GWYNEDD HUT CIRCLE SETTLEMENT SURVEY

ARCHAEOLOGY AND CONSERVATION

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Gwynedd Hut circle Settlement Survey

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George Smith

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1. SUMMARY

The area of North West Wales comprising the old counties of Anglesey, Caernarfon and Meirionnydd contains numerous well-preserved examples of settlement of the prehistoric and Romano-British periods. These settlements are characterised by the presence of round houses and are now generally subsumed under the term 'hut circle settlement' (RCAHME). The Gwynedd Sites and Monuments Record includes about 1000 sites of probable hut circle settlement type and there are about another 300 'enclosures' without obvious hut circles which might be settlements of the same period. The hut circle settlement monument class provides an archaeological resource of international value and a project was therefore established to ensure its proper management. This project, the Gwynedd Hut Circle Settlement Survey, was based on the 1300 sites recorded in the SMR (excluding defended settlements that would require a different form of assessment). The survey aimed to collate the existing information about such sites and to extend the record by field visits. The project was also designed to assess the condition and value of such sites and to identify the type and level of any threats to their survival. Analysis of the results, presented here, allows a broad comparative evaluation of all the monuments and of the level of threats. Recommendations are put forward here for general conservation management by prioritising monuments and areas, linked to appropriate action. Individual monument recommendations have been made in a separate report to Cadw: Welsh Historic Monuments.

2. ACKNOWLEDGEMENTS

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3. INTRODUCTION

The subject of early settlement has a long history of study in Gwynedd, largely because of the presence of so many well-preserved examples of such settlement that are valuable for research, for education and for tourism. These settlements are often not just isolated survivals but part of a wider relict landscape in which evidence of various periods of settlement and land use can be recognised. These areas of landscape constitute an archaeological and historic resource of national and probably international value.

In recognition of this value and of the fact that most field record observations of these monuments date from the 1950s or earlier, Cadw: Welsh Historic Monuments provided the resources for Gwynedd Archaeological Trust to carry out a survey of the whole of the county by means of three seasons of work. The initial inspiration for the project came from Richard Kelly of GAT who, in carrying out previous surveys (e.g. Kelly 1982; 1991), had demonstrated the vulnerability of early settlements in the face of threats from agricultural improvements. The earlier survey work carried out by GAT was carried out partly for the Royal Commission on Ancient and Historic Monuments (Wales) as part of the Uplands Initiative (Boyle, 1989) and as part of the Tir Cymen programme for the Countryside Council for Wales. Subsequent excavations, in advance of threats from agricultural improvement and grant-aided by Cadw also provided new understanding about the dating, construction and evolution of such settlements.

The hut circle settlements provide the most frequent and visible evidence of pre-medieval human activity in North West Wales. However, despite excavation of over fifty of such sites in the last century, public understanding of their true context and age is not widespread. Although over a hundred hut circle settlements are protected as Scheduled Ancient Monuments only two, at Ty Mawr , and Din Lligwy, both in Anglesey, are presented to the public. There is, therefore, scope to extend the level of public appreciation by dissemination of information and by presentation of more settlements with suitable access and with interpretation panels. This would help to provide a more balanced understanding for the origins of the Welsh landscape than is the case at present where the 'heritage resource' is dominated by castles, grand houses and 19th century industry. The existence of numerous and well-preserved examples of hut circle settlement also provides potential for research into such problems as why past land use and settlement was so extensive in areas which are now considered too agriculturally marginal for use. The extraordinary extent of the available evidence in North West Wales and the variability of settlement form and of house size which is encountered also provides potential for research into pre-medieval cultural groupings and social structure. This is especially relevant in Wales because of the documentary evidence provided by the Welsh Laws.

4. SCOPE OF THE STUDY AND DEFINITIONS

For the purposes of the present survey, the term 'hut circle settlement' has been taken to include all settlement of the prehistoric and Romano-British period apart from defended settlement. 'Hut circle settlement' is a term which has been chosen by the Royal Commission on Historic Monuments (England) in its Thesaurus of Archaeological Site Types (RCHM (E) 1992) to denominate early settlement where the principal identifying feature is the presence of round houses. These are most often visible as circular walls or banks which are commonly described as 'hut circles', hence the continued use of the term. The RCHM (E) Thesaurus is intended to act as a basis for the projected unification of Welsh archaeological databases in a project called Endex, The Extended National Database Index (RCAHM (W) 1995). Although the term 'hut circle settlement' has general acceptance its scope and limitations must be recognised. Settlements with round houses may often also include oval, sub-rectangular or rectangular structures but where the round houses are predominant the term 'hut circle settlement' remains appropriate. Furthermore, in a strict sense, the term should not be applied to all settlements of the period but be reserved for sites of that particular monument type exemplified by survival as stone walls. Other settlements where huts survive only as platforms or where the huts were of timber and no remains are visible apart from, for instance, an enclosure bank might be categorised differently. It must also be accepted that not all 'huts' are necessarily 'houses' and could be, for instance, work rooms, animal shelters etc and in some cases may not even have been roofed structures but walled yards, pens or fodder stacks etc.

The survey's aim was not to identify new examples of hut circle settlement but to visit and assess those sites already known. It began with the bonus that the area had already benefited from extensive and often good quality recording in the past. The results of survey work carried out by the RCAHM (W) and the Ordnance Survey have been incorporated in the Gwynedd Sites and Monuments Record and, although many records exist on paper or as maps, drawings or photographs, the main elements are now held in the form of a computerised database. The

regional SMR provides a resource for public referral, academic study or for management purposes. At present, detailed site or locally specific enquiries may be made through the maps or paper records. However, the SMR database does allow enquiries of a wider geographical or site-type nature, which, with the possibility of future incorporation of GIS, should permit much wider ranging and complex enquiries to be made at this level. It was this type of facility that allowed selection of all records that might pertain to hut circle settlement. Correspondingly, the incorporation of the survey results into the SMR will create potential for more extensive management use.

Within the area of Gwynedd the Snowdonia National Park and the National Trust also have responsibility for management of areas with archaeological remains. Both organisations have conducted field surveys and maintain databases of archaeological and historical remains, the details of which have been incorporated in the Gwynedd SMR. The content of the SMR is also added to regularly as a result of surveys carried out by GAT for Cadw, for the RCAHM(W) or as part of environmental assessments. Other information has been added as a result of records made by the Cadw Field monument wardens or information presented by members of the public or by study of aerial photographs. The continued acquisition of new information shows that there are still many archaeological features to be identified. In the uplands such features survive as earthworks and continue to be identified through the RCAHM (W) funded Uplands Survey. The coverage for the uplands, in terms of the settlement record, is substantial and likely to be quite representative and therefore provides a useful research tool. By contrast, in the lowlands, where the better soils might be expected to have attracted more intensive settlement, the archaeological record is relatively sparse because many monuments survive only as subsoil features. The evidence of aerial photography has illustrated the extent of this 'hidden' archaeological resource (Kelly 1991; Musson Undated) but there has not yet been any systematic analysis to provide a balanced view of early settlement patterns in North West Wales. Nevertheless, Gwynedd does have an extensive record of archaeological remains of hut circle settlement but one that is not easy to use for management purposes. The present survey therefore aimed to provide an overall assessment that could provide the basis for management.

5. THE ARCHAEOLOGICAL BACKGROUND TO HUT CIRCLE SETTLEMENT

Timber-built rectangular houses typified earlier Neolithic settlement throughout Britain but from about the beginning of the third millennium BC circular houses begin to appear in the archaeological record alongside rectangular structures (Burgess 1980, 44). The reason for the change in architectural style is not known but there are obvious parallels to be seen between buildings and burial monuments in different periods. There were large rectangular houses and ceremonial/funerary monuments in the earlier Neolithic and there were small circular houses and burial mounds and cairns in the earlier Bronze Age. This suggests that the changes might be the result of a change in emphasis in social structure from large communal activities to more individual small family units. Settlement in the second millennium BC and through to the Roman incursion was characterised by a predominance of circular houses, although rectangular structures are also often found which seem to be of non-domestic use such as granaries, animal shelters or work rooms. Undefended settlement in this period is characterised by small scattered groups containing 3-20 huts. Larger groupings do occur late in the first millennium BC but within defended enclosures. These 'hill forts' are, in some areas, so densely settled as to suggest the development of 'urban' communities, for example, Hod Hill, Dorset, with an estimated total of 200 houses (Cunliffe 1996, 364). Similar numbers have been recognised in North West Wales at Garn Boduan and Tre'r Ceiri (Hogg 1962) and Conwy Mountain (Griffiths and Hogg 1959).

The continued use of round houses throughout the first millennium BC is regarded as a peculiarity of Britain since rectangular houses were typical in continental Europe. After the Roman conquest of lowland Britain rectangular styles of domestic building soon became typical. At Ilchester, Somerset, wealthy Roman style villas lay close to contemporary settlements of native round houses (Branigan 1976, 135) and at Catsgore, near Ilchester, a late 1st century round house was replaced in the later 2nd century by two adjacent rectangular houses (Frere 1978, 305). At Stanwick, Northamptonshire, a villa lay adjacent to a possible 'estate bailiff's' house which began as a circular stone-built house which was later replaced by a small rectangular house, itself later replaced by a larger rectangular 'hall' (Neal 1987, 335).

The lowlands of South East Wales lay within the 'villa economy' zone of romanized Britain and contained a mixture of villas and native settlements. One of these native settlements, Whitton Lodge, Glamorgan, which has been fully excavated, provides a good example of the changes in accepted building style. The settlement began in the 1st century AD, or possibly earlier, as a group of round houses within a sub-rectangular enclosure. In the late 1st to early 2nd century AD it was modified by the addition of timber houses of square shape with rounded corners. By the late 2nd century AD these in turn were all replaced with stone rectangular houses (Jarrett and

Wrathmell 1981, 82-100). The greater part of Wales, however, like the highland zone elsewhere in Britain, lay outside the fully integrated villa economy zone. It was less affected by romanization and the native British tradition of circular dwellings continued to be typical up to the end of Roman occupation and, to an as yet unknown extent, probably beyond. It has been suggested that the social and economic disruption that occurred after the withdrawal of Roman protection and administration may have led to the abandonment of many settlements. However, the relative security of North West Wales from the encroachment of Saxon settlers may have allowed a continuation of native traditions. The organisation and taxation based economy along with the apparently improved standard of living which developed under Roman authority may have been utilised in the continuation of local native power bases. Indeed, Gwynedd emerged as a strong kingdom in the 5th and 6th centuries and there is some evidence for continuation of use of native hut circle settlements at Graeanog, near Caernarfon (Kelly 1998), Bush Farm, near Caernarfon (Longley and Johnstone forthcoming) and possibly at Ty Mawr, Holyhead as well as at fortified sites such as Degannwy, Conway and Dinas Emrys, Beddgelert (Edwards and Lane 1988). However, the lack of research in Wales focussed on this period means that the transition is not yet understood. The cessation of the use of pottery and coins and the paucity of diagnostic artefacts generally in the sub-Roman period means that settlement of that date is very difficult to identify. Another suggestion has been that the failure to identify such settlement may be because its houses were of impermanent construction and its boundaries defined by enclosure fences rather than walls or banks (Edwards 1997, 4). At Trostrey Castle, Monmouthshire, five oval post and wattle structures have been excavated which are associated with a calibrated radiocarbon date of 5th to 7th century AD illustrating the type of structure which may be typical of the period (Mein 1994). This fits in with evidence from Cornwall where more frequent occurrence of imported post-Roman artefacts allows better dating. There, occupation of some Romano-British enclosed settlements using oval huts has been shown at Grambla, Wendron, where occupation began in the 2nd century AD and continued to the 5th or 6th, and at Trethurgy, St Austell where occupation began in the 3rd century AD and continued to the 5th or 6th (Fowler 1976, 168). Oval huts fall within the definitions of the present survey and their occurrence will be discussed along with the general analysis of the results. In general, however, they have not been recognised as distinct house type in North Wales and the close similarity in distribution and location between hut circle settlement and broadly medieval 'long hut' and 'platform hut' settlement has been argued to indicate continuity of occupation (Crew 1984).

6. THE FORMS OF HUT CIRCLE SETTLEMENT, PROBLEMS OF DEFINITION AND IDENTIFICATION

The high degree of variation of hut circle settlements makes it is difficult, if not impossible, to arrive at a single morphological classification. In the Roman period there may have been some development of a market economy leading to specialised production and concentration of wealth but in general the economy associated with hut circle settlement would be one of subsistence. It can be expected then that within the settlement there will be represented, not just domestic dwellings but structures for a whole range of activities such as barns, byres and perhaps shelters for tasks such as weaving or metal working. These factors need to be taken into account when the numbers and variability of huts within settlements are considered.

In addition to the possible variety of functions of circular huts it must also be accepted that the archaeological record includes circular features that are not huts at all or do not fall within the defined period of hut circle settlement. There are, for instance, circular or sub-circular platforms that might have been made for the construction of timber huts (i.e. requiring no walls or banks). They might, on the other hand, in the prehistoric or Romano-British period, be working platforms or fodder stands (e.g. haystacks) or, in a later period, be sites for charcoal burning, for the huts of the charcoal burners themselves or be the working platforms of clog makers or other woodland industry workers (Edlin 1949). Similarly, medieval and post-medieval shepherding has left numerous features that are similar to hut circles. These are seasonal settlement features, 'beehive huts' and shepherds' shelters which very often were rebuilt on the site of genuine hut circles, utilising the remaining walls and available stone. There are also numerous shearing and washing pens and folds that re-use the sites of settlements or individual huts, partly because such sites are carefully chosen for shelter and availability of water in the first place. Fortunately such rebuilding is generally easily identifiable.

Other structures of more varied function can be less easy to distinguish. This is the case with the Bronze Age funerary monuments, ring cairns. These are sometimes clearly differentiated by the presence of a central stone-built cist or multiple concentric circles of orthostats which are clearly not walls or else lie in topographic positions such as exposed hill tops which are unlikely to have been domestic sites. Such differentiation is, however, not always straightforward and the ambiguity is emphasised by the frequent discovery in excavation of examples of burial monument, which have been built over or incorporate the remains of houses. In some cases it

seems certain that the burial monument is simply providing a structure which appears similar in form to a house for the interment but in others actual houses have been used for this purpose. In a number of cases ring cairns are found so close to settlements that re-use of house sites for burial or else curation of burial sites by the settlement's occupants seems likely.

