debate.

### **An 'Upland' Neolithic?**

The evidence for Neolithic activities is somewhat different across the upland areas of the region north of the Highland Boundary Fault, and here the Neolithic is characterised by the presence of different monuments and site types, namely chambered cairns, long cairns, stone circles, standing stones and other stone settings. Rock art appears more common in this part of Perth and Kinross than in the lowlands, although that may partly be due to more intensive prospection in this area, combined with greater destruction in intensively-farmed areas to the south. The stone quarry used for making axeheads and at least one cushion macehead at [Creag Na Caillich](#) (Edmonds *et al.* 1993) above Killin also lies in this area. It should be noted that standing stones are also evident in the lowlands such as around Dunning, Strathearn and lower down the valley in the shadow of Moncreiffe Hill and around Mailer Hill (where there are also flint scatters) although they survive to a much lesser extent than in the uplands. Whether this reflects deliberate site construction decisions by Neolithic communities or is a consequence of site preservation, with more destruction occurring in the more intensively-farmed lowlands, remains a matter for further investigation. The megalithic tradition and the relationships between its occurrence across different landscape character types (uplands and lowlands) requires more extensive research and analysis, although clearly the chambered tombs at [Cultoquhey](#), east of Gilmerton and [Kindrochat](#), near Comrie can be understood as easterly outliers of the Clyde cairn tradition of south-west Scotland. Careful consideration of chronology is also needed when dealing with standing stone monuments, since it is clear that some of these were erected during the Bronze Age. While rock art is assumed to date to the Late Neolithic further investigation is required to allow accurate chronologies for their creation to be developed.

### **History of Research in Perth and Kinross**

As with elsewhere in Scotland, Neolithic monuments were the focus of antiquarian inquiry from the 19th century onward with investigation and documentation of megalithic monuments and burials being the most common prior to the merger of the Perthshire and Kinross-shire Counties in 1975. In many instances, the sites are only known about through the Ordnance Survey Name Book and Statistical Accounts and provide limited input into our contemporary understanding of Neolithic Perth and Kinross, in part due to the subsequent loss of recovered material remains. Nonetheless, valuable work by the likes of Fred Coles at the turn of the 20th century have offered useful building blocks for analysis (eg Coles 1909).

In the middle decades of the 20th century, a series of excavations were carried out at Neolithic monuments in the County by eminent archaeologists such as V Gordon Childe, Stuart Piggott, Derek Simpson and John Coles. Childe, for instance, investigated a Clyde-type chambered cairn at [Kindrochat](#) with a team of students in 1929–30 (Childe 1930; 1931; Ralston 2009). Between them, Coles, Piggott and Simpson carried out important excavations at a diverse range of sites in Strathtay including [Pitnacree](#) round barrow in 1964 (Coles and Simpson 1965) and a complex pit cluster at [Haugh of Grandtully](#) in 1966–67 (Simpson *et al.* 1991). In 1965 Piggott and Simpson (1971) also excavated Croftmoraig/[Croft Moraig](#) stone circle; however, their Neolithic interpretation has since been overturned by more recent excavations that produced an entirely Bronze Age sequence of dates (see chapters in Bradley and Nimura 2016).

The early interventions were supplemented by the work of Margaret Stewart MBE and Gordon Barclay who focused much of their attention on studying the Neolithic of Perth and Kinross. Both

have made significant personal contributions to our current understanding of the Neolithic in the area through their sustained campaigns of excavation.

Stewart (1907–1986) was a student of Childe and a notable figure in the history of the archaeology department at the University of Edinburgh (Ralston 2009). Stewart's activities were centred around the pre-1975 County of Perthshire (Taylor 1989, 1) where she excavated a diverse range of Neolithic (and Bronze Age) sites and monuments between the 1930s and 1970s including stone settings at [Monzie, Crieff](#) (Young and Crichton Mitchell 1939), [Sandy Road, Scone](#) (Stewart 1965), and a group of four-post stone settings in Strathtay (Stewart 1966; 1974; Stewart and Barclay 1997). Together with Audrey Henshall, Stewart investigated the chambered cairn at [Clach na Tiompan](#) in the Sma' Glen (Henshall and Stewart 1954) and a site at [Dull](#) near Aberfeldy, which she believed to have been a chambered cairn (Stewart 1959: 74; the identification was disputed and not accepted by Henshall). She also excavated the complex multi-phase 'mini' henge at [Moncreiffe House](#) although most of this site was found to be post-Neolithic in date (Stewart 1986). Stewart also undertook an extensive survey of the prehistoric monuments of Perthshire (Stewart 1959).

Barclay spent much of his career working with Historic Scotland, and in the early part, from 1977 onwards, was based in their Central Excavation Unit (Ralston 2016). This position allowed him the opportunity to direct important and large-scale excavations at a range of prehistoric sites and monuments across Scotland with some of his most important work being located in Perth and Kinross. His excavations at [North Mains](#) henge and barrow in Strathearn during the late 1970s were amongst the most significant undertaken in modern archaeology in Scotland (Barclay 1983) and began an extended interest in cropmark sites of this period and region. In the early 1990s Barclay, together with Gordon Maxwell, excavated a Neolithic mortuary enclosure at [Inchtuthil](#), the [Cleaven Dyke](#) (Canmore IDs 28473/73146) cursus, and the timber structure at [Littleour](#) amongst many other sites (Barclay and Maxwell 1992; 1998). His First Farmers project, funded by the Arts and Humanities Research Council, endeavoured to identify Neolithic settlement sites in Perth and Kinross and included excavations of the [Claish](#) timber hall (now Stirling although historically in Perth and Kinross) in 2001 (Barclay *et al.* 2003), the timber structures at [Carsie Mains](#) in 2002 (Brophy and Barclay 2004), and other assorted cropmark enclosures, pit clusters and lithic scatters with mixed results. His contribution to our understanding of the region's Neolithic also included important synthesising studies on settlement, enclosures, cursus monuments and henges (eg Barclay 1999; 2001a; 2003; for full bibliography see Ralston 2016).

Both Stewart and Barclay were strong supporters of the 'amateur scene' in the County of Perthshire and Stewart performed a leading role in the Perthshire Society of Natural Science, founding its Archaeological and Historical Section in 1948 (see ['Archaeology and History – Perthshire Society of Natural Science'](#)), and was a strong supporter of community excavations (Taylor 1989; Hall 2018). Barclay was a patron of the 'Stones and Bones' fieldwalking group who were active during his excavations of the 1990s and 2000s (eg Hallyburton and Brown 2000).

Following from the work of Barclay, the Strathearn Environs and Royal Forteviot (SERF) Project delivered a significant, decade-long research-based fieldwork programme (2006–2017) through the University of Glasgow (and Aberdeen in its initial phase). This landscape-scale, multiphase approach has added considerably to our understanding of Neolithic monumentality around the Forteviot-Leadketty complexes in Strathearn (Driscoll *et al.* 2010; Noble and Brophy 2011a, 2011b; Brophy and Noble 2020; Wright and Brophy forthcoming) as well as Neolithic cremation

practices (Noble, Brophy and Younger 2020; Noble *et al.* 2017). SERF has also contributed towards research priorities such as the transition between the Neolithic and Chalcolithic periods, the chronology of henge monuments, and the general lack of environmental contextualisation for Neolithic sites. PhD research has ensued from SERF team members such as Kirsty Millican's work on timber monuments (2009; 2016a; 2016b) and Rebecca Younger's thesis on henge monuments (2015; 2016), with the broader project results as they relate to the Neolithic published in *Prehistoric Forteviot* (Brophy and Noble 2020), the first of four SERF monographs.

Cropmarks are one of the most significant characteristics of the Neolithic archaeological record in Perth and Kinross and, as previously mentioned, were the focus of most of Barclay's work and part of the SERF Project's prehistoric excavations (Brophy and Noble 2020). Early aerial reconnaissance in the area where Neolithic sites were documented began with the Cambridge University Aerial Photograph Collection (CUCAP) as a tertiary output from flights by J.K. St Joseph that largely focused on suspected Roman period targets (Jones 2005), a notable example being the palisaded enclosure complex at [Forteviot](#) (Canmore ID 26559/296263; St Joseph 1976). The identification and interpretation of cropmarks through broader aerial reconnaissance work by the Royal Commission on the Ancient and Historic Monuments of Scotland (RCAHMS, now Historic Environment Scotland) (Maxwell 1979) has radically influenced the way that the Neolithic is viewed across large swathes of lowland Scotland (Barclay 1993; Brophy 2007a). This is especially the case in Perth and Kinross where large numbers of Neolithic sites and types such as possible timber halls, four-post structures, cursus monuments, mortuary enclosures, timber circles, palisaded enclosures and henges were unknown prior to the sorties commencing in 1976. Crucially, a large number of these cropmarks have been subject to detailed and innovative interpretation and synthesis by the RCAHMS as published in their volume *South East Perth: an archaeological landscape* (RCAHMS 1994).

Where surveys have taken place in the uplands the mixed results have played a lesser role in our understanding of this period and it is likely that Neolithic sites remain undiscovered across much of the region's uplands. Possible Neolithic sites were identified in Strathtay in the 1950s (Stewart 1959) but none was identified by RCAHMS surveys in Strathardle or Glen Shee in the late 1980s (RCAHMS 1990). Between 1996 and 2005, much attention was focused on the environs of Ben Lawers as part of the Ben Lawers Historic Landscape project which included an RCAHMS survey in addition to the GUARD excavations (see Atkinson *et al.* 2016). Possible and probable Neolithic sites identified during the RCAHMS survey work included chambered cairns and standing stones with the excavations revealing lithics such as leaf-shaped arrowheads and pitchstone blades. Submerged woodland remains at [Craggantoul](#) (MPK17641) in Loch Tay returned wide-ranging radiocarbon dates including those for three Neolithic oaks calibrated to various spans between about 3500 cal BC and 3000 cal BC (Dixon 2007, Dixon 2016). Over 100 outcrops and boulders with rock art were also identified (albeit their chronology remains unclear) (Hale 2003). These discoveries were followed up by excavations of several rock art sites in 2007–10 (Bradley *et al.* 2013). Further identifications have since been made by amateur rock art investigator George Currie (regularly reported in *Discovery and Excavation in Scotland*) and research into Perth and Kinross's extensive rock art record continues through Historic Environment Scotland's [Scotland's Rock Art Project](#) (ScRAP). Considering these different projects together, it is clear that the application of multiple techniques of analysis to the investigation of sites and monuments around Ben Lawers and its wider Loch Tay environs have successfully identified Neolithic activity away from lowland arable areas.

Other fieldwork carried out in the uplands above the Highland Boundary Fault was the research excavation of the stone quarry, or so-called 'axe factory', at [Creag Na Caillich](#) above Killin in 1989. This was funded by National Museums Scotland (NMS) and led by Mark Edmonds, with Alison Sheridan; palaeoenvironmental analysis was undertaken by Richard Tipping (Edmonds *et al.* 1993). This work followed on from much earlier fieldwork carried out by Roy Ritchie and Euan MacKie, as described by Edmonds *et al.* (1993), and it clarified the nature of the activities that took place, the date of these activities (namely intermittent, small-scale exploitation during the third millennium BC and probably also the late fourth millennium BC) and the environment around the time of the quarrying. Petrological research by NMS also confirmed Roy Ritchie's suspicion that a cushion macehead found at Knock on the Outer Hebridean isle of Lewis is of Creag na Caillich calc-silicate hornfels (*ibid.*).

A notable emergent theme in regional Neolithic studies is developer-funded archaeological work which has made a significant contribution to Scotland's archaeology sector since the latter half of the 1980s (Carter 2002). Perth and Kinross features in Scotland-wide reviews of commercially delivered fieldwork contributions (Phillips and Bradley 2005; Brophy 2007a) with an assessment by Brophy (2007a) identifying that, between 1985 and 2014, 50% of the archaeological excavations revealing Neolithic dated material were undertaken in advance of development. Work by commercial sector organisations is clearly of great importance and continues to be informative to our understanding of the period, complementing the result of research-based excavations. The excavations at [Haughs of Pittentian](#) (MPK18545) between 2011 and 2014, undertaken as part of preparations for the Beaulieu to Denny overhead electricity cable (Becket *et al.* forthcoming), are a good example of this, as is the recent archaeological work associated with Transport Scotland's A9 dualling programme (Paton and Wilson 2019).

Major UK-wide and international research projects have also contributed insights into the Neolithic period in Perth and Kinross. The *Gathering Time* chronology project, led by Alasdair Whittle with Alex Bayliss and Frances Healy and funded by the Arts and Humanities Research Council and English Heritage, has Bayesian-modelled the available radiocarbon dates for Neolithic 'things and practices' in Scotland south of the Great Glen (Whittle *et al.* 2011, chapter 14). Whittle *et al.* concluded that 'the Neolithic' in this part of Scotland began either 3950–3765 cal BC (95.4% probability) or 3835–3760 cal BC (95.4% probability), the different estimates being due to the fact that Perth and Kinross straddles their 'south Scotland' and 'north-east Scotland' regions (See Sheridan 2012 for a review of their findings, also Sheridan and Schulting 2020 for new Bayesian modelling of Scottish funerary monuments). Whittle *et al.* are revisiting their chronological models in the light of the new IntCal20 radiocarbon calibration which may alter the conclusions thus far drawn. *Projet JADE*, a major international research project funded by the Agence Nationale de la Recherche, France and led by Pierre Pétrequin, has transformed our understanding of the small number of Alpine axeheads found in Perth and Kinross by locating the source of the rock and situating their arrival in Scotland within a Europe-wide picture of Alpine rock exploitation and circulation (Pétrequin *et al.* 2012a/b; 2017a/b). This work follows on from an earlier tradition of research into the stone axeheads of this part of Scotland (and the rest of Britain), undertaken by the Implement Petrology Committee (now Group) mostly in the 1970s and 1980s and involving petrological thin-sectioning of selected axeheads (Ritchie and Scott 1988). Other research that has provided information on Neolithic Perth and Kinross is the long-standing radiocarbon dating programme of National Museums Scotland which has produced a date for secondary activity at the Early Neolithic round barrow at [Pitnacree](#) (Sheridan 2010b) and, in

collaboration with Rick Schulting, has produced a date relating to the use of Cultoquhey chambered tomb (Sheridan and Schulting 2020).

## **The Extant Resource**

### **Funerary and Allied Monuments and Funerary Practices**

#### ***Early Neolithic***

The region hosts a variety of Neolithic funerary and allied monuments: the non-megalithic round barrow at [Pitnacree](#), several long mounds (some demonstrably chambered), the chambered tomb at [Cultoquhey](#) (MPK859) (whose cairn may have been round), and rare rectangular 'mortuary enclosures' such as at [Inchtuthil](#). The enormously long (342 m) 'bank barrow' at [Auchenlaich](#) (now in Stirling, but formerly in Perthshire), the 1.8 km long bank barrow-cum-cursus monument at [Cleaven Dyke](#) (Canmore IDs 28473/73146) and the cursus monuments of Perth and Kinross may represent aggrandized versions of the long mound and mortuary enclosure monument types respectively, being built probably during the second quarter of the fourth millennium BC. These sites may have had a function relating to the commemoration of the dead even if they were not used to house human remains.

The non-megalithic round barrow at [Pitnacree](#), which is associated with Carinated Bowl Neolithic pottery, could date as early as the 37th (or possibly late 38th) century BC, although sadly attempts to locate and date the cremated human remains from its initial period of use have so far been unsuccessful (Sheridan 2010b). Excavations here in the 1960s (Coles and Simpson 1965) showed that this earth and stone mound covered a rectangular mortuary structure which, in its earliest phase, was constructed using two massive split-trunk posts. It may be that this had initially stood as a free-standing mortuary structure, allowing the decomposition of the small number of people placed on or in it. (Similar rectangular timber mortuary structures are known from early Carinated Bowl Neolithic contexts elsewhere in Britain.) A subsequent phase of construction involved the erection of a horseshoe-shaped, low stone cairn around the mortuary structure and the deposition of the cremated remains of an adult male plus a second adult (probably female) and a child on the old ground surface in the area of the mortuary structure. The whole was then covered by a turf mound (Coles and Simpson 1965; Kinnes 1992). [Pitnacree](#) is one of only six definite and probable Neolithic round barrows in Scotland (Sheridan 2010b). There are other large round mounds located in Strathtay and beyond, several of which are represented in the cropmark record, which might prove to be of Neolithic date if excavated (Barclay 1999; Brophy 2010), however, an Early Bronze Age date is equally, or arguably, more likely.

It is unclear whether any non-megalithic long mounds were constructed in Perth and Kinross, even though Ian Kinnes listed two long cairns (at [Cairn Wocheil](#) [MPK807] and [Fortingall](#) [MPK460]) in his review of the non-megalithic long mounds of Britain (Kinnes 1992a: 18; 1992b). Two candidates for earthen long barrows are known from cropmarks, at [Thorn](#) near Auchterarder and [Haugh of Grandtully](#), while another two are largely known through antiquarian accounts. [Herald Hill](#) near Blairgowrie is an example of a possible Neolithic long barrow (or cairn) augmenting a natural mound. Trapezoidal in plan and around 70–80m long and 15–20m across, it was confirmed to be at least partly humanly constructed by test-pitting during the Cleaven Dyke project (Barclay and Maxwell 1997); it is located just over one kilometre east-south-east of the visible traces of the Cleaven Dyke. It has also been suggested that the north-west end of the Cleaven Dyke itself is a long barrow, possibly adjacent to an oval barrow (Barclay and Maxwell

1998, 20). Returning to the two long cairns listed by Kinnes in his *corpus* of non-megalithic long mounds in Britain, that at [Fortingall](#) in Strathtummel is almost 40m long, and sits on the floor of a valley and was proposed as a possible Neolithic monument by Henshall (1972: 478). The example at [Cairn Wochel](#), north of Braco was destroyed and is only known from an antiquarian account of 1726 where it is reported to have been around 55m long (*ibid.*: 478). Neither has been excavated but an 18th century account records the discovery of a '*stone coffin, in which there was a skeleton 7 feet long*', at Cairn Wochel.

Richard Bradley (pers. comm.) has raised the intriguing question of whether the monument excavated at [Castle Menzies Home Farm](#) (Halliday 2002) in Strathtay, normally described as a post-defined cursus (eg in Millican 2016: Fig. 8.2), is actually a large, ploughed-out non-megalithic long barrow that has been converted into a cursus monument by the addition of an unknown length of post-lines. Such an interpretation would account for the concave facade at one end, which contrasts the straight ends characteristic of cursus monuments, and the multiple phases of construction that are evident (Halliday 2002). The dimensions (c.130x36m to the end of the first stretch of roughly parallel posts) and its early fourth millennium BC radiocarbon dates (albeit from oak charcoal, and thus with a possible 'old wood' effect) are also consistent with such an hypothesis. Examples are known where long mounds are apparently edged by ditches or post-lines (eg [Dalladies](#), Aberdeenshire [Kinnes 1992a: Fig. 2.4.2] and [Eweford West](#) and [Pencraig Hill](#), East Lothian [Lelong and MacGregor 2007: 20, 34]. These enclosing features may have defined pre-barrow mortuary enclosures surrounding non-megalithic mortuary structures).