It has been said that the last Welsh round houses did not disappear from Montgomery and Meirionnydd until about AD 1900 (Edlin 1949, 133) perhaps mirroring the situation in the 'Celtic' area of north-west Spain where circular shepherd's huts are still to be found. It may be that only the universal use of roofing slate finally put an end to the practicality of circular buildings. Other examples of circular structures of more recent date include lookouts, beacons, shooting butts, cock pits, and horse gins. Of these, shooting butts are the most likely to be mistaken for huts because of their simple structure and remote upland location. Other artificial and natural circular features include ponds, mining test pits, quarries, shell-holes, sinkholes and terraces created by soil slip. All these show that caution must be taken when seeking to classify such remains from their appearance alone.

7. THE ARCHITECTURE OF CIRCULAR HUTS

In Britain as a whole, the archaeological record shows that huts built entirely of timber framing were the most common and could take a wide variety of forms and of sizes. They vary between 6 and 12m diameter, some with internal post settings to support the roof, others in which the roof appears to have been entirely supported on the walls. The walls may have been of posts set in holes, of posts or planks set in a trench, or of stakes. Wall fill seems commonly to have been wattle coated in clay 'daub' although turf or clay 'cob' were also used. Where stone was readily available it was utilised for walls and this type of construction was typical for much of North Wales. However, there are still local variations, and in areas of lowland, such as much of Anglesey, where there was no easily available stone, cob or timber walls may have been preferred. In addition, the record may be biased because remains of such huts, being more fragile than stone, would be vulnerable to destruction and may no longer exist or be recognisable in the present landscape.

Construction of circular huts, and particularly those built entirely of timber, was expensive in terms of the amount of materials required and this is relevant to an understanding of the status of such dwellings and of the relationship between construction methods and architectural styles. Experimental replication of a large circular house excavated at Pimperne, Dorset, demonstrated this (Reynolds 1982). The house was c. 11m diameter and its construction required over 200 trees. All the upright timbers used were oak, most of which were about 40 years old and the largest of these, used for the porch, were about 60 years old. All had to be straight for at least 3m and this suggests that they must have come from managed woodland. Large amounts of small wood were also needed for the stakes and wattles of roof and walls, also probably from managed coppice woodland. The roof required 5 tonnes of thatching straw. Another house that was replicated in the same experiment, the Conderton House, was more like the typical circular hut found in North West Wales. This was only 6m diameter (internally) with walls of stone *c.* 0.90m wide and 1.0m high, yet 50 tonnes of stone were needed. The roof was supported entirely on these walls and the house therefore required considerably less timber, for its size, than the Pimperne house. Nevertheless, some 2 tonnes of timber were needed comprising 20 straight poles over 3m in length as well as wattles, so some availability of managed woodland products was likely. The thatching required 1 tonne of hay under-thatch and 2 tonnes of straw.

Consideration of the above experimental evidence suggests that use of the common descriptive term of 'hut' for round houses is inappropriate, implying that such houses were, by definition, 'primitive'. The materials and the techniques of construction of round houses could be both demanding and sophisticated. Moreover, in use they provide a large amount of usable floor space and, as proved by experimental reconstructions, are very stable and long lasting. As such their ubiquity in Britain may have been an adaptive response to the maritime climate, most evident in the highland zone of the west and north.

8. PREVIOUS STUDY OF HUT CIRCLE SETTLEMENT IN WALES

Early antiquaries took a great interest in monuments which were either grand in scale or which hinted at ancient mysteries of religion and burial. Thus, hillforts, cromlechs, 'druid's circles', standing stones and burial mounds were noted, drawn and discussed at length. Excavation was confined to the removal of burial goods from barrows that did little to further the understanding of prehistory. The humble remains of settlement and farming were neglected. The comments of Henry Rowlands, for instance, in the early eighteenth century, when discussing early monuments on Anglesey describes Caer Leb, a rectangular enclosed settlement of Romano-

British date, as ...

'...a rais'd Square of about Fifty Paces over, doubly entrench'd, and moated about...The innermost Banks of the Entrenchment are yet of some height, the Angles a little elevated and rounded: The Area or green Plot within the Banks are very even and level, showing as if it has been the Ground-floor of an erected wooden Palace, having near the middle of it the Foundation of a round Tower of stone or stair-case...' .

Describing other settlements he says...

'Near this last mentioned Place, on a piece of Ground call'd Trevdury, there are a great many circular Stone Foundations on the side of the River Breint: And also on another spot of Ground near by, call'd Tan ben y Cevn, there are two large Quadrangles...in each of these Squares there are several very large circular Foundations formerly of great Strength and Capacity, far surpassing the ordinary British Ruins, which is not unlikely to be the Remains of some extraordinary British building in that Township. I give only their Form but am not exact in their situation, which is of no great Moment.' (Rowlands 1723, 88 and Fig. 1, top).

Research of a more academic nature began about the middle of the 19th century inspired by the excavations and theories of Danish, German and French archaeologists. The first extensive excavations in Britain of a settlement took place in England at Standlake, Oxfordshire in 1857-8 (Cunliffe 1991, 2). In North Wales, there were excavations in the 1860's on Anglesey at Din Lligwy (Williams, 1867), Caer Leb, (Pritchard, 1866) and Ty Mawr (Stanley, 1867) amongst others. In Caernarfonshire, near to Bangor, there was an innovative field survey of two parishes (Hughes, 1866) and excavation of a settlement at Coed Uchaf (Elias, 1872). Stanley's published excavation plans approach the standards of those of present day work as exemplified by the plan of the settlement at Porth Dafarch, Anglesey (Fig. 1, bottom). Such examples show that where the archaeological work of the time was vague and unscientific it was only because of a lack of application since the ideas and the technology were available, given the monumental architectural and engineering works that were being carried out in the same period.

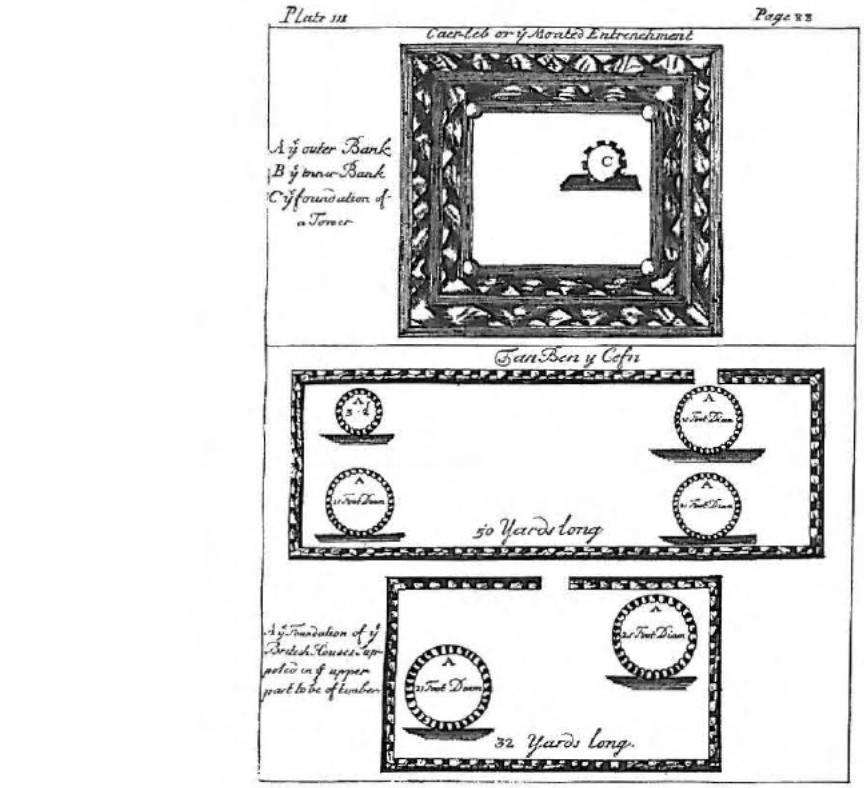
However, within Britain as a whole, the most significant advances in archaeological recording and interpretation were made by General A.H.L.F. Pitt-Rivers who, like Stanley, had large estates with many monuments available for study, together with the resources to excavate, illustrate and publish the results in a full and meticulous manner. He carried out a series of excavations of settlements and hillforts between 1877-90 which were then published in reports which included detailed plans, drawings of finds as well as emphasising the importance of stratigraphy in the recording of 'sections' of ditches and ramparts. These set the standard for other workers and were followed in excavations by his assistant, H. St. George Gray in Somerset and in survey by the Royal Commission on Historic Monuments. By the beginning of the 20th century, archaeological methods were reasonably well established and in North Wales a series of the more impressive classic hut circle settlements were excavated. These included the well known enclosed settlement of Din Lligwy, Ynys Mon, (Baynes 1908), the circular settlement of Ceunant Egryn, Meirionnydd, (Crawford, 1919) and Hafoty Wern-las and Coed-y-Brain, Rhostryfan, Caernarfonshire, (Williams 1923) and others followed.

The Royal Commission began its survey work in North West Wales with Meirionnydd (RCAHM 1921). This was simply an inventory and did not try to draw together or elicit meaning from the results and had little appreciation of the considerable archaeological field work which had taken place previously elsewhere. Early settlement was covered and almost dismissed by the following brief comment...

'Of the prehistoric monuments of the county by far the most numerous are the ruins of the circular enclosures which are known, as well from traditional report as from actual scientific exploration in the various parts of Britain, to have been the dwellings of a primitive people. There can be little doubt that many of the Merionethshire examples are genuine remains of early man, but it is equally certain that a considerable proportion are not of the antiquity with which they are generally credited. A number of these in the parishes of Llanbedr and Llanddwywe were visited in late autumn when many were found to be practically waterlogged, and in their then condition, were altogether beyond possibility of occupation as dwellings for however short a time', (RCAHM 1921, xvi-xvii).

The quality of the survey work, however, was quite high. The illustrations, though lacking in interpretation and carried out with an artistic rather than a technical expertise, achieved a detailed photographic style in some ways more descriptive than later work.

The survey of Anglesey (RCAHM 1937) however, did include discussion of the early settlement sites and



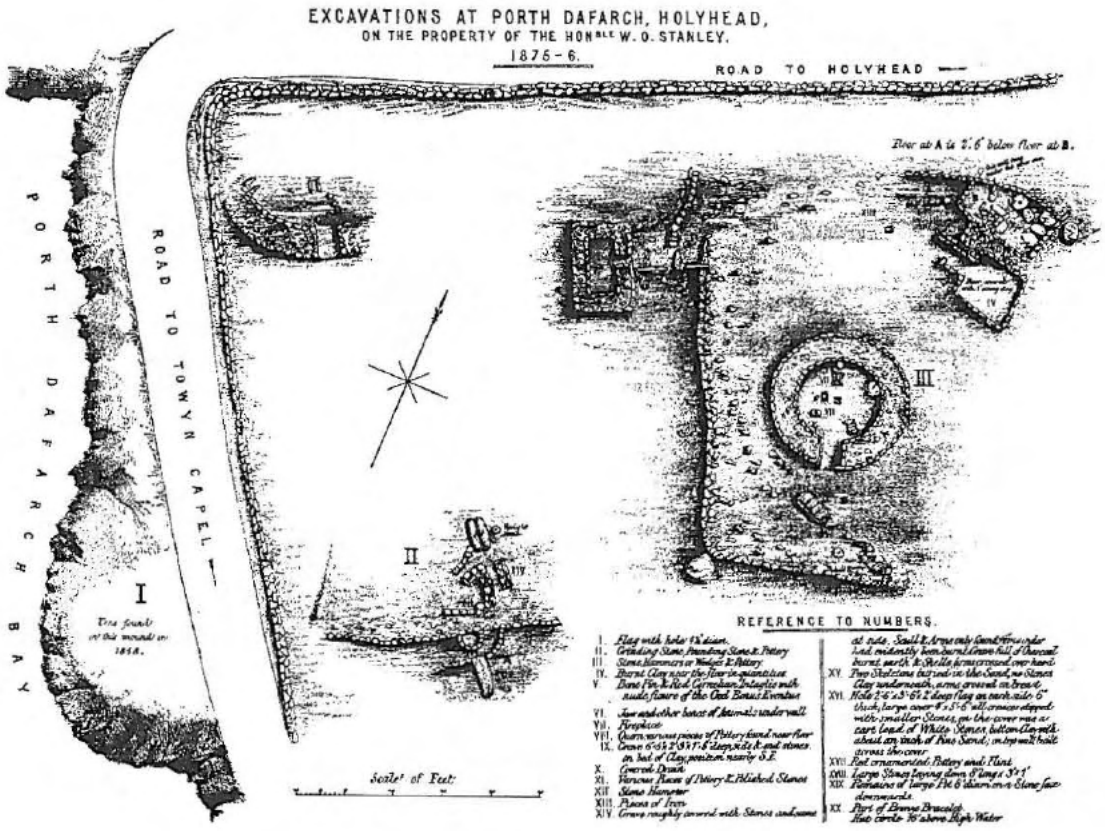


Fig. 1 Top. Early plans of hut circle settlements in Anglesey (Rowlands, 1723)
Bottom. Porth Dafarch, Holy Island, Anglesey. Excavations 1875-6 (Stanley, 1876)

suggested a division into three classes:

1 - Walled enclosures of angular or sub-circular form (Din Lligwy being the type-site).
2 - Unenclosed settlements of scattered round huts.
3 - Enclosed groups of generally rectangular form.

Dating of these various forms was problematic since previous finds from all settlement types showed only occupation within the Romano-British period.

The Royal Commission commenced work in Caernarfonshire in the 1940's which culminated in three volumes by area (1956, 1960 and 1964), of which the last included a detailed analysis of early settlement types based on the large number, about 400, of such sites that had been visited. The analysis built on a scheme of classification proposed by Gresham and Hemp (1944) and Griffith (1951) and culminated in a classification into four broad classes of settlement based partly on form and partly on presence or absence of different types of associated fields or enclosures, (RCAHM 1964, lxxxvii-cvi) as follows:

I - Huts not associated with fields or extensive enclosures.
II - Huts associated with enclosures (meaning systems of small curvilinear fields or paddocks)
III - Concentric circles.
IV - Huts associated with terraced fields.