Chambered long cairns are known at [Clach na Tiompan](#) (Henshall 1972: 468-72), [Kindrochat](#) (MPK348; *ibid.*: 472-5), [Rottenreoch](#) (MPK908; *ibid.*, 475), [Middleton of Derculich](#) (MPK1081; *ibid.*: 478) and [Carie](#) (MPK17072). All are located in the upper valleys of the rivers Almond, Earn and Tay and, despite Kindrochat having received intrusive attention from Gordon Childe, and Clach na Tiompan having been investigated by Audrey Henshall and Margaret Stewart (Henshall and Stewart 1954), none have been excavated in the past 50 years. The example from Carie, on the north side of Loch Tay, was recorded as recently as 2000 through an RCAHMS field survey undertaken during the Ben Lawers Historic Landscape Project (referred to as Kiltyrie in MacGregor and Toolis 2016: 9, 29). Like the monuments at Clach na Tiompan, Kindrochat and possibly also Rottenreoch, the chambered cairn at Carie can be related to the Clyde group of chambered cairns, whose distribution focuses on south-west and west Scotland. The chambered tomb at [Cultoquhey](#) (MPK859), which may have had a round cairn, has also been classified as a further eastern outlier of the Clyde group (Henshall 1972: 475-7). A fragment of an unburnt human bone from Cultoquhey was radiocarbon dated to 4680±40 BP (GrA-26922, 3628–3366 cal BC: Sheridan and Schulting 2020) which accords with the broader picture of Clyde cairn chronology in which this style of chambered tomb seems to have emerged *3765–3645 BC* (*ibid.*: 203 and Fig. 18.5; date range in italics because it is Bayesian-modelled). Clyde cairns are a regional development that appears to represent a translation into stone of the earliest Neolithic non-megalithic funerary structures that are associated with the Carinated Bowl Neolithic. The fact that eastern outliers of this monumental tradition are present in Perth and Kinross illustrates that in the highland part of this region, at least, there existed contacts with the west and south-west of Scotland. To this list of chambered cairns can be added the first-phase of the trapezoidal monument at [Auchenlaich](#), near Callander in Stirling (Foster and Stevenson 2002) where the monument, with chamber aligned on its shallow facade and a lateral chamber, was subsequently enlarged to become a massive 322 metre-long bank barrow.



The excavated rectangular 'mortuary enclosure' at [Inchtuthil](#), within the Roman Legionary Fortress, was found to be of Early Neolithic date when it was excavated (Barclay and Maxwell 1991). It consists of a ditch enclosing a roughly rectangular area 53.9m long by 8.4m to 10m wide in which two fence-like structures supported by substantial upright timbers had been built, one after the other, with the later of the two subsequently being burnt down. When extant, the continuous fence would have blocked visual access to the interior although some kind of entrance presumably existed. Analysis of fragments of the burnt timbers at Inchtuthil revealed all samples to be of mature oak, including posts and radially-split planks (Mills 1992). This latter technology contrasts the tangentially-split oak planks that have been excavated at the part-waterlogged Early Neolithic long barrow at Haddenham in Cambridgeshire (Morgan 1990; Evans and Hodder 2006) and shows the potential for recovering information on Neolithic woodland use, character and technology even from burnt remains. While no human remains were found in the Inchtuthil enclosure, the resemblance of this structure to the post- or ditch- enclosures found surrounding mortuary structures and/or long mounds elsewhere (eg at Dalladies, Aberdeenshire [Kinnes 1992a: Fig. 2.4.3] and Eweford West and Pencraig Hill, East Lothian [Lelong and MacGregor 2007: 20, 34]) has led to the idea that Inchtuthil could have been used as an area for laying out the dead for exposure. Other candidates for Early Neolithic mortuary enclosures in Perth and Kinross are known from cropmarks, where they are generally defined by timber posts. A post-built rectangular mortuary enclosure is known at [Douglasmuir](#) in Angus (Kendrick 1980; note that Millican 2016: Fig. 8.2 classes this as a cursus), but in general these monuments are rare in Britain (Kinnes 1992a: 19).

In Scotland cursus monuments have mostly been found in Tayside and Fife, East Lothian and the eastern part of Dumfries and Galloway (Brophy 2015) but an example was also found on Arran in 2020. All but one of the region's cursus monuments are known only as cropmarks. They are broadly defined as long, rectangular monuments and although their function remains unclear, rituals involving processing would undoubtedly have taken place along their length. In the case of some post-built examples, deliberate fire setting to create a dramatic conflagration is also likely (Thomas 2007). They look like significantly elongated versions of the Early Neolithic rectangular mortuary enclosures discussed above and could have been associated with commemorating the dead at a societal, possibly 'tribal', level. It is unknown whether the dead would have been interred within them but examples exist from England where human remains have been found in cursus monuments (Bradley 2019: 74). As noted above, the likely conversion of an Early Neolithic long barrow into a cursus monument at Castle Menzies Home Farm is consistent with the idea that there is some element of commemorating the dead at these sites. The dating of Scottish cursus monuments, and the style of Carinated Bowl pottery associated with the examples excavated at Holywood [North](#) and [South](#) in Dumfries and Galloway (Thomas 2007), suggest that they are likely to have been constructed during the second quarter of the fourth millennium BC.

Like the earthwork cursus at [Broich](#) in Strathearn (Cachart and Perry 2009), the Castle Menzies Home Farm cursus/long barrow was excavated in advance of development / quarrying. Excavations at other cursus sites in the region have revealed variety in monument form and context with [Milton of Rattray](#) cursus near Blairgowrie defined by pits instead of posts (Brophy 2000) and [Blairhall](#) by Scone revealed as an important hybrid timber-earthwork cursus (King 1982). Blairhall sits amidst a rich cropmark complex including a parallel linear barrow cemetery of presumably much later date and offers a good example of cropmark potential for broadening our understanding of these sites (Brophy 2015).

The unique monument known as the [Cleaven Dyke](#), near Blairgowrie (Barclay and Maxwell 1998), appears to combine features of a cursus monument (namely a long pair of parallel ditches) with that of a bank barrow (namely a long mound, running centrally between the ditches). It survives to a length of 1.8 km and may originally have been longer. One of the most spectacular Neolithic earthworks in Europe, it was excavated at least four times during the 20th century, with the latest and most conclusive work being carried out in the 1990s by Barclay and Maxwell. This demonstrated that the monument was Neolithic and not Roman as previously believed (*ibid.*). Barclay and Maxwell concluded that the monument was likely to have been built in the 4th millennium BC and its construction was not single-phase but involved successive additions and continually extended to the south-east (*ibid.*). As noted above, it may have been built onto a pre-existing Early Neolithic non-megalithic long barrow at its north-westerly end.

Another example of a bank barrow, formally within the pre-1975 County of Perthshire but now in Stirling, is the 322 metre-long rectangular mound at [Auchenlaich](#) (Foster and Stevenson 2002). This appears to have started its life as a trapezoidal chambered long mound, up to 48m long. The act of aggrandizing the mound will, like the construction of cursus monuments and of the Cleaven Dyke, have involved an enormous input of communal labour by a large number of people. It may well be, then, that as with cursus building, this was a way for an entire community, or 'tribe', to commemorate its dead. Bank barrows are rare in Scotland and are scattered from Dumfries and Galloway to Moray (Brophy 2015); a few have been found elsewhere in Britain (Bradley 2019: 71-6).

It may well be that the longer ditch- or pit-defined cursus monuments found in Perth and Kinross, elsewhere in Scotland (Brophy 1998; 2015; Brophy and Millican 2015) and indeed the rest of Britain (Bradley 2019: 71–6) constitute aggrandized versions of rectangular mortuary enclosures, while bank barrows (and the hybrid bank barrow/cursus monument at Cleaven Dyke) may be aggrandized versions of long mounds. As noted above, the Cleaven Dyke may have been built onto a pre-existing Early Neolithic long barrow at its north-west end, and the Auchenlaich bank barrow seems to have been built onto a pre-existing chambered long cairn. This points towards a function in commemorating the ancient dead. The communal effort required to construct funerary mounds, and the even bigger effort required to construct cursus monuments and bank barrows, offers hints as to the nature of Early Neolithic social organisation (cf. Sheridan and Schulting 2020). Memorialising small numbers of individuals inside non-megalithic round and long barrows, effectively inaccessible for subsequent interments, may have portrayed them as 'founding ancestors' and the task of constructing the mound would have involved several households. By the time that cursus monuments and bank barrows were constructed, these acts of memorialising the ancestors seem to have involved the entirety of the broader community, or 'tribe', strengthening the identity and cohesion of this larger social grouping.