These broad classes had various sub-divisions to account for the great variety of form, particularly of Type IV for which there were four sub-divisions. This scheme was soundly based on a full review of all the evidence but without the backing of research excavation could say little about the function or dating of the variety of settlement:

'The only securely dated evidence comes from the Enclosed Homesteads associated with terraced fields, therefore.... The pattern of settlement during the Bronze Age is uncertain. During the Roman period or during the preceding Iron Age, a large proportion of the population seems to have dwelt in hillforts, the remainder being engaged in farming, the principal change being from pastoral activity during the earlier periods to a considerable amount of agriculture at least during the latter part of the Roman period, accompanied by a reduction in the number of occupied hillforts, the settlements were almost exclusively isolated farms.'(RCAHM 1964 civ-cv).

The Caernarvonshire Inventory was followed by a private survey of Meirionnydd, following similar methods, (Bowen and Gresham 1967). The early settlement part of the latter survey, by Gresham, was based on a considerable amount of new fieldwork and recognising the lack of excavated evidence to back up any sophisticated site classification opted for a simple threefold division of settlements for the purpose of description and publication. These groupings were:

1. Unenclosed hut groups
2. Enclosed homesteads
3. Concentric circles and circular enclosures.

In Wales as a whole, work on settlements has concentrated on defended sites (mainly hill forts) although undefended settlements are widely present in Carmarthenshire and Pembrokeshire and there have been general surveys of such settlements in Glamorgan (RCAHM (W) 1976) and Carmarthenshire (Williams 1978, 1979, 1988). South Wales is typified by multiple enclosure sites and Pembrokeshire by compact enclosed settlements called 'raths', similar to the 'rounds' of similar date in Cornwall and with some parallels in North West Wales. Sites in the well-ploughed lowlands of the Welsh borders are known almost entirely from aerial photographs, which have located such sites as Sharpstones Hill, Shropshire, and Collfryn, Powys. Sharpstones Hill consisted of at least one circular timber-built house within a sub-rectangular double-ditched enclosure and occupied in the first millennium BC and probably into the Romano-British period (Barker *et al* 1991). Collfryn began as an unenclosed settlement of several timber-built circular huts later enclosed by triple ditches of sub-rectangular plan and occupied for several centuries into the Romano-British period (Britnell 1989).

In North West Wales attempts have been made to carry out sophisticated morphological analyses of the wealth of available information on the enclosed hut circle settlements (Smith 1974 and 1977). The results provided an alternative view of the range of types but one that was difficult to take further without satisfactory dating evidence from excavation. Gresham's simple scheme (Bowen and Gresham 1967) was therefore followed closely by Kelly (1982) in his survey of Ardudwy with the addition of the category of 'single hut circles',

relatively isolated examples that could not easily be regarded as part of a group.

Since then a number of excavations have been carried out on hut circle settlements which have thrown new light on the subject. The difficulties encountered by the earlier attempts at classification have been explained in two ways: Firstly, there was an expectation that a chronological range of types would be displayed in the extant, stone built remains. Secondly, where excavation has taken place, it has concentrated almost entirely on the more impressive enclosed settlements. Moreover, excavation has mainly limited itself to uncovering structures and to exposing the latest phase of occupation. It has not continued by removing structures to look for possible evidence of earlier, underlying phases of occupation.

Richard Kelly's work at the circular enclosure settlements of Moel y Gerddi and Erw Wen, Harlech, Meirionnydd, (Kelly 1988), showed that the stone-built settlements were occupied in the later first millennium BC but that these were preceded by timber structures occupied as early as the middle of the first millennium BC. It has therefore been surmised that the extant evidence of stone-built hut circle settlement is misleading and that a decline in available timber due to clearance may have resulted in a widespread change in construction techniques. Kelly has summarised the evidence showing that a number of stone built settlements were probably preceded by timber (Kelly 1988, 144-9). Other research excavation by Peter Crew at Crawcwellt West (1989), an unenclosed settlement of RCAHM type II, has shown occupation beginning in the second half of the first millennium BC. Such site types, previously unexplored, had been thought to possibly represent the earlier prehistoric settlement so far missing from the record.

Johnstone (1989) has compiled a gazetteer of records of all excavated hut circle settlements in Gwynedd. This identified 55 excavated sites of which 21 have either datable finds (pottery or coins) or radiocarbon dates. Most of these settlements fall within the Romano-British period or the Late Iron Age to Romano-British period with only three, Moel y Gerddi, Erw Wen and Crawcwellt entirely predating the Romano-British period (see above). The overwhelming predominance of settlements of the Romano-British period is to some extent biased because previous excavation has not looked at a representative sample of site types but has concentrated on the larger and better preserved settlement sites and because it is only in this period that easily datable finds of pottery and coins are found. The types and pattern of earlier prehistoric settlement in North West Wales remains largely unknown. The complete absence of identified examples of settlement of the second millennium BC is all the more marked when compared with the widespread distribution of contemporary funerary monuments and of chance finds of metalwork. Recent excavation work, evaluating crop marks seen on aerial photographs, has identified a lowland settlement of the Middle Bronze Age consisting of a two round houses within a double concentric ring work at Meyllteyrn Uchaf, Caernarfonshire (Ward forthcoming). In North East Wales excavation at Pentre Cwm Uchaf, Denbighshire (Manley 1990) has revealed a scattered upland settlement of Late Bronze Age date, suggesting that similar types of settlement in the North West may eventually be shown to be of the same period. Further research is needed, guided towards particular priorities and research objectives such as those put forward for England (English Heritage 1991) and requiring the type of information that can only come from excavation accompanied by environmental work. Broad changes in settlement distribution cannot be understood in terms of the archaeological information of artefacts or even scientific dating alone but must be viewed against a background environmental change.

9. THE TYPES AND DISTRIBUTION OF SETTLEMENT

For a full description of the recording classes and definitions used in the survey see Appendix 2, below.

a. Classification

It was necessary to assign a type to each settlement in order to allow analysis of the results. However, the classification described below, while it seems comprehensive and effective in application, cannot claim any greater validity than previous classifications. Its main objective was to allow comparison with earlier groupings and was based on a simple professional judgement of form. An ideal analysis might wish to use only quantifiable criteria such as numbers of huts, measured proximity of huts or area enclosed. This would have involved a time input beyond the limits of the present project. It had to be accepted that, for instance, the division between nucleated (type 4.4) and scattered settlement must be set arbitrarily and that there are many single huts that could be defined as parts of a dispersed settlement or as outliers to enclosed, nucleated or scattered groups recorded elsewhere. These have been accounted for to some extent in assigning the sub-types as set out below:

1. Single hut
    1.1 Isolated
    1.2 Possibly part of a widely dispersed settlement
    1.3 Probable outlier to a scattered group (type 2)
    1.4 Probable outlier to a nucleated/enclosed group (type 4)
    1.5 Probable outlier to a circular/concentric settlement (type 3)

2. Scattered hut settlement
    2.1 Loosely grouped
    2.2 Dispersed (e.g. Fig. 2, top)
    2.3 Outlier to nucleated/enclosed group

3. Circular/Concentric
    3.1 Circular
    3.2 Concentric (e.g. Fig. 2, bottom)

4. Nucleated/Enclosed
    4.1 Rectangular/polygonal enclosure (e.g. Fig. 3, top)
    4.2 Curvilinear enclosure (e.g. Fig. 3, bottom)
    4.3 Set within 'yards' rather than deliberate enclosure (e.g. Fig. 4, top)
    4.4 Unenclosed but nucleated (e.g. Fig. 4, bottom)
    4.5 Incomplete/eroded/unclassifiable

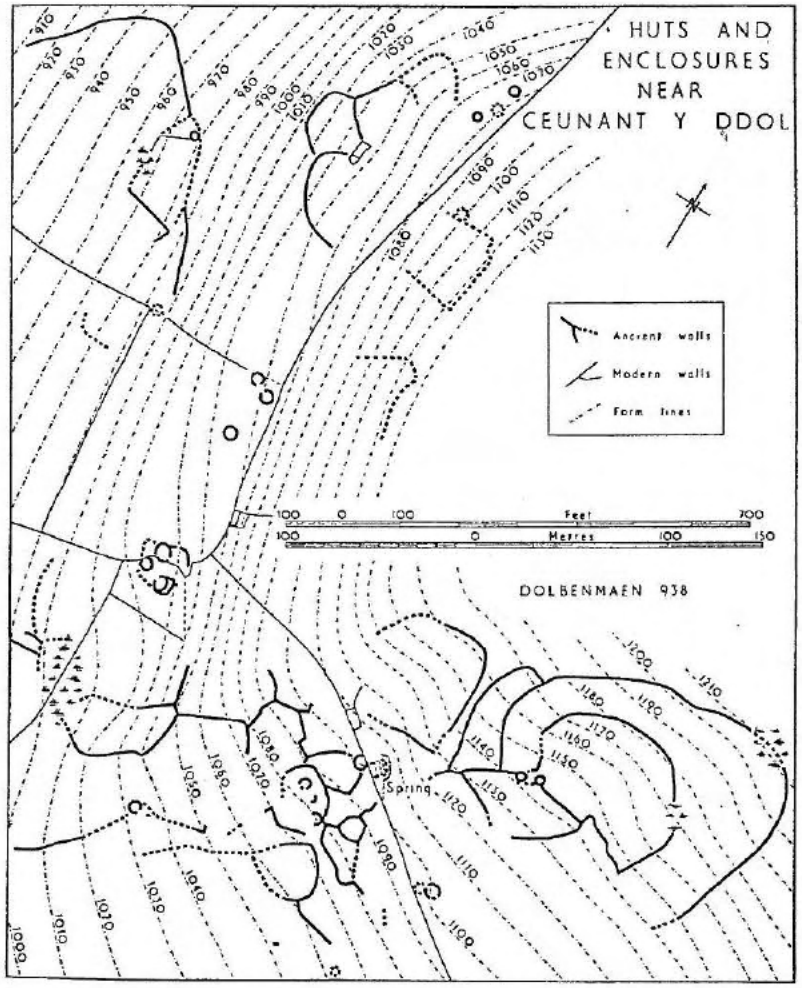
5. Unclassified

    Sub-types:
    5.1 Rectilinear
    5.2 Circular/sub-circular

b. General geographic distribution

Using the classes listed above and the other descriptive attributes listed in Appendix 2 it is possible to quantify the occurrence of the different settlement types as a first step towards investigating their distribution. Fig. 5 shows the overall distribution of all known hut circle settlement while Figs 6-9 compare the distribution of the four main settlement types. These distributions must be set against the general topographic background which is extremely varied and has a marked effect on local climatic conditions and soils and, as a result, a strong influence on land-use and settlement. It can be seen that the distribution broadly follows the western fringes of the uplands. The relative absence of settlement in the higher uplands, on clearly less favourable land, is to be expected but, in viewing the results, it must be accepted that the relative scarcity of settlement in the lower land of Llyn and Ynys Mon has a different origin. In these, which comprise the more productive agricultural areas, early settlements may have been relatively numerous, but arable cultivation and clearing of stone and obstructions from hay meadows and pasture has led to a lower survival rate for early features.

The density of occurrence of settlement types in the six administrative districts, as they existed when the survey began, prior to the creation of the unitary authorities, provides a useful comparison since statistics are available about the present population and agriculture of these districts. In addition, the districts are varying in character: Arfon and Aberconwy both contain a large proportion of upland, Meirionnydd contains much inland plateau while Ynys Mon and Dwyfor consist largely of lowland plateau. The figures for occurrence of hut circle settlement (Table 1) shows a wide variation from an average of about 3 per 5km by 5km square (2,500 ha) in Ynys Mon to about 13 in Arfon. Again, this must to some extent reflect variable survival rates according to the land use of different areas since, of the districts, Ynys Mon has the highest proportion of arable land, 16%, while Arfon has only 6%. Obviously, upstanding archaeological features will have a lower chance of survival in an arable landscape. However, there are other factors at work since Meirionnydd has only 3% arable but still has a much lower density of recorded sites than Arfon.



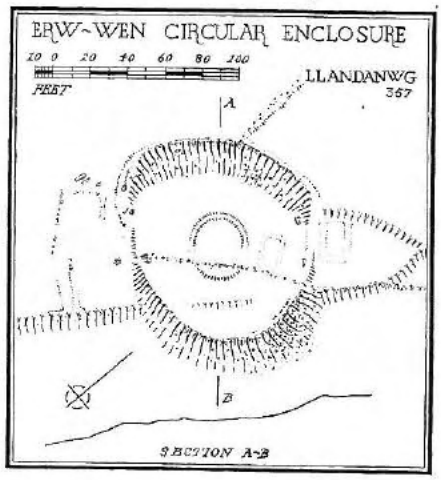
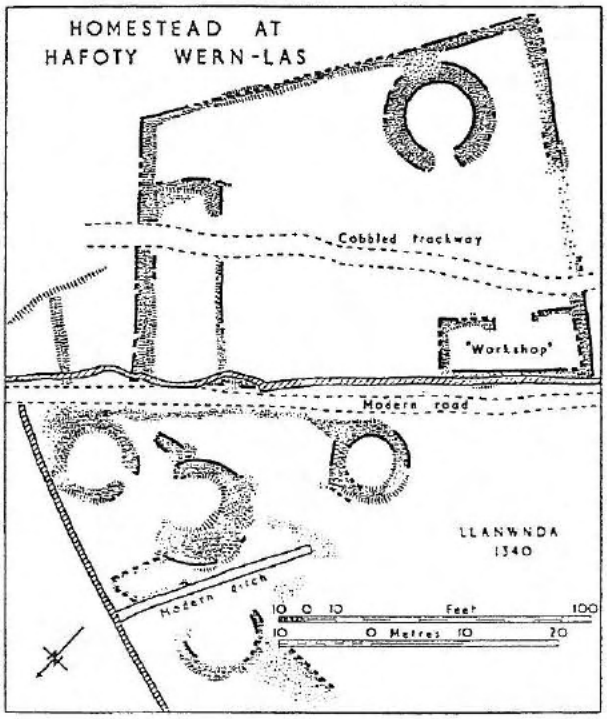


Fig. 2 Top. Example of scattered settlement (Type 2)

Bottom . Example of circular/concentric settlement (Type 3)