### **Middle Neolithic**

Middle Neolithic funerary practices are represented by structures which, at first sight, appear to resemble the large Early Neolithic houses or 'halls' of the initial farming groups but which are believed to be enclosed spaces for raised exposure platforms which would have allowed open-air decomposition of the dead. These consist of roughly rectangular post-built structures with rounded ends and with further postholes indicating the former existence of massive posts within the interior. They measure up to c.23m in length and c.9m in width. In at least some cases they appear to have been burnt down. Examples at [Littleour](#) beside the Cleaven Dyke (Barclay and Maxwell 1998) and at [Carsie Mains](#), also near Blairgowrie (Brophy and Barclay 2004), have been

excavated. As with the Early Neolithic rectangular mortuary enclosures, no human remains have been found although no unburnt bones left in the open air can be expected to have survived in the soil conditions of this part of Scotland. A further example known from cropmarks at [Balrae Cottage](#) near Blairgowrie adds to this small cluster of sites with another possible example was excavated in 2020 on the opposite side of the River Tay at the A9 Dualling Stanley Junction Borrow Pit (Airey 2020). This structure consists of six large and four smaller adjacent post holes, some of which contained undiagnostic prehistoric pottery. Further afield, two examples of this kind of site were excavated at [Balfarg Riding School](#) in Fife (Barclay and Russell-White 1983). No parallels for this type of monument can be found outside this part of Scotland and it appears to represent a regionally-specific phenomenon. The dating of these monuments relies on the apparent pre-dating of deposits of Grooved Ware at Littleour and Balfarg Riding School as well as a radiocarbon date of  $4640\pm 60$  BP ( $3629\text{--}3111$  cal BC at 95.4%, GU-4379) obtained from oak charcoal from a massive axial post inside Littleour. An 'old wood' effect may apply to a further date ( $4435\pm 70$  BP /  $3341\text{--}2917$  cal BC at 95.4%, AA-53270B) obtained from a charred hazel twig at Carsie Mains, which may have made its way into one of the small post holes after the post had rotted or been removed.

### **Late Neolithic**

Late Neolithic funerary practices are in evidence at the [Forteviot](#) cemetery which features deposits of cremated remains (Noble *et al.* 2017; 2020). Here, nine discrete deposits representing 18 individuals were found along with a small, undecorated hemispherical cup that could have been a chafing vessel for transporting burning embers to light the pyres (Sheridan 2020), and fragments of long bone 'skewer' pins that had probably fastened funerary garments (Leach *et al.* 2020). A single standing stone, of which only the stump survives, may have been a marker for the cemetery. Bayesian dating of radiocarbon dates for the calcined remains indicated a currency for this cemetery of between  $3080\text{--}2900$  cal BC and  $2890\text{--}2650$  cal BC (at 95%: Hamilton 2020a). This is one of a small number of similar cemeteries in lowland Scotland (a slightly earlier example being known from [Cairnpapple](#), West Lothian) and it has *comparanda* in northern and southern England (eg at Duggleby Howe, Yorkshire, and Dorchester upon Thames, Oxfordshire [Noble *et al.* 2017]).

The Forteviot cemetery doesn't appear to have an association with Grooved Ware pottery and it may be that it pre-dated the use of this kind of pottery in Perth and Kinross. Elsewhere in mainland Scotland (in contrast to Orkney) there are indications that cremation was the funerary rite associated with this ceramic tradition (Sheridan and Schulting 2020) but to date there have been no finds of human remains associated with Grooved Ware in this region. That said, at [Haughs of Pittentian](#) (MPK18545) there is a deposit of cremated human remains which have been radiocarbon dated to the 30th century BC (Becket *et al.* forthcoming). Stratigraphically, this deposit appears to post-date the construction of the timber 'square-in-circle' structure excavated there (*ibid.*). Also present, and loosely associated with the monument, was the base of a single Grooved Ware pot.

### **Ceremonial Monuments and Neolithic Enclosures**

The question of whether any Early Neolithic causewayed enclosures exist in Perth and Kinross (and indeed anywhere else in Scotland) has long been debated (eg Oswald *et al.* 2001). Putative candidates have been excavated at [Loanleven](#), near Blairgowrie in 2002 (Barclay pers. comm.) and [Leadketty](#), Strathearn in 2013 (Barclay 2001a; Wright and Brophy forthcoming). In terms of clarifying chronology and function, however, neither excavation produced any conclusive

evidence. Barclay also conducted excavations at another possible causewayed enclosure identified through the cropmark record at [Upper Gothens](#) near Blairgowrie. It was hoped that the site would be similar to a cropmark enclosure at [Collessie](#) in Fife (Barclay pers. comm.) where excavation in the 1980s had produced a date of 3800–3100 cal BC for charcoal from the fill of the inner ditch and had also produced some Neolithic pottery (Barber 1983; Cowie 1993). A pit containing Late Neolithic Grooved Ware was subsequently found here during fieldwork in 2011. Ultimately, Upper Gothens has proved to be Early Medieval in origin (Barclay 2001b) and the Collessie enclosure could equally be of Late Bronze Age date with residual Neolithic material in the ditch (see Cowie in Barber 1983). Despite these results, large circular to oval cropmark enclosures continue to hold potential as Neolithic sites and should not be discounted from future investigation. Indeed, the hilltop enclosure at [Dun Knock](#) in Strathearn demonstrates this, where the outer ditch (a cropmark) of this supposedly Iron Age site contained a complete Carinated Bowl pot and was found to date to the Early Neolithic (Wright and Brophy forthcoming; Poller forthcoming).

During the Late Neolithic, more circular monument forms emerged, with Perth and Kinross containing a fair proportion of the known timber circles in Scotland as well as cropmark sites categorised as pit-circles (as discussed by Millican 2008). Excavation of some pit-circles has revealed that they occur either in relative isolation (eg [Carsie Mains](#) (Brophy and Barclay 2004); within henge monuments (eg [North Mains](#) (Barclay 1983); or surrounding henge monuments (eg [Forteviot Henge 1](#) (Brophy and Noble 2012). Where timber circles and henges are found together, the timber circles are almost always earlier in date than the henges (Barclay 2005), and the excavated examples from Perth and Kinross conform to this pattern. At Forteviot, for example, the timber circle was dated to 2620–2475 cal BC (from oak charcoal: Brophy and Noble 2020: 135) while the henge it surrounded was probably constructed *2460–2230 cal BC at 95% probability* (modelled dates: Hamilton 2020b). That said, given that the timber circle date is from old charcoal, the possibility remains that the timber circle, like the henge that succeeded it, was constructed during the Chalcolithic period. There are a wide range of henge types known in the region, from ‘mini’ henges to massive earthworks (cf. Harding and Lee 1987; Younger 2015). However, where excavated (eg [Moncreiffe House](#), North Mains, Forteviot Henge 1), the earthworks have dated from the Chalcolithic period or later and are therefore discussed in the Chalcolithic and Bronze Age chapter of the Framework.

At no more than 50m in diameter (as was the case at Forteviot Henge 1), timber circles are dwarfed by palisaded enclosures which were enormous timber-defined arenas that emerged after 2800 cal BC (Noble and Brophy 2011a). Of the five currently known in Scotland, two are located in Perth and Kinross, just 4km apart on the south terrace of the River Earn at [Forteviot](#) (MPK1882/Canmore ID 26559/296263) and at [Leadketty](#) (MPK1961). These massive monuments would have consumed huge amounts of oak, labour, time and resources to build and maintain, and although superficially similar in plan when compared as cropmarks, the excavations have revealed them to be contrasting structures. Forteviot appears to have been a gathering place for ceremonial activities, while Leadketty is believed by the excavator to be a fenced enclosure that more likely contained settlement and perhaps farm animals (see Brophy and Noble 2020; Noble and Brophy 2014).

Standing stones, stone settings, and stone circles are relatively common in the region, with over 50 stone circles known. However, it remains unclear whether any of the stone circles were erected during the Neolithic period since excavated sites have consistently yielded Chalcolithic or Bronze

Age dates, with the exception of the stump of a standing stone at Forteviot associated with a Late Neolithic cemetery featuring cremated remains (Noble *et al.* 2017; Brophy and Noble 2020). Pitnacree is a good example where the cremated human remains found in the pit of a standing stone erected on the top of the Early Neolithic round barrow produced a date of 3740±60 BP, 2340–1960 cal BC (Sheridan 2010b). In discussing the structural sequence at Croftmoraig (Croft Moraig), Richard Bradley has argued convincingly that the earliest stone circle there dates no earlier than the Early Bronze Age, while the final oval stone ‘circle’ was erected during the Late Bronze Age (Bradley and Nimura 2016; cf. Bradley and Sheridan 2005). Further, excavated evidence for ‘four-poster’ stone ‘circles’, of which over 30 have been recorded in Perth and Kinross (Burl 1988), indicated they were erected and used during the Bronze Age. The most recently published example is at [Na Clachan Aoraidh](#) (MPK1245) above Loch Tummel (see Ellis and Ritchie 2018), and the example excavated by Derek Simpson at [Fortingall Church Site A](#) (MPK8) has produced a radiocarbon date of 1108–901 cal BC (2825±30 BP, SUERC-18874: Sheridan 2008). Further discussion on these monument types can be found in the Chalcolithic and Bronze Age chapter of the Framework.

Finally, the question of the nature and function of Late Neolithic structures featuring a central square setting of four massive posts surrounded by one or more post rings, such as at Leadketty (Wright and Brophy forthcoming), remains a topic for debate. While the evidence is presented in the section on ‘Settlement Evidence and Timber ‘Square-in-circle’ Structures’, it could be argued that these structures were anything but domestic in nature, and resolving the issue of their function must be one of the key outstanding research questions.

### **Rock Art**

Over 700 rock art sites are currently known to exist in Perth and Kinross, with notable concentrations in the upland valleys of Strathbraan and Strathtay. Through a combination of antiquarian, amateur and professional endeavour, an extensive rock art landscape has been recorded and partly excavated on the northern side of Loch Tay with the group of prehistoric rock carvings located within the Ben Lawers Estate considered one of the most extensive and best recorded in Britain (Bradley and Watson 2012: 29). Bradley and Watson’s investigations of four of the decorated rocks in this group, plus two undecorated outcrops for comparison, represents a significant contribution to our understanding of prehistoric rock carving, the rock selection process, the rock art’s wider environmental landscape setting, and the activities associated with its production (see Bradley *et al.* 2013; Bradley and Watson 2012). Analysis of the recovered lithics, mainly hammerstones, large quantities of worked and flaked quartz plus two broad blades of Arran pitchstone, has presented opportunities for interpretation to extend to the more performative aspects of rock art production and maintenance such as the visual effect of triboluminescence as quartz glowed after deliberate smashing across a rock’s surface (Bradley and Watson 2012: 59-60). Beyond the two pitchstone broad blades, dated to the Middle or Late Neolithic by cross-assemblage comparison (*ibid.*:49), this project did not produce any datable material and therefore also serves as an illustration of the outstanding challenge that remains of dating the region’s rock art. That said, the fact that the pitchstone blades have signs of wear that may indicate that they were used, in some way, to create the designs, accords with the idea that Atlantic rock art was created between c.2900 BC and c.2500 BC. Nationally, rock art is subject to ongoing research by the [ScRAP](#) project with future investigation underpinned by a thematic national research framework, [Future Thinking on Carved Stones in Scotland](#), which provides information on past, present and future carved stone research initiatives.