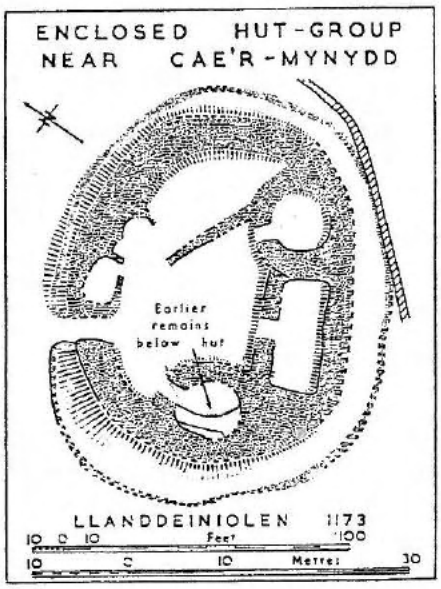
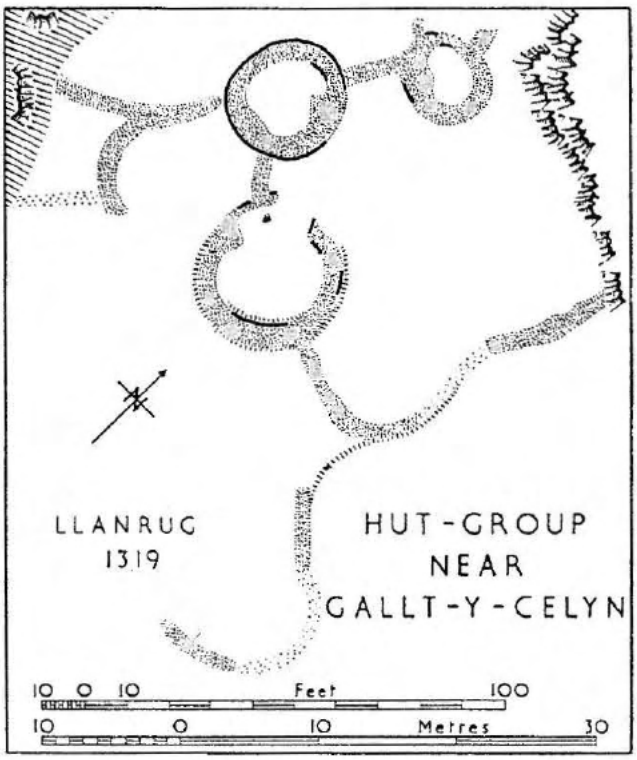


Fig. 3 Top. Example of nucleated/enclosed settlement.
(Type 4.1, rectangular/polygonal enclosure)

Bottom. Example of nucleated/enclosed settlement.
(Type 4.2, curvilinear enclosure)



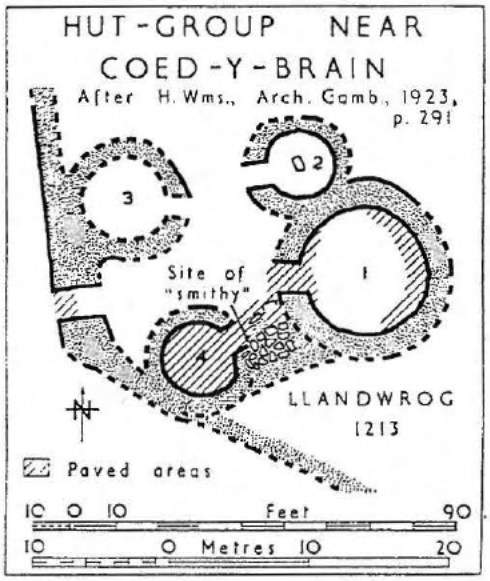


Fig. 4 Top. Example of nucleated/enclosed settlement.
(Type 4.3, set within yards rather than deliberate enclosure)

Bottom. Example of nucleated/enclosed settlement.
(Type 4.4, unenclosed but nucleated)