### **Settlement Evidence and Timber ‘Square-in-circle’ Structures**

Dating to the Early Neolithic, Scotland’s large rectangular timber ‘halls’ are associated with the first few generations of incoming farmers and they may well have served as communal houses for several family groups moving into an area, until such time as they felt sufficiently well established to separate into individual farming groups (Sheridan 2013; for a discussion of other interpretations of these structures, see Brophy 2007b). Although now located in the Stirling local authority area, but part of the County of Perthshire before 1975, the timber hall at [Claish](#) near Callander was excavated in 2001 (Barclay *et al.* 2003) and found to be a large rectangular timber building with bowed ends and internal divisions, of a similar scale to [Balbridie](#), Aberdeenshire. It measures c.25m by c.9.5 m and Bayesian-modelled radiocarbon dates suggest that it was built and used between c.3700 and 3650 cal BC (Whittle *et al.* 2011: 810, Fig. 14.174). A large assemblage of traditional Carinated Bowl pottery, cereal grains and hearths exhibiting repeating episodes of burning was found. Despite its superficial similarities with the Middle Neolithic mortuary enclosures of Tayside and Fife such as [Littleour](#) (discussed in the Funerary Monuments and Practices section), Claish was clearly a roofed structure of Early Neolithic date (Barclay *et al.* 2002; Brophy 2007b).

Several other timber hall sites have been identified across Perth and Kinross from the cropmark record, with notable examples at [Westerton](#) in Strathearn and [Fortingall](#) in Strathtummel. Like Claish, these rectangular examples appear to have morphological similarities to the excavated, more widely spaced Middle Neolithic post-built mortuary enclosures at Littleour and [Carsie Mains](#), although excavation will be required to determine whether these sites are roofed timber halls from the Early Neolithic, unroofed structures from the Middle Neolithic or indeed Early Medieval halls (as discussed in Millican 2009; Brophy 2007b).

Early Neolithic settlement evidence in the form of small rectangular timber buildings is very rare across mainland Scotland (cf Brophy 2016) and no example is currently known in Perth and Kinross. While it’s been suggested that the structure at [Carsie Mains](#) was a possible house (Toolis 2011), it is far more likely to be a Middle Neolithic mortuary structure based on the date of 3341–2910 cal BC (discussed in the Funerary Monuments and Practices section) and the fact that the arrangement of posts does not represent a configuration capable of supporting a roof (Brophy and Barclay 2004).

It has been argued that pits are an indicator of, or proxy for, Neolithic settlement (Brophy and Noble 2011) and several instances of individual pits and clusters of pits have been recorded in the region. Examples that offer potential in this regard are at [Grandtully](#) in Strathtay (Simpson and Coles 1991) which produced pottery of Middle Neolithic type, at [Wellhill](#) in Strathearn (Wright and Brophy forthcoming), and at [Bothy Wood](#), which was excavated in advance of the Logierait Reinforcement pipeline construction in 2009 (Gray and Kirby 2009). Pits were also found during excavations in 2018 as part of A9 Dualling between Luncarty and the Pass of Birnam (Paton and Wilson 2019). Over 400 sherds of Neolithic pottery were found in pits during the works ranging from four sherds from at least two Early Neolithic Carinated Bowls, 12 sherds representing two Middle Neolithic Impressed Ware vessels and the remaining majority of Late Neolithic Grooved Ware from at least 23 vessels (Milburn and McLaren 2021). This material offers further proxy evidence for a richly settled Neolithic landscape with the potential for structures surviving and awaiting discovery beyond the limits of the development area. Late Neolithic pits are not common in Perth and Kinross, and so the discovery of several containing Grooved Ware at this site is noteworthy. In 2017 over 40 pits (and pits/postholes) were excavated in advance of the

construction of an agricultural shed at [Hallhole Farm](#) (MPK19100), a site situated 700m south of the [Cleaven Dyke](#) which produced 830 sherds of pottery representing c. 130 vessels (Fyles 2017). The assemblage included Early Neolithic modified Carinated Bowl pottery, Middle Neolithic Impressed Ware and Late Neolithic Grooved Ware pottery as well as evidence of a knapping floor and some 300 lithics and stone tools (*ibid.*).

With more evidence emerging through archaeological investigations, the question arises whether a series of Late Neolithic timber 'square-in-circle' structures, characterised by a central square setting of four massive timbers surrounded by one or more circle and often associated with Grooved Ware pottery, were places of habitation or solely of ceremony – and indeed whether all, or any, were roofed (cf. Greaney *et al.* 2020). As indicated elsewhere in this chapter, opinions differ. [Leadketty](#) (Wright and Brophy forthcoming) and [Haughs of Pittentian](#) (MPK18545), Crieff (Becket 2014; Becket *et al.* forthcoming) are excavated examples in Perth and Kinross, and other potential examples are evident in the cropmark record (eg [Green of Invermay](#) near Forteviot [MPK1910]). The Leadketty structure was associated with Grooved Ware and the flat base of a pot that is certain to be Grooved Ware was found at Pittentian. Similar-looking structures have been found elsewhere in Scotland, on [Machrie Moor](#), Arran (Haggarty 1992) where one pre-dated a stone circle and at [Greenbogs](#), Aberdeenshire (Noble *et al.* 2012) where a domestic function was suggested. Examples found elsewhere in Britain and Ireland include one that formed part of a major timber ceremonial complex at Ballynahatty, Co. Down (Hartwell 2002), another located outside the entrance to the Eastern passage tomb at Knowth in the Boyne Valley, Co. Meath (Eogan and Roche 1999), and two inside the Durrington Walls 'mega henge', Wiltshire (Thomas 2010). A discussion of the nature, significance and distribution of the almost 30 examples known from Britain and Ireland has recently been published by Susan Greaney *et al.* (2020: 228, Fig. 17). Discussing the Durrington Walls examples, Julian Thomas argued that these structures were possibly lineage shrines or cult houses – monumentalised versions of houses (Thomas 2010). This idea of 'Great Houses' has also been expressed by others (Noble *et al.* 2012; Brophy 2016) but alternative interpretations as other kinds of ceremonial structure, not necessarily roofed, are equally plausible. Sixteen of these structures have been dated across Britain and Ireland (Greaney *et al.* 2020) and while most appear to date to the second quarter of the third millennium BC, the example from Haughs of Pittentian appears to date to the first quarter of that millennium (Becket *et al.* forthcoming). The example from Machrie Moor, Arran, also dates to around this time, possibly a little earlier (Copper *et al.* 2018). The outward-flaring nature of the postpipes at this site is also of interest, being suggestive of a roof or the need to support some other heavy elevated structure (Becket 2014; Becket *et al.* forthcoming). An unroofed, half-scale re-imagining of the structure has been constructed in the grounds of the Strathearn Community Campus.

### **Cultivation Remains**

Evidence for farming and cultivation has been recovered in a range of forms and indeed there are more traces of Neolithic farming here than anywhere else in mainland Scotland (Brophy and Wright 2021). Possible ardmarks of Early Neolithic date were found adjacent to a Mesolithic pit-alignment and Neolithic pit cluster at [Wellhill](#), near Dunning. Possible field ditches were also found here as well as at nearby [Cranberry](#) (*ibid.*). Traces of cultivated soils or ridges of probable Neolithic date were identified during the excavation of cairns or barrows at [North Mains](#) (Barclay 1983) and [Pitnacree](#) (Coles and Simpson 1965).

Excavations at the later prehistoric upland settlement site at [Carn Dubh](#) (MPK1752) on Moulin Moor near Pitlochry, in the 1980s, produced ard-mark evidence. However, this could not be dated

and although Neolithic lithics were found, no associated settlement evidence was recovered (Rideout 1996).

Archaeological excavation at [Hallhole Farm](#) (MPK19100) has provided macrobotanical evidence for crop types cultivated during the Neolithic. This multiphase site spanning the Neolithic-Early Bronze Age produced emmer wheat, barley (including naked barley) and flax seeds from bulk soil samples obtained predominantly from a pit also containing Early Neolithic pottery (Fyles 2017). Evidence of emmer wheat, bread wheat and barley have also been recovered from [Claish](#), and barley (including naked barley) from [Carsie Mains](#) (Bishop *et al.* 2010); this list is not exhaustive. Bread wheat is a rare find from Neolithic sites in Scotland, being found only in Early Neolithic contexts (*ibid.*), it is thought that its use declined as the farmers adapted their agricultural regime to the environments of Scotland.