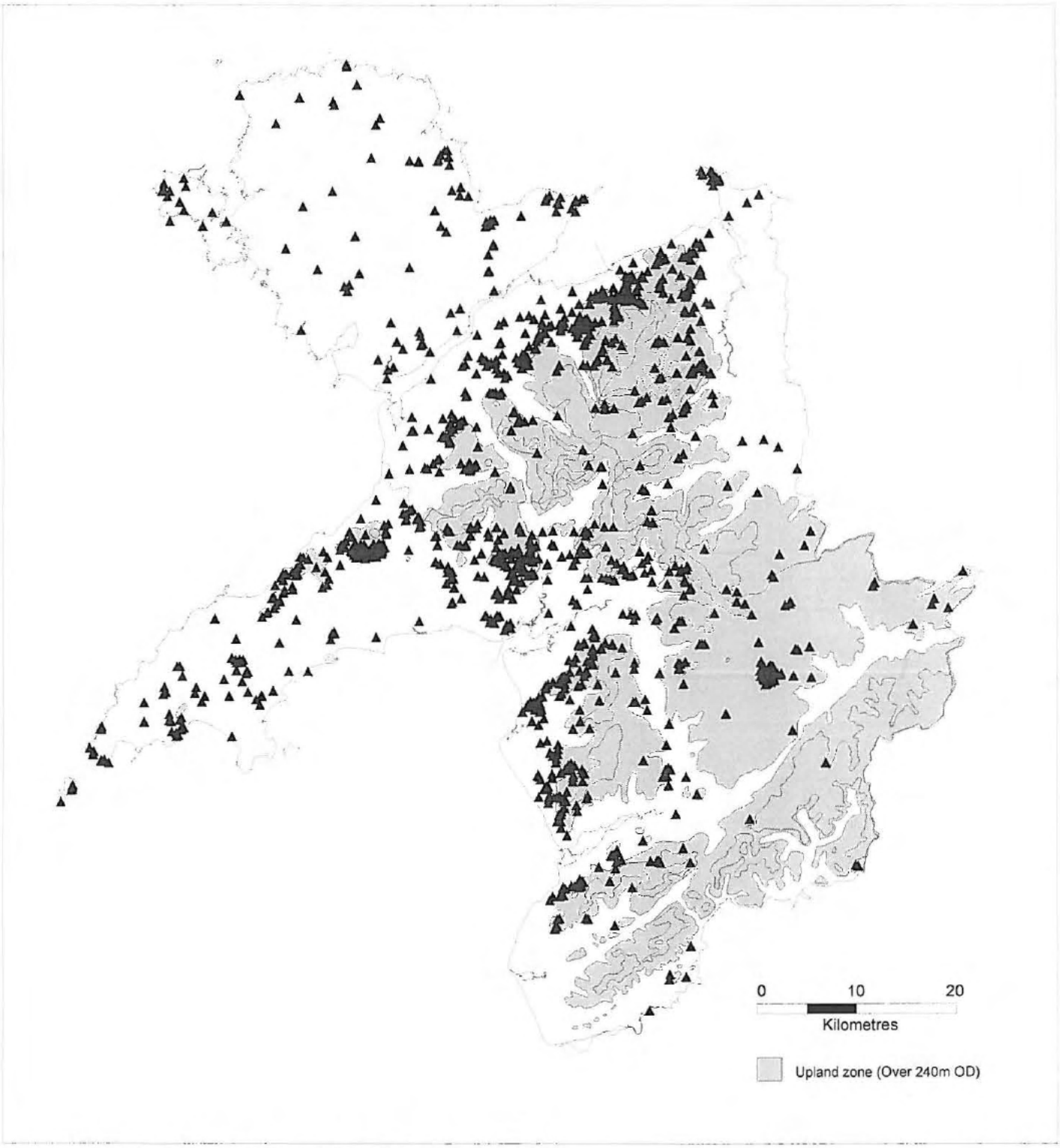


Fig.5 Distribution of all recorded hut circle settlements in Gwynedd

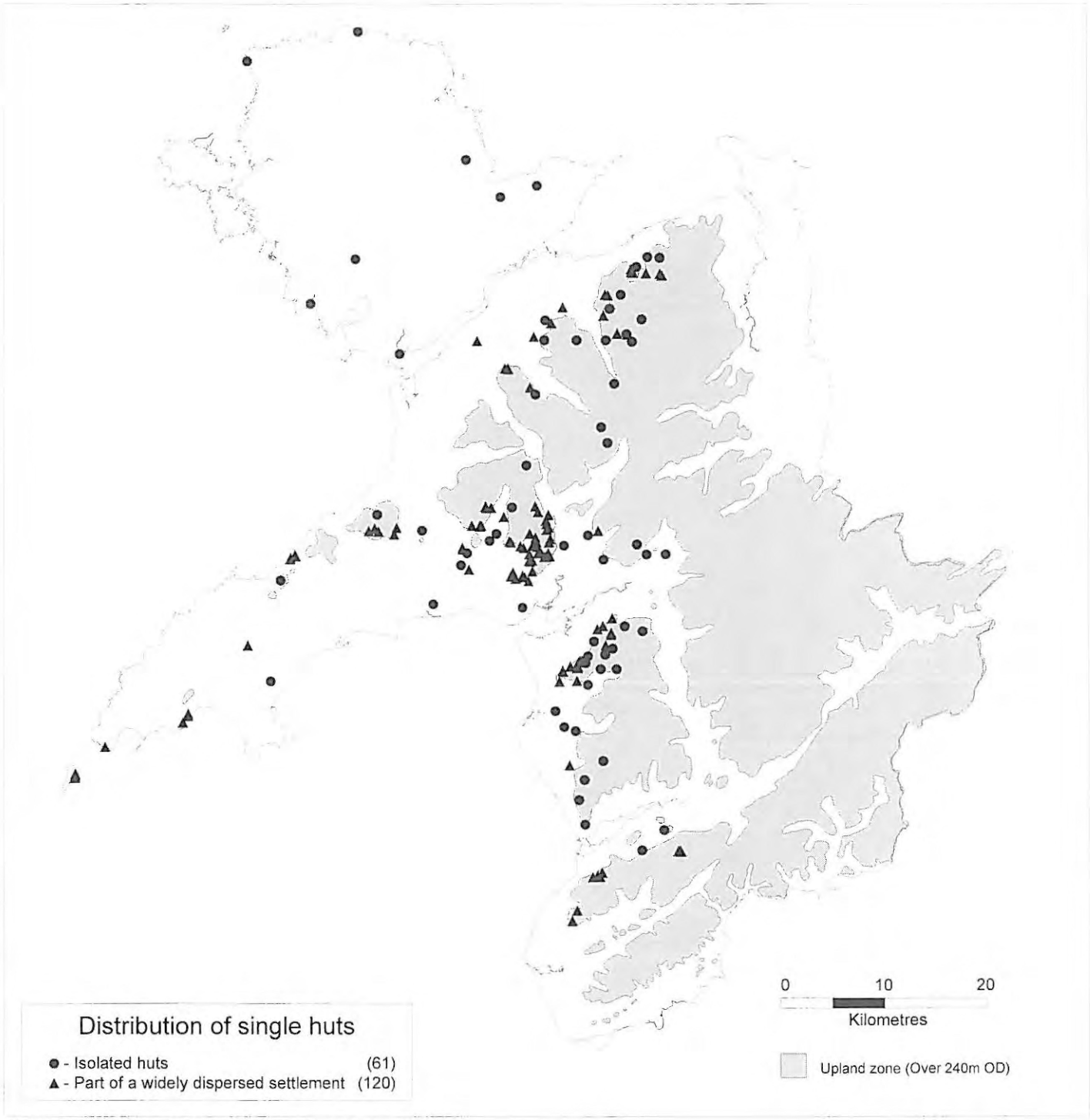


Fig.6 Distribution of Type 1: Single hut circle settlement

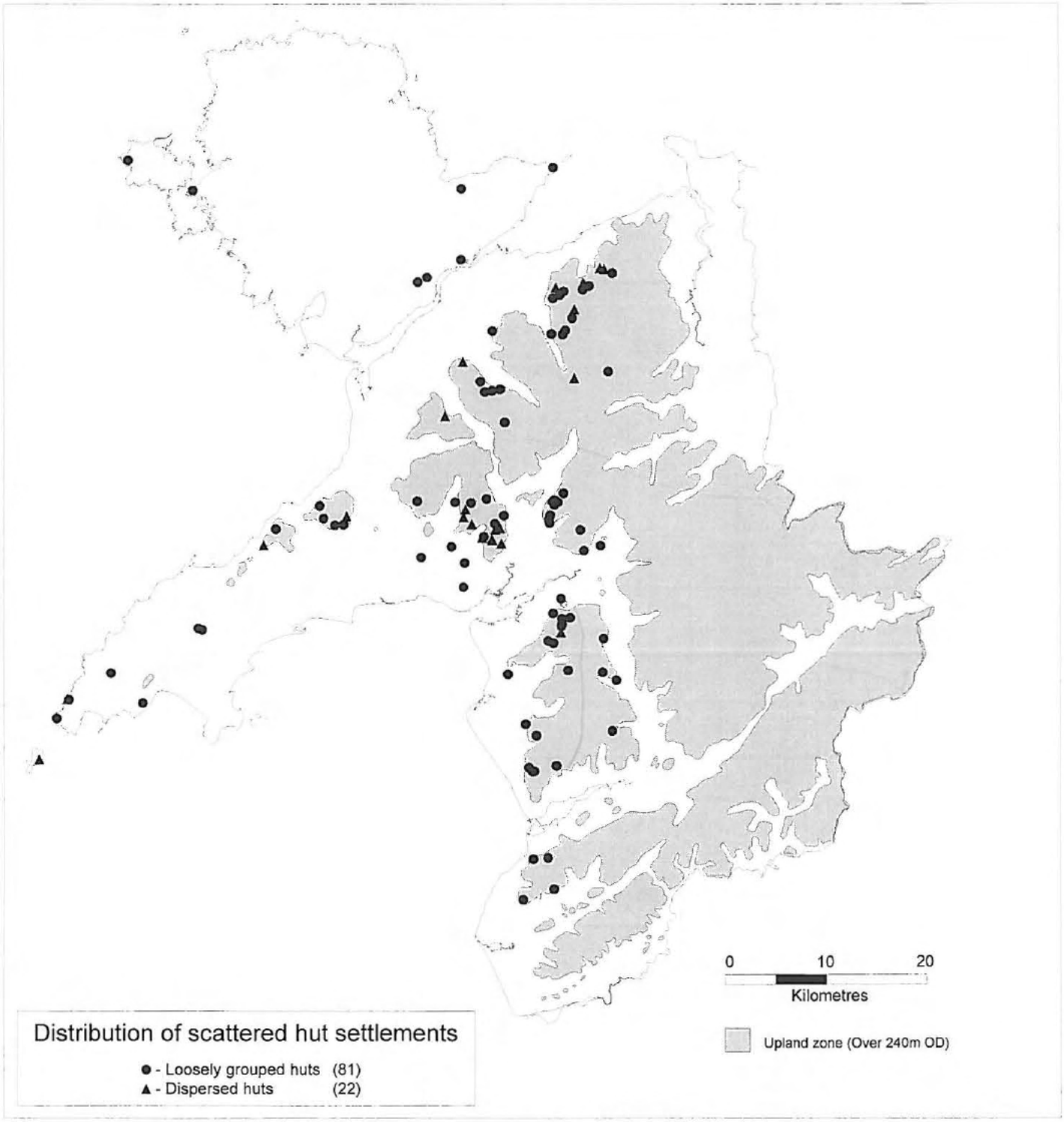


Fig. 7 Distribution of Type 2: Scattered hut circle settlement

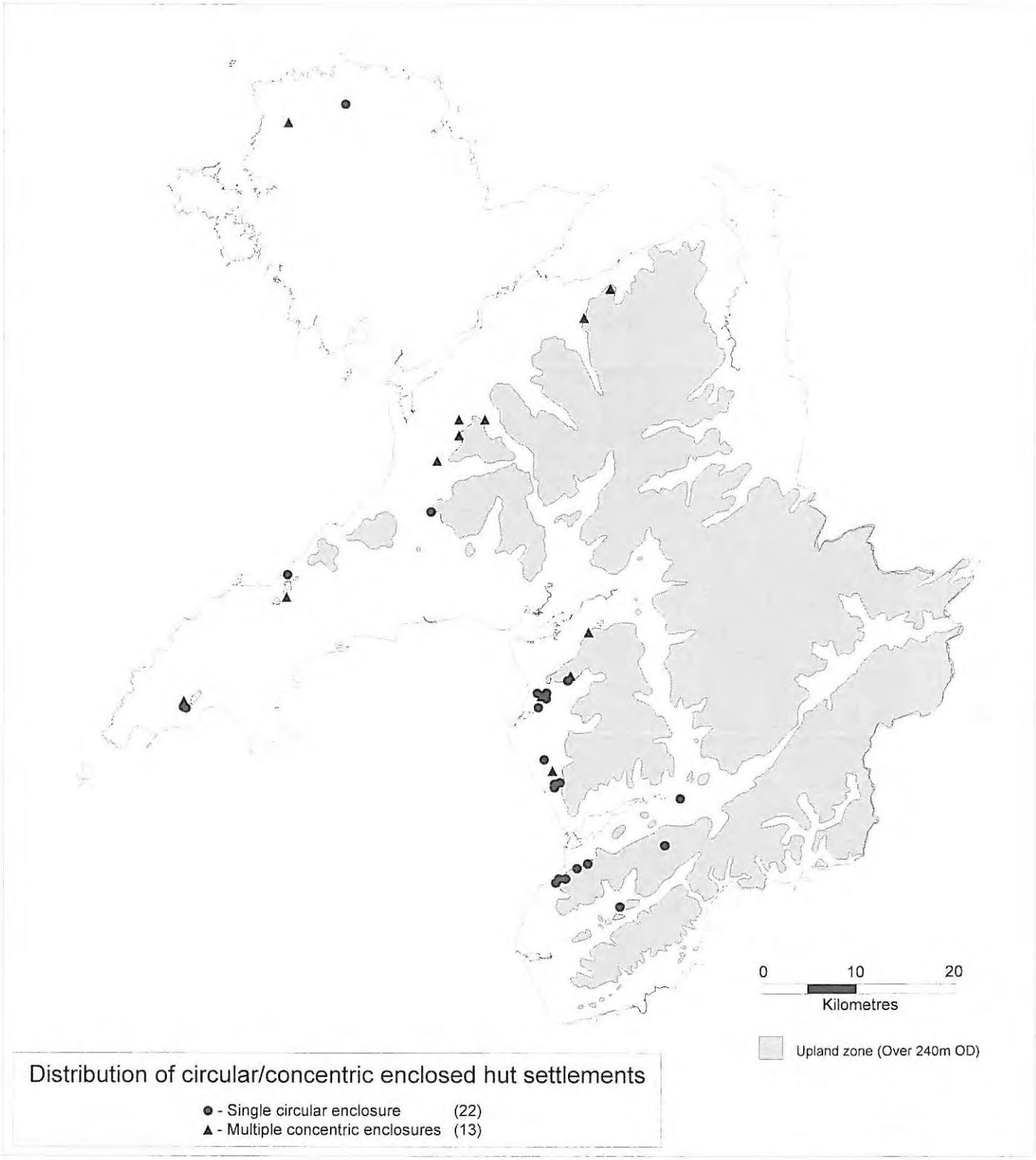


Fig. 8 Distribution of Type 3: Circular/concentric enclosed hut circle settlement

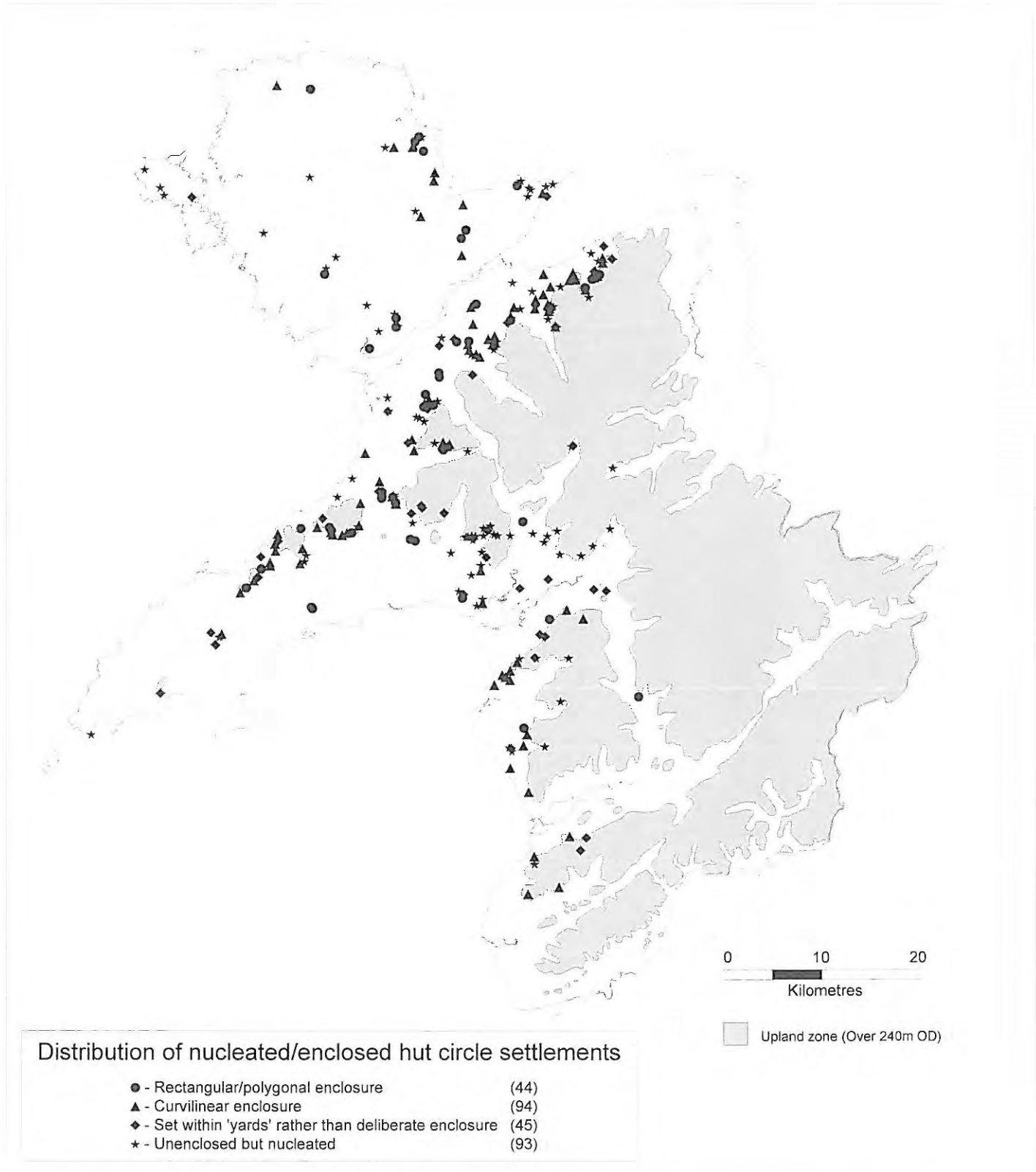


Fig. 9 Distribution of Type 4: Nucleated/enclosed hut circle settlement

Table 1 Average density of occurrence of different hut circle settlement types per 5km x 5km (2,500ha) grid square by geographical area

	Aberconwy	Arfon	Dwyfor	Meirionnydd	Ynys Mon	Total
Land Area in hectares	60,000	41,000	62,000	152,000	72,000	387,000
No. of 2,500 ha grids	24.0	16.4	24.8	60.8	28.8	154.8
Percentage of arable	6.3	5.9	12.0	2.6	16.2	7.5
Single hut	1.8	4.0	3.8	1.6	0.3	2.0
Scattered group	0.7	1.2	2.3	1.0	0.1	1.0
Circular/concentric	0.1	0.4	0.1	0.0	0.0	0.1
Nucleated/enclosed	1.5	6.6	4.0	1.0	2.3	2.4
Unclassified	0.2	0.5	0.6	0.4	0.3	0.4
All hut sites	4.3	12.7	10.8	4.1	3.1	5.9

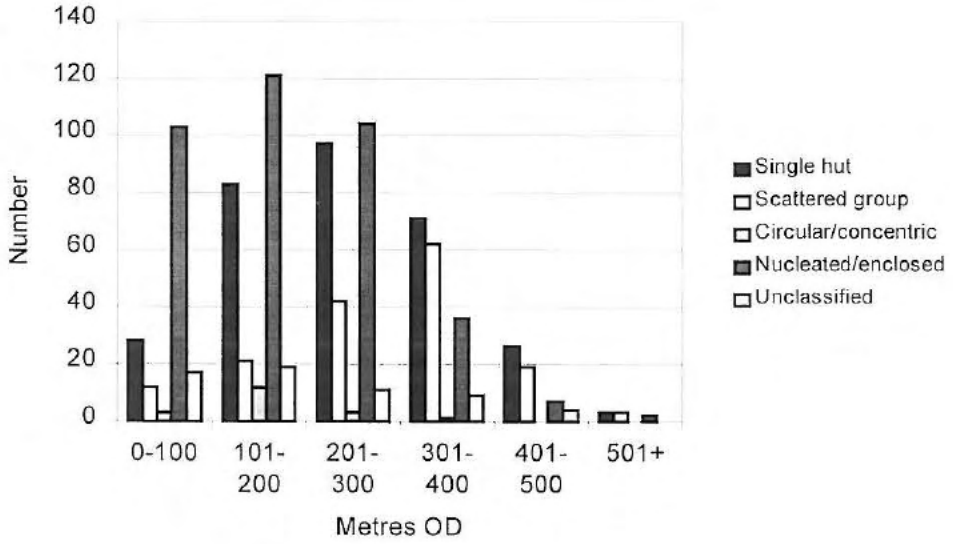
Differential levels of recorded activity also make it difficult to obtain a true picture of settlement distribution. It might be expected, for instance, that the better quality land of Ynys Mon would be more densely settled than that of Arfon. Many as yet unidentified settlement sites may have survived as sub-soil features in Ynys Mon, an area of which most has been used for arable in the past. The situation is likely to be similar in Dwyfor or at least in the major lowland part of it, consisting of the Llyn peninsula. Aerial survey might correct the picture and a start has been made in Dwyfor, by the Llyn Cropmarks Project (Ward and Kelly, forthcoming). This has located several circular enclosures that bear comparison with Late Bronze Age enclosures in England such as at Springfield and Mucking in Essex (Buckley and Hedges 1987). One, Meyllteyrn Uchaf, which was investigated by trial excavation, proved to be of Middle Bronze Age date. Aerial survey elsewhere, particularly in Ynys Mon, in conjunction with surface collection and survey as part of a systematic, sampling strategy might be expected to allow an estimate of the actual density of past settlement.

Caernarfonshire has been particularly well covered by the Royal Commission surveys. Recent surveys in Meirionnydd, such as the Ardudwy Survey (Kelly 1982) and the Trawscoed Survey (Muckle 1994) have discovered comparable numbers of hut circle and medieval settlement sites to those in Caernarfonshire. While variation in the actual level of recording can bias the apparent distribution it must be accepted that in the period represented by hut circle settlement which, on present evidence, relates chiefly to the late first millennium BC through the Roman period, population was concentrated largely on the west facing fringes of the uplands and, to an extent which cannot yet be properly estimated, on the lowlands.

c. Altitude

Much of the variation in the distribution of early settlement can be explained by altitude. Rainfall, temperature and soil development are all strongly influenced by altitude and these in turn influence land use. The distribution of recorded huts/settlements by altitude band is shown in Fig. 10. Again, differential survival affects the results since the lowest altitude band, which includes Ynys Mon, will include the majority of arable land, and so will be subject to most deterioration through clearance and ploughing. If sites in this lowest altitude band are ignored then a significant difference can be seen in the altitudinal location of different settlement types. The modal altitude for nucleated/enclosed settlement and for circular/concentric huts is 100-200m OD while for single huts it is 200-300m OD and for scattered groups it is 300-400m OD. These differences are readily seen in the geographical distribution as illustrated in Figs 6-9. These differences may demonstrate an element of economic specialism in the settlement types, which will be discussed further below.

Fig. 10 Distribution of settlements by altitude



d. Topographic location

Topographic location (Fig. 11) is related to altitude and to slope and aspect, but has further implications. For instance, hill/ridge top sites may be chosen to provide visibility and this could include defensive motives. The survey specifically excluded defensive sites and, in fact, very few settlements (11%) had a hill or ridge top location. The largest proportion (41%) occupied hill slopes. Such locations often utilised natural terraces but also often entailed considerable extra work in cutting hut floors or even whole enclosures into the slope. The main benefit must have been in allowing drainage. The number of settlements recorded in lowland plateau and coastal fringes must be affected by poorer survival in these areas of better farming land and by more intensive farming activity. The different types of settlement show some variation in topographic location. A contrast can be seen between the single huts and scattered settlements that are to be found most frequently on hill-slope locations, while nucleated/enclosed settlements are to be found more frequently in lowland plateau areas. These differences parallel those noted in regard to altitude.

Fig. 11 Distribution of settlements by topographic location

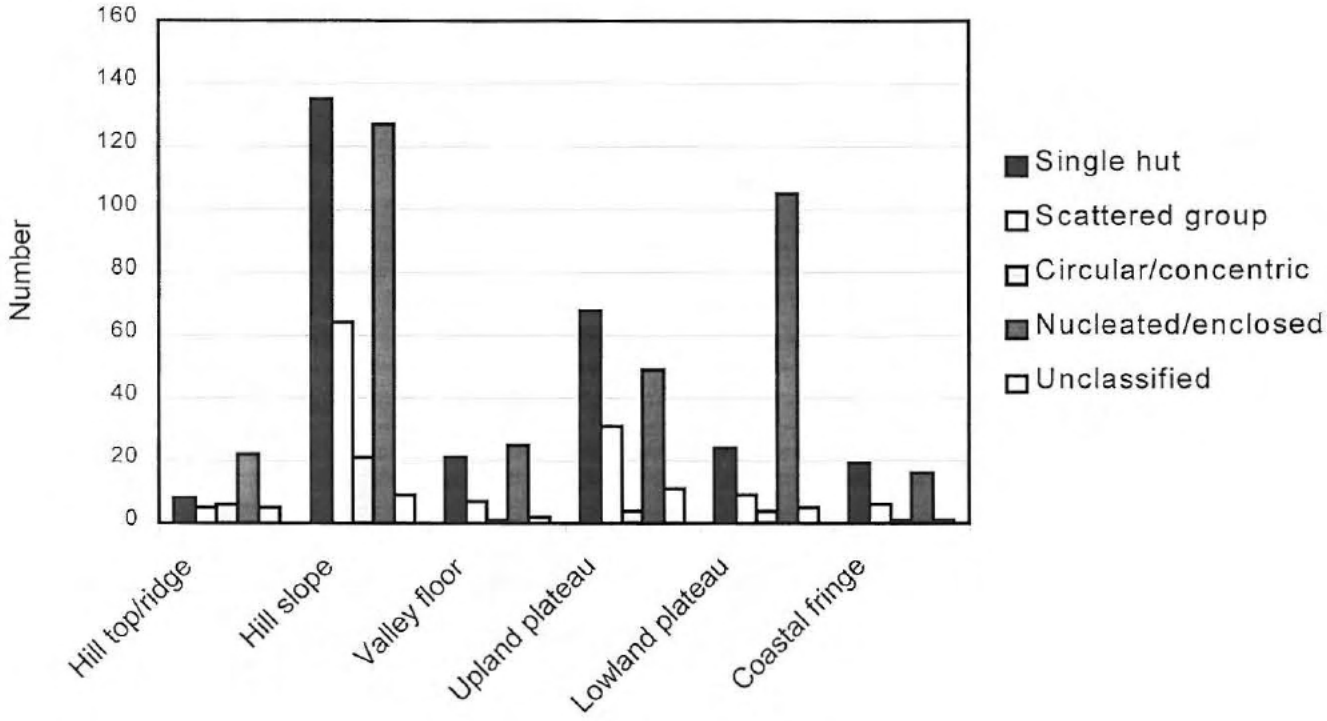


Table 2 Occurrence of all hut circle settlement according to altitude and aspect

	Settlement Aspect								
Metres OD	N	NE	E	SE	S	SW	W	NW	L
1-100	12	16	4	22	16	11	18	19	26
101-200	21	10	22	27	36	24	45	37	7
201-300	28	20	19	24	27	39	46	42	8
301-400	17	18	15	39	21	18	20	23	1
401-500	7	3	8	6	13	10	3	4	2
501+	2	1	-	2	1	2	-	-	-
	87	68	68	120	114	104	132	125	44
%	10	8	8	14	13	12	15	15	5

e. Aspect

Aspect or orientation is related to slope (where a level location was used then no aspect (L) is recorded). It was expected that there would be a strong bias to south-facing slopes that would benefit from greater sunlight and improved temperatures. However, orientations were relatively evenly distributed overall. It was only when broken down by altitude that the evidence showed more variation (Table 2). Locations below 100m OD show the highest proportion with no aspect bias i.e. a level viewpoint. Locations between 100m and 300m OD however are more frequently in a westerly aspect - south-west, west or north-west. Above 300m OD, locations are most frequent with a south-easterly aspect. These can be interpreted as follows: settlements below 100m OD in relatively favourable climatic situations have no particular requirement for aspect. The westerly aspect of settlement on land between 100m and 300m OD to some extent must reflect the actual availability of land as the settlement occupies mainly the western fringes of the upland, but, being marginal in terms of agriculture, may be

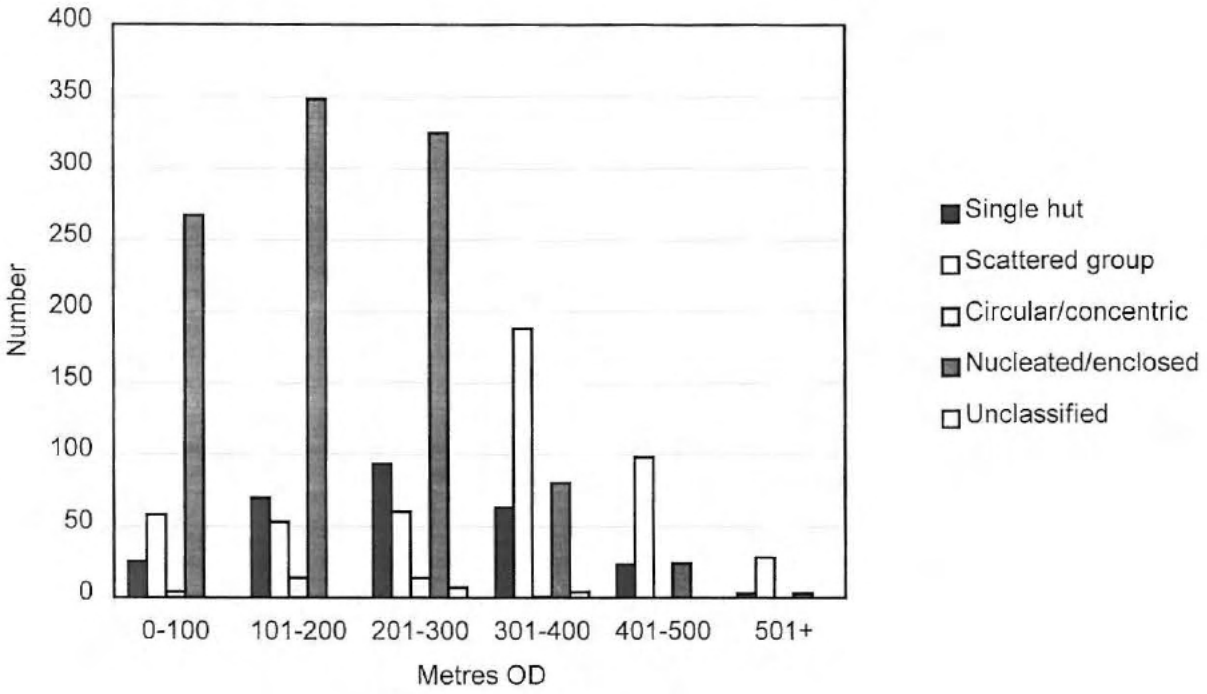
making best use of available sunlight and temperatures. Locations above 300m are beyond the limits of any cultivation and can be presumed to depend on a pastoral economy. The only bias in location is towards the south east, also the most frequently used orientation of hut circle entrances, clearly designed to avoid the main prevailing winds from the south west and north east.

Table 3 Number of identified huts represented by different settlement types

Settlement type	Number of sites	Number of visible huts/rooms	Average no. of huts/rooms
Single hut	277	277	1
Scattered group	123	485	4
Circular/concentric	37	33	<1
Nucleated/enclosed	347	1047	3
Unclassified	33	11	<1

f. The number of huts/rooms in settlements

Fig. 12 Total number of identified huts according to settlement type and altitude



This gives a better appreciation of the actual distribution of population overall and according to the population of individual settlements (Table 3). Thus, although single huts make up the second largest category in terms of number of recorded sites they are relatively few compared to the total number of huts belonging to groups. Nucleated/enclosed groups constitute the largest category of settlement type and of individual huts with over

1000 huts and an average of *c.* 3 huts per settlement. Scattered groups constitute 15% of the number of settlement sites but, with an average of *c.* 4 huts each, make up 26% of the total number of huts known.

Consideration of the number of huts in a settlement (Fig. 12) emphasises the previous observation that settlement types have different altitudinal affinities although some examples of all settlement types occur at all altitudes. Nucleated/enclosed settlements lie typically up to 300m suggesting them to be based on mixed agriculture with some arable. The scattered settlements are found most frequently between 300-400m, beyond the normal arable range and suggesting either an economy based on pasture or that some may derive from a period when climate was more amenable to arable at higher altitudes and when upland soils had not deteriorated.

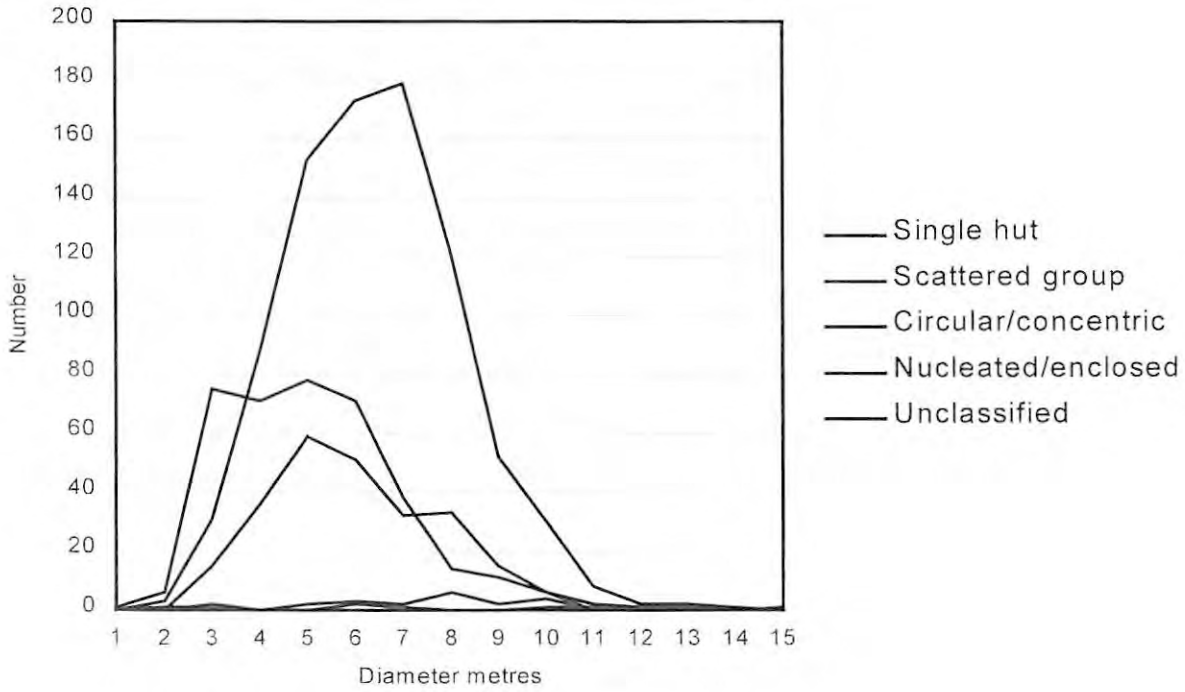
Single huts fell into two categories, those that were isolated and those that probably formed part of dispersed settlement. Those of the former category are found most frequently between 300-400m, those of the latter between 200-300m. These figures could mean that the former represent outliers to scattered groups while the latter represent outliers to the nucleated/enclosed groups. Amongst the scattered groups there is no difference in altitude occurrence between those that are loosely grouped and those that are dispersed with both concentrated in upland locations in the 300-400m band. The varieties of nucleated/enclosed settlement are all distributed similarly according to altitude. The exceptions are those of the rectilinear-shaped settlements which occur almost entirely in lowland situations and those recorded as nucleated within yards which are found frequently in higher locations suggesting a different economic base, perhaps with an emphasis on stock-keeping rather than arable.

g. The attributes of individual huts

This might give some indication of regional preferences in structural type but the variations recorded chiefly reflect differences in survival and of the types of available stone: in relatively stone-free arable areas huts are more likely to survive as banks or platforms and where large surface or outcropping rocks are available huts are likely to incorporate orthostats.

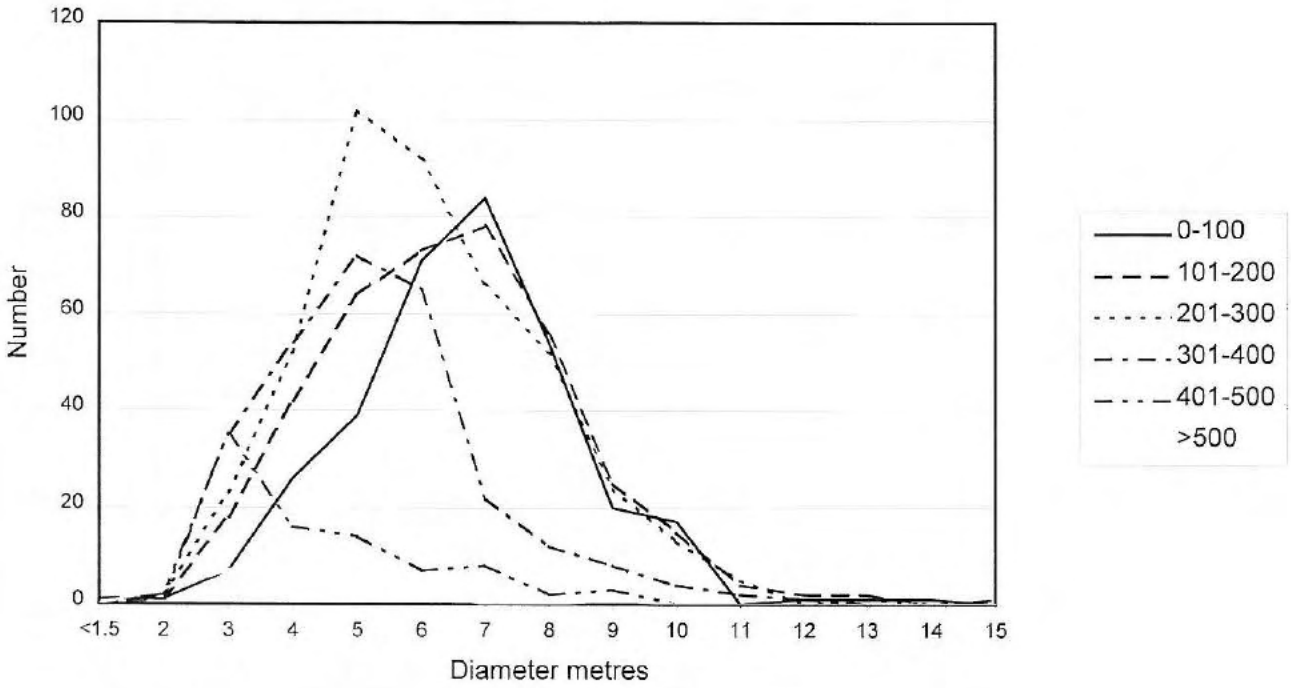
Variation in the shapes of huts present may not show cultural variation since it cannot be shown whether all the huts in a settlement are actually contemporary and in many cases clearly they are not. Rectangular huts sometimes form a coherent part of settlements of which the majority of huts are circular. However, in other cases these may belong to a separate and later phase. Where the latter was the case the rectangular huts were not included as part of the settlement but their presence was noted. The figures show a clear difference between the two main types of settlement group, the scattered and the nucleated/enclosed groups, in that rectangular huts are frequently found as part of the latter but not of the former.