### **Palaeoenvironmental Evidence**

Palaeoenvironmental evidence for the Neolithic period is patchy across the region, with a summary of the broader context provided by Tipping as part of the [ScARF Neolithic Report](#) (ScARF 2012). Site-based approaches remain the most common and although in the minority, larger scale landscape studies have made a notable contribution to our understanding of the Neolithic environment and the contextualising of substantial monuments such as the [Cleaven Dyke](#) (Barclay and Maxwell 1998). In the uplands, pollen analysis from the wider study around [Carn Dubh](#) has provided evidence of Early Neolithic woodland clearance and pasture (Rideout 1996), while on [Creag Na Caillich](#) above Killin, there is evidence that upland blanket peat started to form during the early fourth millennium BC and that during the late fourth millennium BC there was clearance of forest and scrub, including by burning, but seemingly not for grazing purposes (Tipping in Edmonds *et al.* 1992). Palaeoenvironmental work over a broad timescale was undertaken as part of the Ben Lawers Historic Landscape Project and the discovery of waterlogged woodland remains in Loch Tay by that project was especially significant (Dixon 2007, Dixon 2016). The potential of [Craggantoul](#) to contribute tree-ring data to the development of long native tree-ring chronologies in this region for dating, environmental and climate research applications remains unassessed (Mills 2021). Most recently, the SERF project undertook extensive sampling and archaeobotanical analysis around Forteviot and in Strathearn more widely, furthering understanding of how local environmental resources were utilised across a broad time frame including the Neolithic (Brophy and Noble 2020: 20, 48).

### **Material Culture**

#### **Pottery**

Finds of Neolithic pottery are not especially numerous in Perth and Kinross, although they span the whole of the period, from the Early Neolithic traditional Carinated Bowl pottery found at Claish (Sheridan in Barclay *et al.* 2003) to the Late Neolithic Grooved Ware found, for example, at Littleour (Sheridan 1998) and Leadketty. Trevor Cowie compiled a useful gazetteer of the Neolithic pottery found in central and eastern Scotland over a quarter of a century ago (Cowie 1992; 1993), listing 12 findspots (although note that the 'plain Grooved Ware' found at Croft Moraig is now known to be of Late Bronze Age date, and a similar date is highly likely for the same kind of pottery from Moncreiffe (Bradley and Sheridan 2005; Bradley and Nimura 2016). Since Cowie's review there have been several new finds of Neolithic pottery, but the number of findspots is still lower than 25.



As far as the Early Neolithic Carinated Bowl tradition is concerned, the assemblage from Claish, and the single sherd from a pit from the A9 Dualling Project between Luncarty and Pass of Birnam (land parcel 6.2), belong to its earliest, 'traditional' form while the assemblage from Pitnacree includes one lugged vessel, suggesting that this is an early example of 'modified Carinated Bowl' pottery (see Sheridan 2016 for an overview of Scottish Neolithic ceramic traditions). 'Modified Carinated Bowl' pottery is also represented in the fairly fine lugged Carinated Bowl with vertical ripple burnish from the Clyde-type chamber at Cultoquhey (Henshall 1972: 306), although it is unlikely to be as late as the human remains from the chamber that have been dated to 3628–3366 cal BC (see 'Funerary Monuments and Practices' for details of this date). The assemblage of 'modified Carinated Bowl' pottery from Barbush Quarry, Dunblane (Cowie 1992; 1993) is further from the 'traditional' canon, with thick-walled, coarse vessels including one with a lug (the findspot is currently in Stirling but was formerly in the pre-1975 County of Perthshire). The modified Carinated Bowl pottery found at [Hallhole Farm](#) (MPK19100) is similarly divergent from the 'traditional' canon, but in a different way, with the illustrated vessel appearing to be a deep-bellied, closed bipartite bowl or jar (Fyles 2017: Illus 6; see also MacSween in Fyles 2017: 82-110). One of the contexts containing modified Carinated Bowl pottery at Hallhole Farm (Pit 29) is associated with a radiocarbon date of 3656–3526 cal BC (SUERC-74463, 4820+/-30 BP). This brief outline does not cover all of the examples of Carinated Bowl pottery that have been found in Perth and Kinross.

Middle Neolithic pottery is represented by the assemblage from [Grandtully](#) (Simpson and Coles 1991) which appears to be an early version of Impressed Ware pottery with incised and impressed decoration. It includes a collared vessel with incised panelled decoration on its collar and rim bevel that relates, albeit distantly, to a tradition of pottery expressed in Orkney and the Outer Hebrides as Unstan bowls (Sheridan 2016). A further Impressed Ware assemblage was found in pits at Hallhole Farm (MacSween in Fyles 2017: 82-110; Fyles 2017: Illus 6), and although none of the contexts in question yielded a radiocarbon date, a date within the second half of the fourth millennium BC is likely, 'sandwiched' between the modified Carinated Bowl and the Grooved Ware that was found in other contexts at the site. It remains to be seen whether the pottery found during the A9 Dualling project between Luncarty and the Pass of Birnam (in Land Parcel 6.5) is of Impressed Ware or Grooved Ware. At the time of writing post-excavation work is not sufficiently advanced to clarify the identifications (Paton and Wilson 2019), but this will doubtless be resolved in due course.

Within the region, Late Neolithic Grooved Ware has been found at Littleour, Leadketty, Hallhole Farm, Pittentian and the aforementioned A9 Dualling site. The Littleour pottery is of particular interest. Here, parts of eight pots were found in a pit within, but post-dating, the Middle Neolithic mortuary enclosure and included burnt-on organic residue which has produced the latest date for Grooved Ware in Scotland when it was initially dated (Sheridan 1998). Re-dating of the pottery as part of Mike Copper's *Tracing the Lines* project (Copper *et al.* 2018; forthcoming) has confirmed that there is a surprisingly (and unaccountably) wide date range for vessels from this single pit, with the latest dates within the third quarter of the third millennium BC while others appear to date to the first half of the third millennium BC. This assemblage is therefore relevant to addressing questions surrounding the transition from the Late Neolithic to the Chalcolithic and especially with regard to the chronological overlap in the use of Grooved Ware and Beaker pottery. The Hallhole Farm Grooved Ware (MacSween in Fyles 2017: 82-110) is similarly associated with a relatively wide date range, with one context (Pit 65) producing a date of 2877–2635 cal BC (SUERC-74469, 4157+/-25 BP) and another (Pit 16), a date of 2575–2469 cal BC

(SUERC-74467, 3997±29 BP) which is one of the latest dates for Grooved Ware in Scotland (cf. Copper *et al.* 2018). Some of the vessels resemble Grooved Ware examples from Littleour, and elements of the assemblage (including those found in Pit 16) are comparable with Ian Longworth's 'Durrington Walls style' Grooved Ware which is known from elsewhere in mainland Scotland (eg at [Powmyre Quarry](#) by Glamis, Angus) and in many parts of England.

There has been a degree of investigation into the contents of some Neolithic pottery from Perth and Kinross. Pollen analysis of burnt-on organic residues from four of the Grooved Ware pots from Littleour (Long 1998) detected pollen from hazel, ling, nettle, ribwort plantain, dandelion, meadowsweet and crucifers, all of which are potentially edible plants. Pollen from birch, sedges, buttercup, common vetch, fern, bracken and sphagnum moss were also detected and are likely to reflect the environment around the site, although the sphagnum moss may have been collected for a specific purpose. Lipid analysis of two Early Neolithic sherds from Claish found abundant evidence for saturated animal fat plus possibly some epicuticular wax from a plant (Cramp and Evershed 2010; cf. Cramp *et al.* 2014). The animal fat was ruminant dairy fat in one sherd and adipose in another (Lucy Cramp pers. comm.), and while the species of ruminant cannot be determined from the lipids, it is arguably likely to have been cattle. Lipid analysis is a valuable source of information on the animals that were consumed since unburnt bone tends not to survive in the acid soils of Perth and Kinross. Although over the local authority boundary, burnt fragments of pig, cattle and red deer bone excavated from the 'hall' at Claish indicate the potential for recovery from similar environmental conditions to Perth and Kinross (Barclay *et al.* 2003). Lipid analysis is also important in confirming that the earliest Neolithic husbandry practices involved the use of dairy cattle, a point that has been confirmed at a number of sites across Britain (Cramp *et al.* 2014).

### ***Lithic artefacts***

As regards lithic artefacts, the stone axeheads found in Perth and Kinross and the quarry site on Creag na Caillich have received considerable research attention. Axeheads of jadeitite from the Alps in north Italy have been found in antiquity at Monzievairst (Sheridan 1992), from the bank of the River Ericht at Rattray, and at Fortingall. One from Lochearnhead is also relevant as the findspot was formerly in the County of Perthshire. Thanks to the international research project, *Projet JADE*, we can now say that the jadeitite used for the Monzievairst axehead came from Monte Beigua (and more specifically the western part of the massif), above Genoa, while that used for the other three came from Monte Viso, south-west of Turin (Pétrequin *et al.* 2017, *Inventaire* on the CD). The jadeitite for the Rattray example came from the southern part of that massif and the material for the Fortingall example probably came from Bulè (*ibid.*). These axeheads most likely came to Scotland around 3900 BC as treasured possessions by the immigrant farmers from northern France and would have been centuries old by the time they were deposited (Sheridan *et al.* 2011; Sheridan and Pailler 2012). The Rattray example was deposited vertically in the bank of the river Ericht, its blade downwards, and the Monzievairst example was burnt before it was deposited. Both of these acts are consistent with Continental depositional practices involved with returning sacred and special objects to the world of the gods whence they were believed to have originated (Pétrequin *et al.* 2012a; 2012b; 2017a; 2017b). There is no precedent in Britain or Ireland which confirms that the people who deposited these axeheads were indeed Continental immigrants (or descendants thereof). The Lochearnhead axehead is reputed to have been found in a 'cist', but there is no independent confirmation of this. As for the Monzievairst axehead, investigations by Steve Ponsonby of the Archaeological and Historical section of the Perthshire Society of Natural Science have uncovered an intriguing reference in

the Statistical Account of 1793 to the discovery of two axeheads in a barrow: '*about 200 yards west of the church of Monievaird [sic], a barrow was opened some years ago, in which two urns were found, each containing a stone of bluish colour, very hard, about 4 inches long, and of triangular shape, somewhat resembling the shape of an ax [sic]. One of them is in the possession of Peter Murray esq, younger, of Ochertyre. I am told they are of the same kind of stone and shape, with those which the inhabitants of the South Sea Islands fasten to a shaft, and use as a weapon of war.*' (Note that the reference to 'bluish' may be a mis-translation of the Gaedhlig adjective 'glas', which can also mean green.) This description, and the mention of Peter Murray of Auchertyre, fits what we know about the Monzievaird axehead and the reference to South Sea Islanders will have been informed by Captain Cook's voyages during which he will have seen New Zealand nephrite axe- and adze-heads. Sadly nothing is known of the barrow or the pots and the whereabouts of the second axehead are unknown.

Other stone axeheads found in Perth and Kinross have been studied by Roy Ritchie and Jack Scott for the (formerly-named) Implement Petrology Group (Ritchie and Scott 1988) with thin-sectioned examples listed in *Stone Axe Studies 2* (Clough and Cummins 1988: 239). Ritchie and Scott petrologically identified 20 axeheads, roughouts and axehead flakes from the pre-1975 County of Perthshire and concluded that nine of these, including the roughout and flake from Creag na Caillich, were of the calc-silicate hornfels from the Creag na Caillich quarry above Killin to the west of Ben Lawers; this rock type has been given the IPG Group number XXIV. One other, labelled 'banded hornfels', might also come from that quarry. Of the other axeheads, five are of porcellanite (Gp IX) from Tievebulliagh or Rathlin Island, Co. Antrim; three are of Langdale tuff (Gp VI) from the Lake District (with a possible fourth example); and one is of a cherty slate. To these can be added a further Langdale tuff (Gp VI) axehead found at Wellhill. A review of all the axeheads found in Perth and Kinross since 1988 would be necessary to establish whether any other exotic axeheads have been found. The presence of imported axeheads, like the evidence for exportation of Creag na Caillich Group XXIV axeheads to elsewhere in Scotland and England (Clough and Cummins 1988: map 19; Edmonds *et al.* 1993: Illus. 3), exemplifies the interconnected nature of Neolithic farming groups with networks, over which objects, ideas and people moved, being established upon the initial arrival of Continental farmers (Sheridan 2017).

Information on the exploitation of the [Creag Na Caillich](#) Group XXIV calc-silicate hornfels has been provided by the National Museums' Scotland-funded excavation in 1989 (Edmonds *et al.* 1992). This study concluded that axehead production started late in comparison to the exploitation of porcellanite and Langdale tuff and was on a much smaller scale. Exploitation seems to have been intermittent and to have taken place during the Middle and Late Neolithic, probably from the late fourth and into the third millennium BC. The relatively small number of axeheads identified as being Group XXIV are, however, scattered widely and as far as Bedfordshire with most coming to light in north-east Scotland. It is clear that Late Neolithic cushion maceheads were also made from Group XXIV rock, with a petrologically-confirmed example found at [Knock](#) in Lewis and a few others suspected (Ritchie 1992).

As for other types of ground stone artefact, Middle to Late Neolithic maceheads appear conspicuous by their absence from this part of Scotland (Roe 1968: Fig. 34; 1979: Fig. 11) with the miniature pestle macehead found, along with a Food Vessel in a child's cist, over the local authority border at [Glenhead](#), Doune being the closest example and dating to the Early Bronze Age (Anderson 1883: 452-3, Figs 10, 11).

28 carved stone balls, probably dating to c.3000–2800 BC, are known to exist in the region with the majority housed in the collections of Perth Museum and Art Gallery. The most recent addition, with six knobs, was found at Sheriffmuir (MPK20240) on the Blackford Estate in 2017 (Anderson-Whymark and Hall 2020). Another six-knobbed ball had previously been found at [Sheriffmuir](#), although its precise findspot is unknown and it is likely to have been several miles from the 2017 findspot. An assemblage of Late Neolithic struck lithics was also recovered from the topsoil around the 2017 findspot during fieldwalking by Anderson-Whymark and Hall. This provides both circumstantial dating evidence and an indication that carved stone balls were not necessarily deposited in isolation but can form part of larger episodes of activity (*ibid.*). With fewer than 50 of Scotland's known examples (c.520) having accurate findspots or contextual data (*ibid.*: 1), the Sheriffmuir ball is a valuable contributor at a national level to discussions on these enigmatic objects, as well as at a local level, in providing an opportunity for future investigation of the wider environs of individual findspots. In addition to being a valuable research resource, carved stone balls form an important popular entree for the public into engaging with the past (Hall *et al.* 2017).

With the exception of the pitchstone artefacts (Ballin 2009; 2015), the struck lithics of Neolithic Perth and Kinross have arguably not received as much attention as they deserve. Dene Wright's unpublished report for the Tay Landscape Partnership Scheme (2012) assessed collections for Mesolithic lithics and revealed the majority of finds to be non-diagnostic to any prehistoric archaeological period although some were typologically categorised as having Neolithic or Bronze Age origins. Beyond this, there is currently no reliable overview of the region's various lithic scatters and stray lithic finds, however, some important observations can still be made. The presence of pitchstone artefacts from the Isle of Arran in the Early Neolithic 'hall' at Claish indicates that pitchstone was being imported to this part of Scotland from at least as early as c.3700 BC. The presence of Middle or Late Neolithic pitchstone associated with rock art at Ben Lawers (Bradley *et al.* 2013: 49) as well as in a seemingly Late Neolithic context at Sheriffmuir (Anderson-Whymark and Hall 2020), demonstrates that it was still being imported several centuries later. To Ballin's list of 11 findspots of pitchstone in Perth and Kinross (and including Claish, Stirling) published in 2009 (Ballin 2009, Appendices 1 and 2) can be added finds from Forteviot (Brophy and Noble 2020: 85, 261), Wellhill, Ben Lawers, Sheriffmuir (Anderson-Whymark and Hall 2020), Freeland Farm (Nicol and Ballin 2019) and Leadketty.

Regarding the use of other raw material, locally-obtained flint seems to have been used at Sheriffmuir (Anderson-Whymark and Hall 2020), while good-quality translucent dark grey flint, believed to have been imported from a chalk zone within England, was used for the Late Neolithic artefacts found at Littleour (Saville 1998). While Saville did not specifically name Yorkshire as a candidate source area, Torben Ballin has emphasised the extent to which Yorkshire flint was imported into southern Scotland during the Middle and Late Neolithic (Ballin 2011). A review of all the finds of probably imported Neolithic flint in Perth and Kinross would be worth undertaking, to gauge the extent of its spread in this part of Scotland. Other non-local lithic resources are the quartzite pebble and flint found associated with rock art on Ben Lawers, which are thought to have been brought from a coastal deposit (Bradley *et al.* 2013: 49). Other raw materials known to have been used during the Neolithic in this part of Scotland include locally-available quartz and agate. More information on the choice of raw materials in Neolithic Scotland more generally can be found in ScARF 2012 and Warren 2006.

### **Artefacts of organic materials**

Artefacts of wood, bone and antler are rarely found in mainland Scotland and this is also the case in Perth and Kinross. However, a fine collection of calcined bone 'skewer' pins was found in association with cremated remains in the Late Neolithic [Forteviot](#) cemetery (Leach *et al.* 2020; Noble *et al.* 2007). These survived because they had passed through the funeral pyre, having been used to fasten funerary garments. Carbonised wooden fragments found in association with the four-post building at [Leadketty](#) are still being analysed and are anticipated to be reported as part of SERF Monograph 3 (Wright and Brophy forthcoming); it remains to be seen whether they were structural or artefactual.

## **Research Agenda**

This section presents the agenda themes for the Neolithic in Perth and Kinross. Some are nested under the **overarching PKARF theme headings**, aimed at addressing wider multi-period priorities, while others are **period-based** and specific to the scope of this chapter. Where appropriate, a short explanatory note is provided, detailing underlying **period-based** thematic priorities which is then followed by the research questions generated to address them.

### **Environment**

**Priority 1:** Although valuable palaeoenvironmental work has been carried out as part of landscape and site-based investigations, clarity is still lacking on the overall palaeoenvironmental context (including climate) of the region's Neolithic. The reliance on timber and other woodland resources in Neolithic lifeways is evident (Noble 2017), but there is much to learn about how these resources were obtained and used, what technologies were deployed, and what evidence there is for impact on or stewardship of woodland. A better understanding of human / climate interactions is needed.

#### **Questions:**

1. What is the palaeoenvironmental context for Perth and Kinross' Neolithic, and how did it change over the course of the Neolithic?
2. What is the relationship between humans and woodlands in Neolithic Perth and Kinross and how does that change through space and time?
3. How were woodlands used, impacted upon, stewarded (if at all) during the Neolithic and what wood technologies were in use?
4. What potential is there to develop prehistoric tree-ring chronologies in Perth and Kinross for archaeological dating, climate record and other palaeoenvironmental applications?

### **Upland/Lowland Relationships**

**Priority 1:** The Upland Neolithic remains poorly understood with relatively few modern excavations having been undertaken. There is more needing to be known about the chronology of funerary and other ceremonial monument and potentially Neolithic earthworks and hilltop enclosures remaining unexplored. Thought processes as followed by Loveday (2016) have proved effective and could be applied here even prior to fieldwork, with an Upland Neolithic survey providing an opportunity to answer key questions.