Fig. 13 Distribution of hut diameter by settlement type



The size of those huts recorded as circular (Fig. 13) is very variable, from 1m to 15m diameter, but their occurrence is distributed fairly normally around a modal size of 6m with a mean size of 5m. In terms of settlement type there is some variation with circular/concentric settlements having an average hut diameter of 7.5m, nucleated/enclosed of 6.3m, scattered groups of 5m and single huts of 6m. Of the four main types of nucleated/enclosed settlements the rectilinear category has the highest mean hut size. Kelly (1998) has suggested that the total area of roofed space available at a settlement (TARSA) provides a useful measure of activity and one which can be expected to increase over time. Certainly, those settlements proved to be of Romano-British date, particularly the enclosed settlements, show a greater variety of hut shapes within them than the unenclosed, non-nucleated settlements.

Fig. 14 Distribution of hut circle size in relation to altitude (metres OD)



There is also a clear relationship between hut size and altitude (Fig. 12). Modal hut size declines from 7m between 0-200m OD, to 5m between 200-400m OD and to 4m over 400m OD. It has been shown that the settlement types themselves are distributed differently according to altitude and this may explain the relationship between hut size and altitude. However, even within settlement types, for example, in the nucleated/enclosed groups (Table 4), a trend to decreased hut size with altitude can be seen.

Table 4 Nucleated/enclosed settlement, hut size and altitude

Altitude, metres OD	Mean hut diameter, metres
0-100	7.0
101-200	6.5
201-300	6.0
301-400	5.7
401-500	4.3
>500	4

h. Discussion

The general results show that the nucleated/enclosed settlements are to be found mainly on the lower ground, up to 300m OD, and can be regarded as farms associated with arable cultivation. Almost all examples of settlements

associated with terraced, that is ploughed, fields occur in the same altitude band with over 50% in the band 101-200m OD. Of these, 67% are nucleated/enclosed settlements and 25% are single huts. There are fewer examples of settlements associated with curvilinear enclosures/fields/paddocks and these are found at a greater variety of altitudes, up to *c.* 500m OD, and the most frequently associated type is with scattered settlements in the 300-400m OD band. The general picture is of one dominated by enclosed farmsteads with outlying single huts in the lower lands, carrying out mixed agriculture. All of the excavated evidence from these types of settlement shows occupation within the Romano-British period although more recent work at Graeanog (Kelly, 1998) and Bryn Eryr (Longley, forthcoming) has shown that such settlements may often have origins in the late first millennium BC.

Table 5 Number of occurrences of features associated with hut circle settlement types and sub-types (see definitions above)

Settlement type	Sub-type	Curvilinear enclosures/fields	Terraced enclosures/fields	Long huts/platform huts
Single hut	1.1	16	2	16
	1.2	22	25	59
	1.3	2	2	3
	1.4	2	11	7
	1.5	2	2	1
	1.6	1	1	1
Scattered group	2.1	53	5	29
	2.2	13	2	8
	2.3	1	-	-
	2.4	-	-	-
Circular/concentric	3.1	4	9	1
	3.2	1	6	4
Nucleated/enclosed	4.1	-	25	17
	4.2	-	58	41
	4.3	12	17	11
	4.4	12	43	38
	4.5	1	6	3
Unclassified	5.1	-	-	-
	5.2	2	4	11
	5.3	1	-	-

The summary discussion on hut circle settlement by the RCAHM (1964) made a strong point of the difference between settlements associated with curvilinear enclosures (RCAHM type 2) and those associated with terraced fields (RCAHM type 4). The latter had been shown by excavation, to be mainly of Romano-British date while it was suggested that the former might be of earlier prehistoric origin. The present survey recorded the presence of curvilinear enclosures and of terraced fields where they occurred in close proximity to settlements but their presence was not related to the classification as such. Never the less, the results, (Table 5), make it clear that curvilinear enclosures are typical of scattered settlements while terraced fields are found in association with both scattered and nucleated/enclosed settlements. Single huts are found in association with both curvilinear enclosures and terraced fields. Isolated single huts are rarely associated with terraced fields, as to be expected since such huts are more frequently found in upland locations.

The scattered upland settlements and their associated curvilinear enclosures have yet to be fully understood. It was considered that they may represent an earlier prehistoric phase of settlement associated with a period of drier and warmer climate which allowed agriculture at higher altitudes which was abandoned in the first millennium BC when the climate deteriorated at the start of the Sub-Atlantic period (Evans 1975, 146-7). Such a gradual change would be likely to cause a change in economy from arable to stock-based rather than abandonment as such. In Wessex such changes have been tentatively identified in relation to the construction of major 'ranch' boundary systems, possibly concerned with cattle control. In Gwynedd only one truly upland settlement has been excavated, at Crawcwellt West, Trawsfynydd, Meirionnydd (Crew 1989). This consisted of a scatter of unenclosed huts associated with curvilinear enclosures/fields or paddocks and has proved to have been occupied from the later first millennium BC into the Roman-British period. Its economy, possibly to a major extent, proved to be concerned with the production of iron from local bog ore, and it was probably the location of this resource that determined the location of the settlement. The same link is likely to be found with some other upland settlements. At present there is no evidence to show that the scattered upland settlements represent an

earlier phase than the lowland enclosed and nucleated settlements. In Clwyd, however, at Mynnydd Poeth, curvilinear upland enclosures with cairns and a hut have been investigated which proved to be of Later Bronze Age date, with calibrated radiocarbon dates of late second to early first millennium BC (Manley 1990).

Excavations by Kelly (1988) at Moel y Gerddi and Erw Wen, Harlech, Meirionydd, two circular/concentric enclosed hut sites, have uncovered timber phases of construction beneath the presently visible stone walls. Kelly has put forward a strong case for this type of transition being a widespread phenomenon, possibly caused by the declining availability of timber for construction. If this is to be accepted then it might be the case that most of the visible hut walls are no older than the later first millennium BC. The earlier settlements may therefore all lie undiscovered, either beneath later stone structures or elsewhere represented only by platforms or by enclosures with no visible huts. The only proven hut circle settlement of second millennium date in Gwynedd is that at Meyllteyrn Uchaf in the lowlands of Llyn where the hut walls had been of clay and stakes and the site was only located because of crop marks visible on aerial photographs (Ward and Kelly forthcoming). Certainly, the wide distribution of find spots of stone axes and hammers and of bronze palstaves etc in Llyn, Ynys Mon and the coastal strip (GAT SMR) suggests that the lowlands were the focus of settlement in the third and second millennia BC, not the uplands.

Study of the types and distribution of settlement is more likely to produce ideas about their function or economy rather than dating. Such a difference in function has been seen in historic times in the distinction between *hendre* and *hafod* with lowland home farm and upland summer pasture home (Davies 1979). While such a system could have pre-medieval origins its existence will be difficult to be prove from the archaeological record. What is clear from the survey is that the ruins of many round huts were re-used at a later date for construction of what appear to be 'shepherds' huts' - small rectangular cells, about 2m by 1m internally, suitable for only a single person and possibly never more than low sleeping shelters. Much of this later pastoral use of the uplands was therefore quite different to the prehistoric or Romano-British period when quite substantially built dwellings, in widely or closely scattered groups, were being constructed.

Previous discussions of early settlement in the uplands have tended to assume that they were, as now, lands of poor pasture. In fact, forest cover was predominant. Following the last glaciation forest cover gradually increased until it was at its maximum extent *c.* 4500 BC when most of Britain was covered, with Wales dominated by oak/hazel woodland (Rackham 1990, 28). Forest cover probably extended as high as 750m (2500ft) on better drained slopes (Evans 1975, 82). Snowdonia was then a land of forest, not pasture, as indicated perhaps by place names such as Drws-y-coed, 'gateway of the wood' and Moel Goedog, 'hillside of the wood', in areas now virtually devoid of trees. Opening up and clearance of woodland in Britain occurred from the later Mesolithic but Snowdonia was still dominated by forest as late as the medieval period. Systematic felling was begun by Henry II in 1165 for military defence reasons and continued by Edward I who employed 1500-1800 foresters in 1277 to clear a bowshot width, for safety while advancing from Chester (Garnett and Richardson 1989). The maximum altitude of the forest cover was well above that of the highest known hut circle settlements. Only a few occur over 500m OD. Soils which developed under deciduous forest were fertile but in areas of acid rock and high rainfall were prone to acidification and deterioration with eventual peat growth. Clearing, cultivation and settlement may therefore have been of limited duration. This is another possible reason for a difference in nature between upland and lowland hut circle settlement.

In the medieval period rural settlement in Wales was typified by rectangular houses signifying a distinctly different tradition of house style to that which dominated the preceding Romano-British period. However, many hut circle settlements also contain rectangular buildings. In some cases it is impossible to tell from the above ground remains whether a rectangular building is contemporary with nearby round houses or a later addition. In some cases it is clear that both were in existence at the same time. In a number of cases rectangular huts have been inserted into the space between two nearby round huts, utilising their walls. In others the rectangular huts were separate but perhaps significantly utilised an enclosure wall whereas the round hut was free-standing (e.g. Fig. 3, top). In most cases it seems likely that the round hut remained the main dwelling.

It has been suggested, using excavated evidence of additions of long cow-houses to villas, that in the Romanized part of Britain stock raising was intensified in the later Roman period (Applebaum 1966, 102). The rectangular buildings within hut circle settlements may have been added in the same period for similar reasons. Rectangular buildings forming integral parts of the plan of settlements occur in enclosed settlements of rectilinear plan and these all date to the later Roman period (Johnstone 1989, 74-6). However, evidence of metalworking has been found at most of these sites and at Hafoty Wern-las (Fig. 3 top) one of the excavated rectangular buildings contained smithing hearths and appeared to be a workshop (Williams, 1923) as was also the case at Din Lligwy (Baynes 1908). Whatever their use, the rectangular buildings within hut circle settlements do not appear to have

been primarily dwellings. Using a sequence of structural changes revealed by excavation at Graeanog, Kelly (1998) has demonstrated how a gradual change from circular to rectangular structures took place. The present survey has also noted a few cases of round huts that appeared to have been built or modified with flat facades, giving them what may have been a 'fashionable' rectangular appearance and similar cases are known from a native settlement associated with a Roman villa at Stanwick, Northamptonshire (Neal 1992). More frequent are huts with a 'sub-rounded' ground plan that may demonstrate an intermediate stage in roof structure between those of the round hut and the 'hipped' rectangular hut. The round hut roof required a much greater head height than was necessary and was therefore uneconomic in materials, requiring much greater lengths and numbers of timbers and quantity of covering material. As more costly buildings, the continued use of the round houses as dwellings when rectangular structures were also in use, may therefore have been a matter of status as well as being a conservative and possibly deliberately 'non-Roman' style.

Apart from the presence of probably contemporary rectangular huts within hut circle settlements the present survey also has recorded the occurrence of rectangular huts or hut platforms of probable medieval date in the near vicinity. There are a considerable number of cases where long huts or platform houses of presumed medieval date are found in close proximity to hut circle settlements (Table 4). It might be expected that such huts might be found most frequently in association with nucleated/enclosed settlements and numerically this is the case with 110 examples of close association. However, in terms of proportion of identified examples with such associations then single huts, scattered groups and nucleated/enclosed settlements have almost identical proportions at around 30%. The settlement type with the most frequent association (41%) is in fact that of the single hut which is part of widely dispersed settlement (type 1.2). Observation suggests that being widely dispersed the chance of proximity to long hut settlement is increased and that no actual association need be implied. There are a number of examples where long huts are built over or seem to respect round huts and there are also rare examples where round huts may have been modified to form long huts. None of these can prove direct continuity of settlement without the benefit of excavation but such examples do show that there was no major discontinuity.

10. SETTLEMENT CONDITION, DETERIORATION AND THREATS

For a full description of the categories and of the values awarded in the Condition survey see Appendix 3, below.

a. Condition

The survey recorded condition on a five-point scale of Bad to Very Good to match the grading used by Cadw for the assessment of Scheduled Monuments in previous surveys (Davidson 1991). Its actual application is not easy to define but is best thought of as condition of the upstanding structure. This must be considered with respect to the type of structure present and must therefore be applied differently to stone-built and earth-built structures which will have different stable states. Similarly, consideration must be given to sites that exist only as platforms but that are distinct enough to suggest the former presence of timber buildings.