### Questions:

1. To what extent can significant differences in Neolithic practices, traditions and settlement patterns be identified between the upland and lowland areas of Perth and Kinross and how might such differences be explained?
2. How might we best locate and investigate settlement patterns and subsistence activities in upland areas, where the scope for fieldwalking may be limited?
3. To what extent, if at all, do hilltop enclosures relate to Neolithic activity and what do they tell us about lifeways and practices in this period?
4. To what extent is the apparent upland/lowland divide influenced by differential preservation and visibility of archaeological remains?

### Periods of Transition

The traditional approach to characterising the past in terms of periods (ie Mesolithic, Neolithic, Chalcolithic etc.) has its limitations, especially with regard to defining and explaining the transition from one period to the next. As far as the Neolithic to Chalcolithic transition is concerned, for example, a perspective that considers developments in the centuries before and after the first appearance of the 'Beaker phenomenon' might help us to understand better the context in which changes were occurring, the impact of Continental influences (including new people) and the response to them. Following the approach taken by Rebecca Younger (2015), one potentially fruitful approach might be to focus attention on henges, since in several cases they are known to have been constructed during the second half of the third millennium BC in places where earlier monuments, dating to the first half of the third millennium BC, had existed.

**Priority 1:** The transition from the Mesolithic to the Neolithic is an important but poorly understood topic, driven in partly due to limited Mesolithic evidence, and requires further study.

**Priority 2:** More work is needed on the 3rd millennium BC and the poorly-understood transition from the Neolithic to the Chalcolithic.

### Questions:

1. When did farming arrive in Perth and Kinross? We know people were farming at Claish as early as c.3700 BC, but were farmers present in Perth and Kinross much before then?
2. What was the relationship between Mesolithic and Neolithic communities in the region, and for how long did the Mesolithic hunting-fishing-foraging lifestyle continue after the first farmers appeared?
3. What evidence exists to support a theory of Mesolithic ways of life ending as a result of hunter-fisher-foragers becoming acculturated to a farming lifestyle?
4. What does the transition between the Neolithic and Chalcolithic look like, and when – and over how long – did it occur?
5. What was the chronological overlap in the use of Grooved Ware and Beaker pottery in Perth and Kinross?
6. How many Beaker-using Continental immigrants arrived in Perth and Kinross, and why did they come to this part of Scotland?
7. What was the impact of the Continental influences, including the new technology of using metal, on the resident Neolithic communities and how did they respond to their arrival?

## Cropmarks

**Priority 1:** The region's cropmark record is of significant importance to understanding the monument landscape of this period and this has been clearly demonstrated through recent research such as the SERF project. Although valuable work has been carried out, further synthesis and characterisation of the cropmark record is still needed and the potentially Neolithic structures that have been identified, such as by Millican (2016a, 2016b), require further assessment and ground-truthing.

### Questions:

1. How can an evaluation of all cropmark sites that might be Neolithic assist in our understanding of the monument landscape of the region?
2. What can an evaluation of lessons learned from prior excavations of cropmarks in the County, and beyond, tell us about Perth and Kinross's Neolithic?
3. How can revisiting sites classed simply as 'cropmarks' or 'enclosure' refine our picture of the region's Neolithic?
4. To what extent would re-assessing and better characterising the cropmark record in Perth and Kinross more generally and in light of excavations, expand our understanding of the Neolithic of the region?
5. Which, if any, of the region's cropmark sites, where a resemblance to causewayed enclosures exists, date to the Neolithic?

## Settlements and Timber 'Square-in-circle' Structures

**Priority 1:** There is a need to improve our currently poor understanding of Neolithic settlements and how they changed over time: for example, what was the architecture of houses that succeeded the Claish 'hall', particularly at sites where only pits are found? There is currently very little evidence for domestic timber structures across the region with knowledge largely dependent on pits and cropmarks.

**Priority 2:** The record for the Middle Neolithic (c.3500–3000 BC) is particularly thin. Recent developer-funded discoveries and cropmark identifications offer potential targets and present opportunities for focusing future research. A systematic fieldwalking campaign, akin to that employed by Tim Phillips in Strathtay in 1994 (Phillips 2002), could help to identify settlement sites and contextualise the cropmark record whilst also encouraging community participation and skills training. It may also aid identification of lowland late Mesolithic sites. Ground truthing by excavation following fieldwalking would be key to capitalising on the information gathered (cf. Barclay and Wickham-Jones 2002).

### Questions:

1. What kinds of house structure were used during the Neolithic and how did domestic architecture and the size, organisation, temporality and distribution of settlements change over the course of the Neolithic?
2. What can be said about the domestic structures that had probably existed at sites where the only surviving evidence is in the form of pits and artefact scatters?
3. How can a systematic fieldwalking campaign (and an assessment of lithic collections already held in museums) assist in the identification of settlements and of individual domestic structures?

4. When considering the site of [Haughs of Pittentian](#) (MPK18545), can any of the timber 'circle-and-square' structures of the Late Neolithic (and possibly Middle Neolithic) be confidently interpreted as houses, as has been claimed? If so then were they roofed, if 'great houses' then where did the ordinary people live or were these non-domestic special structures, roofed or otherwise?

## **Economy, social organisation, material culture and patterns of resource use**

**Priority 1:** Only a vague sense of the agricultural and animal husbandry regime exists and of what wild resources were consumed during the Neolithic in Perth and Kinross.

**Priority 2:** There is a need to better understand the nature of social organisation and its possible changes over the course of the Neolithic in this part of Scotland.

**Priority 3:** Our understanding of the Middle Neolithic pottery in Perth and Kinross is constrained by its paucity.

**Priority 4:** Greater understanding is required concerning the use of resources and the changing patterns of connectivity linking the Neolithic inhabitants of Perth and Kinross with each other and with people elsewhere. In particular, it would be useful to find out whether any English (probably Yorkshire) flint arrived in this part of Scotland prior to 3000 BC

### **Questions:**

1. Beyond a probably early cessation of cultivation of bread wheat, in what other ways did the subsistence strategy change over the course of the Neolithic?
2. What was the nature of social organisation in Perth and Kinross, and how (if at all) did it change over the course of the Neolithic?
3. What can we infer about social organisation from the large Late Neolithic palisaded enclosures and timber 'square-in-circle' structures?
4. To what extent can the cursus monuments, bank barrow/s and hybrid cursus/bank barrows be interpreted in terms of activities at a tribal level?
5. How do the Middle Neolithic Impressed Ware and Late Neolithic Grooved Ware of Perth and Kinross compare with their counterparts elsewhere in Scotland and in Britain more widely?
6. What strategy could be used to locate further sites containing Middle Neolithic Impressed Ware and Late Neolithic Grooved Ware pottery?
7. What further can be understood about the chronology of exploitation of calc-silicate hornfels at Creag na Caillich?
8. What evidence exists for the arrival of English (probably Yorkshire) flint in Perth and Kinross prior to c.3000 BC?
9. What is the overall picture of stone exploitation as reflected in the stone axeheads found in the region? In other words, what proportion of all axeheads that have been found belong to 'Grouped' rock types?



## Monuments, funerary practices and enclosures

**Priority 1:** The chronology and associated funerary practices of monument types such as long mounds, cursus monuments and bank barrows remain poorly understood. A wider assessment of the potential for further Early Neolithic round barrows is also required.

**Priority 2:** Greater clarity of chronology and form of the Cleaven Dyke is required, including whether its north-west end consisted of a long barrow with an oval barrow adjacent to it.

**Priority 3:** Very little is known about the funerary practices of the Late Neolithic users of Grooved Ware pottery. For example the Forteviot cemetery featuring deposits of cremated remains was not associated with this kind of pottery.

**Priority 4:** It still remains unclear as to whether there are any Neolithic causewayed enclosures in Perth and Kinross and how many Neolithic enclosures of any type there are in this region.

**Priority 5:** It is unclear whether any standing stones, stone circles or other orthostatic stone settings (apart from the Forteviot standing stone) were erected in Perth and Kinross during the Neolithic.

### Questions:

1. What funerary practices were associated with the builders of Early Neolithic long mounds in the region and how do they compare to those found in similar monuments elsewhere?
2. What evidence exists for cursus monuments or bank barrows being used for the laying-out or burial of the dead?
3. Over what date range were long mounds, cursus monuments and bank barrows constructed?
4. In how many cases were cursus monuments built onto pre-existing Early Neolithic long mounds?
5. When was the Cleaven Dyke constructed, and could the application of techniques such as OSL dating provide new information?
6. What evidence is there for the north-west end of the Cleaven Dyke actually being an Early Neolithic long barrow, and for an oval barrow adjacent to it?
7. What evidence is there for the presence of Neolithic causewayed enclosures in Perth and Kinross?
8. How many Neolithic enclosures are there in this region, when were they constructed and how were they used?
9. What was the nature of Middle Neolithic funerary practices, and of Late Neolithic funerary practices associated with the users of Grooved Ware pottery?
10. What evidence exists for standing stones (other than the Forteviot cemetery-marker stone), stone circles or stone settings being erected during the Neolithic in Perth and Kinross?

## Rock Art

**Priority 1:** The region has a rich rock art record but its chronology is unclear. Further work is required to acquire dating evidence for the lifecycle of decorated stones and practices associated with them.

**Priority 2:** Rock art requires better integration into narratives of the period where it can contribute more effectively to the understanding of the Neolithic in both the uplands and lowlands.

**Questions:**

1. What is the chronology of the region's rock art?
2. To what extent is rock art associated with Neolithic and Early Bronze Age activities in the region, both ritual and domestic?
3. What relationships can be determined between rock art and the natural landscape in the region?
4. What is the character of rock art in this region, and what can this tell us about connectivity with other regions within and outwith Scotland?
5. How can rock art contribute more holistically to our understanding of the region's Neolithic?

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