Table 6 Condition of hut circle sites

Settlement type	Not rec/ Not applic	Bad		Poor		Fair		Good		Very Good		Total
	No.	No.	%	No.	%	No.	%	No.	%	No.	%	
Single hut	21	28	10	82	29	115	40	57	20	5	2	287
Scattered group	3	9	5	26	17	68	44	49	32	4	3	156
Circular/concentric	-	1	5	5	26	6	32	6	32	1	5	19
Nucleated/enclosed	7	52	11	74	21	116	33	97	27	27	8	366
Unclassified	9	13	25	19	37	12	24	7	14	-	-	51
All hut sites	40	103	12	206	23	317	36	216	25	37	4	879

Table 6 shows the overall record of condition according to the general settlement type in both absolute numbers and as a proportion of each settlement type. As should be expected, the distribution of condition is fairly normal, in a statistical sense, with the greatest proportion of all settlement types being recorded as of medium or fair condition (category 3) with the exception of Type 5, Unclassified. The greatest proportion of unclassified

settlements falls in the category of poor condition. This is because sites in this category consist either of settlement-like enclosures with little evidence of internal structures or of areas of huts or hut-like features that are too slight or confused to be certainly classified. Both of these types will appear to be of lower condition than stone-built hut settlements because less is visible.

b. Deterioration

Table 7 Deterioration of hut circle sites

Settlement type	Not rec/ Not applic	Nil		Slight		Significant		Obliterated Above grd		Totally destroyed		
	No.	No.	%	No.	%	No.	%	No.	%	No.	%	Total
Single hut	21	131	46	117	40	25	9	7	2	7	2	287
Scattered group	3	88	56	63	40	1	1	2	1	2	1	156
Circular/concentric	-	6	32	11	58	2	11	-	-	-	-	19
Nucleated/enclosed	7	128	35	169	46	32	9	19	5	18	5	366
Unclassified	9	16	31	27	53	2	4	4	8	2	4	51
All hut sites	40	369	42	387	44	62	7	32	4	29	3	879

Deterioration (Table 7) is even more difficult to assess than condition. The scale used again corresponds to that used by Cadw in previous surveys (Davidson, 1991) except that a further category is added of 'totally destroyed' as opposed to merely 'obliterated above ground'. A value of zero is applied to those monuments which either need a revisit because they were masked by vegetation or could not be located but which were not likely to have been destroyed as far as could be determined. Slight deterioration applies to sites that have suffered very minor change with stonework exposed to natural erosion or sheep trampling. It can be seen that 756 sites (86%) have suffered little or no deterioration. However, there is still a significant number, of 123 monuments (14%), which show significant or higher deterioration. From the last figure should be subtracted 12 sites that have some record but were destroyed in the 19th century or in the first half of the 20th century. This figure does not give a full indication of the overall rate of destruction since few sites had any record at all before the Royal commission began its work in Meirionnydd (1921), Anglesey (1937), and Caernarfon (1956, 1960, 1964). Most of the known settlements were the more substantial enclosed or nucleated settlements and there are several records of agricultural clearance of such sites in Anglesey in the early 19th century (Smith unpub.). Any minor sites of single or scattered huts could easily have been cleared without attracting attention and will leave little trace compared with the substantial ditches and post-holes that survive in ploughed lowland sites in England. Today, records are better but there is still no provision for regular monitoring of sites apart from that carried out by Cadw for scheduled monuments. The last fairly extensive monitoring of sites was the work of the Ordnance Survey Archaeological Division in the late 1950s and early 1960s so a gap of 25-30 years has elapsed before the present survey. This is a significant length of time but the gradual deterioration due to natural erosion and sheep trampling has been relatively minor. It is only the significant or wholesale damage resulting from dumping, intrusion or clearance which is relevant. These types of damage result from the personal decisions of individual farmers or landowners, and cannot be predicted. The number of instances of such damage gives an indication of the overall level of such threats but does not help to predict where such threat will take effect. The survey record of the level of threats from agriculture is based on the land use capability and the accessibility of the land, that is, the better quality and the more accessible the land the more likely it is to be improved.

c. Threats and management

Table 8 Types of threat according to geographical area

	Threat type											
	Forestry		Agriculture		Building		Natural Erosion		Visitors		Others	
District	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Aberconwy	11	11	74	77	1	1	-	-	8	8	2	2
Arfon	8	4	154	79	4	2	7	4	18	9	5	3
Dwyfor	3	1	228	93	-	-	9	4	1	-	4	2

Meirionnydd	11	5	219	92	-	-	4	2	4	2	1	-
Ynys Mon	7	9	53	66	3	4	2	3	10	13	5	6
Total	40	5	728	85	8	1	22	3	41	5	17	2

The principal threat type to each monument is shown in Table 8, divided according to districts. This gives some idea of the evenness or variety in different topographic areas. Agriculture is by far the predominant threat in all areas, with forestry and visitor interference representing a much smaller problem. Agricultural threats, however, are very diverse in type and scale and include, for instance, stone clearance, dumping, pit digging, trampling, tractor tracking, stone robbing and ploughing and may include the other threats of building and forestry.

The most significant factor for appropriate management is the degree of threat, described here as 'threat value'. This provides a measure of the extent to which a monument is at risk of damage. Table 9 shows the threat values for the principal threat type of each monument (those with no threat value are awaiting a visit or revisit). As expected the largest number of sites fall in the category of 'slight threat'. On the other hand, 228 or 27% have a threat of medium or higher. The factors of deterioration and threat value have some relationship - more sites have been recorded with a threat of medium or higher than have been recorded with deterioration of significant or higher. This could suggest that the overall threat is less than it appears and that the threat value assessment has been too pessimistic. The overall likelihood of deterioration due to agricultural threats may be no greater, on a monument count, than in previous years but the uncertainty of potential threat presents a problem.

Table 9 Threat value according to threat type

	Threat value					
Threat Type	Negligible	Slight	Medium	High	In Progress	Buried/ Destroyed
	No.	No.	No.	No.	No.	No.
Forestry	5	8	6	11	10	-
Agriculture	247	309	108	26	38	-
Building	1	1	2	2	2	-
Nat. erosion	8	10	-	-	4	-
Visitors	8	22	9	-	2	-
Other	2	5	3	1	4	2
	271	355	128	40	60	2

The general geographical distribution of the examples of significant threat value (Figs. 15-16), of threat in progress (Fig. 17) and of destroyed settlements (Fig. 18) shows that the occurrence of threat is widespread and not localised. At this level of analysis the occurrence of threats tends to parallel the general distribution of hut circle settlements and no particular areas are obviously more prone to damage than others. However, it can be shown that the extent of the agricultural threat is closely related to altitude. The lowland, which has generally better quality arable or pasture land, is subject to regular ploughing and continuous pressure to level any upstanding 'obstructions'. Marginal land, between lowland and upland, is pasture, sometimes improved and is subject to pressure for land improvement by stone clearance. Upland is mainly rough pasture and is relatively stable with little likelihood of interference. If lowland is compared to upland (defined as above 240m OD, as used by the RCAHM to define its Upland Survey) both deterioration (Fig. 19) and threat values (Fig. 20) are seen to be markedly lower for upland. In terms of the geographical distribution of threats (Figs 15-18), when compared to the general distribution of settlement (Fig. 5), there are few significant threats in the areas of upland. This has a relationship with the types of settlement at threat since it has been shown that type 1: single huts (fig. 6) and particularly type 2: scattered groups (Fig. 7) are found most frequently in the upland zone. These types are therefore generally less under threat than the type 3: circular/concentric and type 4: nucleated/enclosed settlements (Figs 8 and 9).

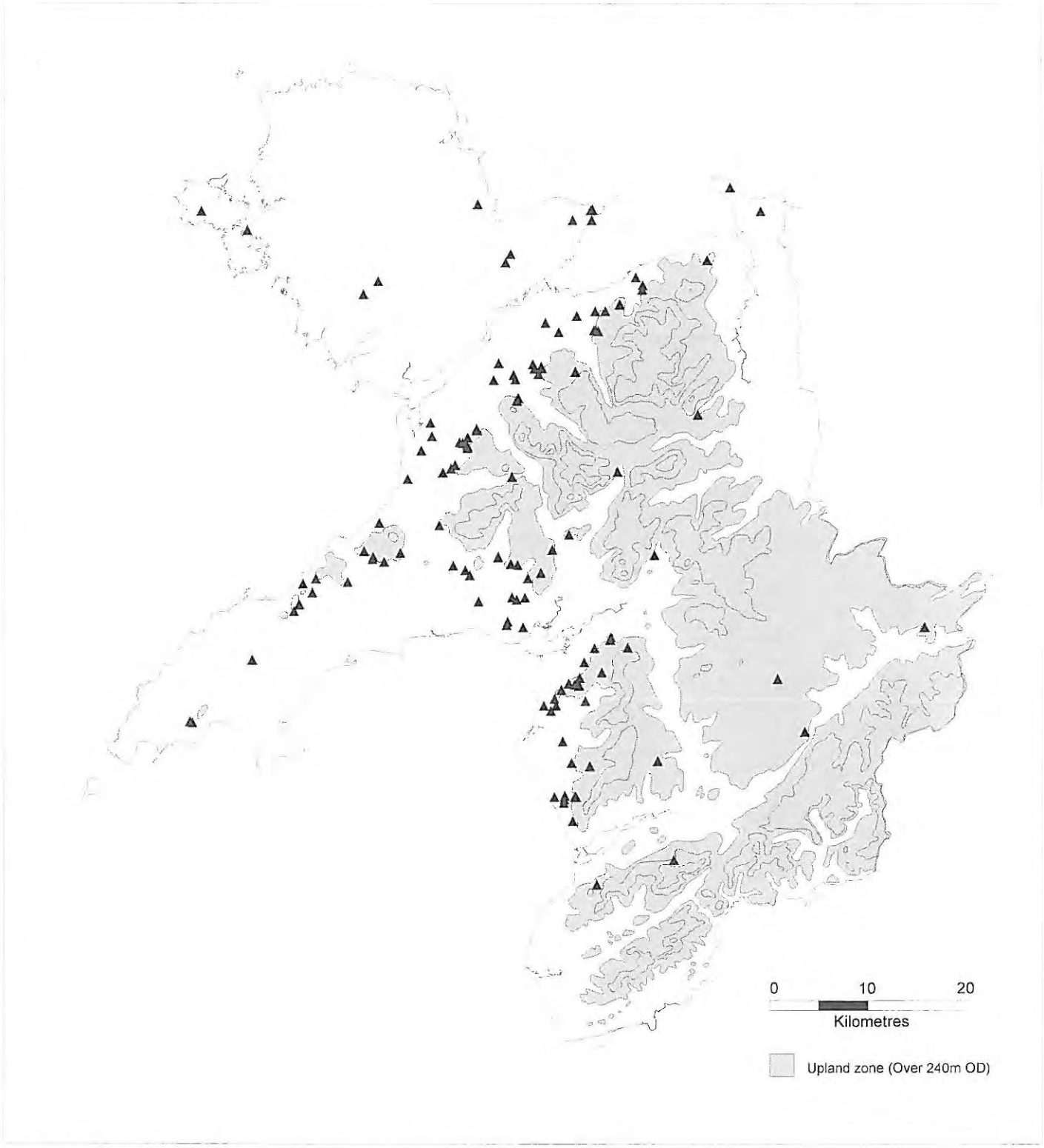


Fig. 15 The distribution of hut circle settlements with threats of medium value

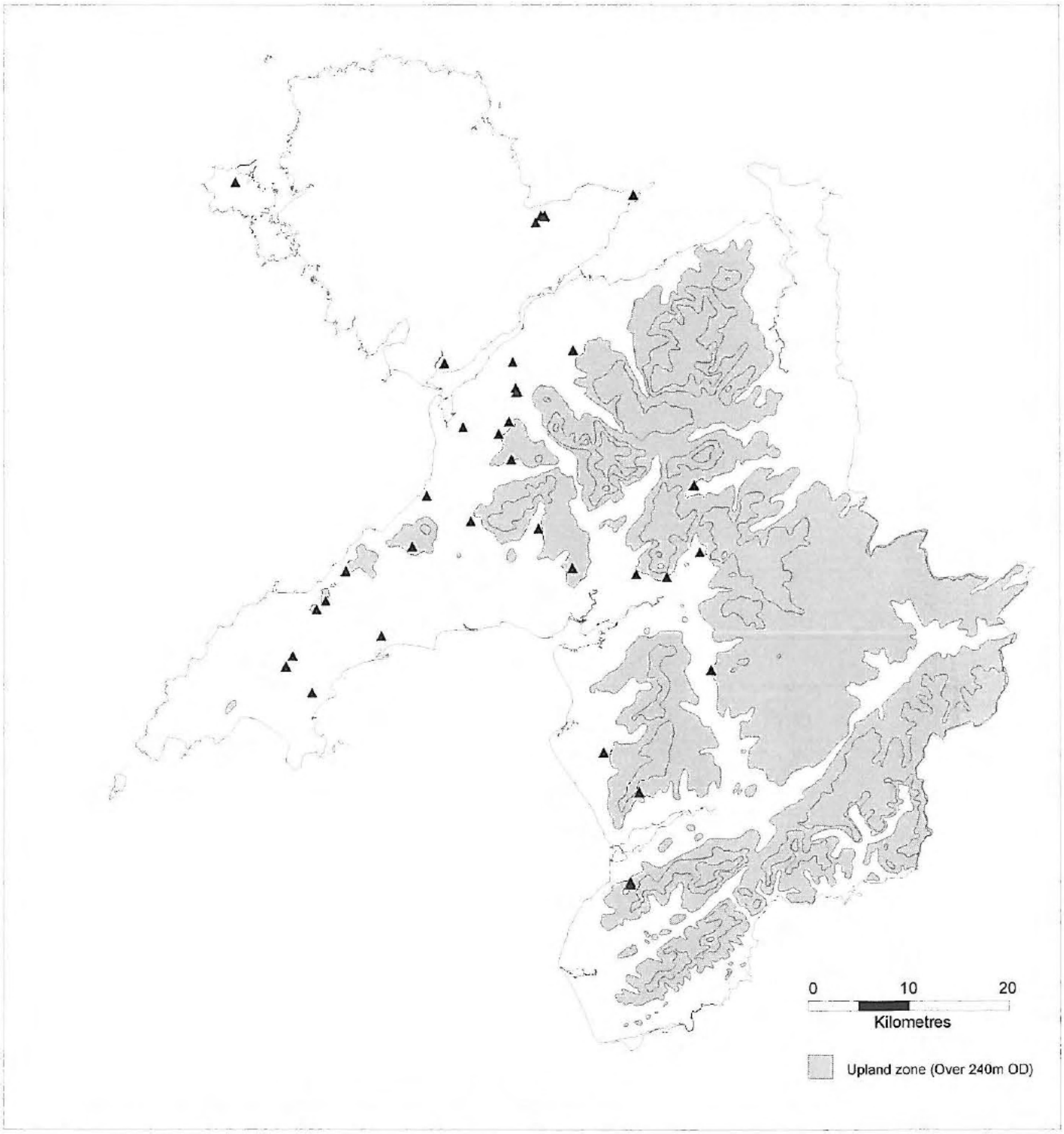


Fig. 16 The distribution of hut circle settlements with threats of high value

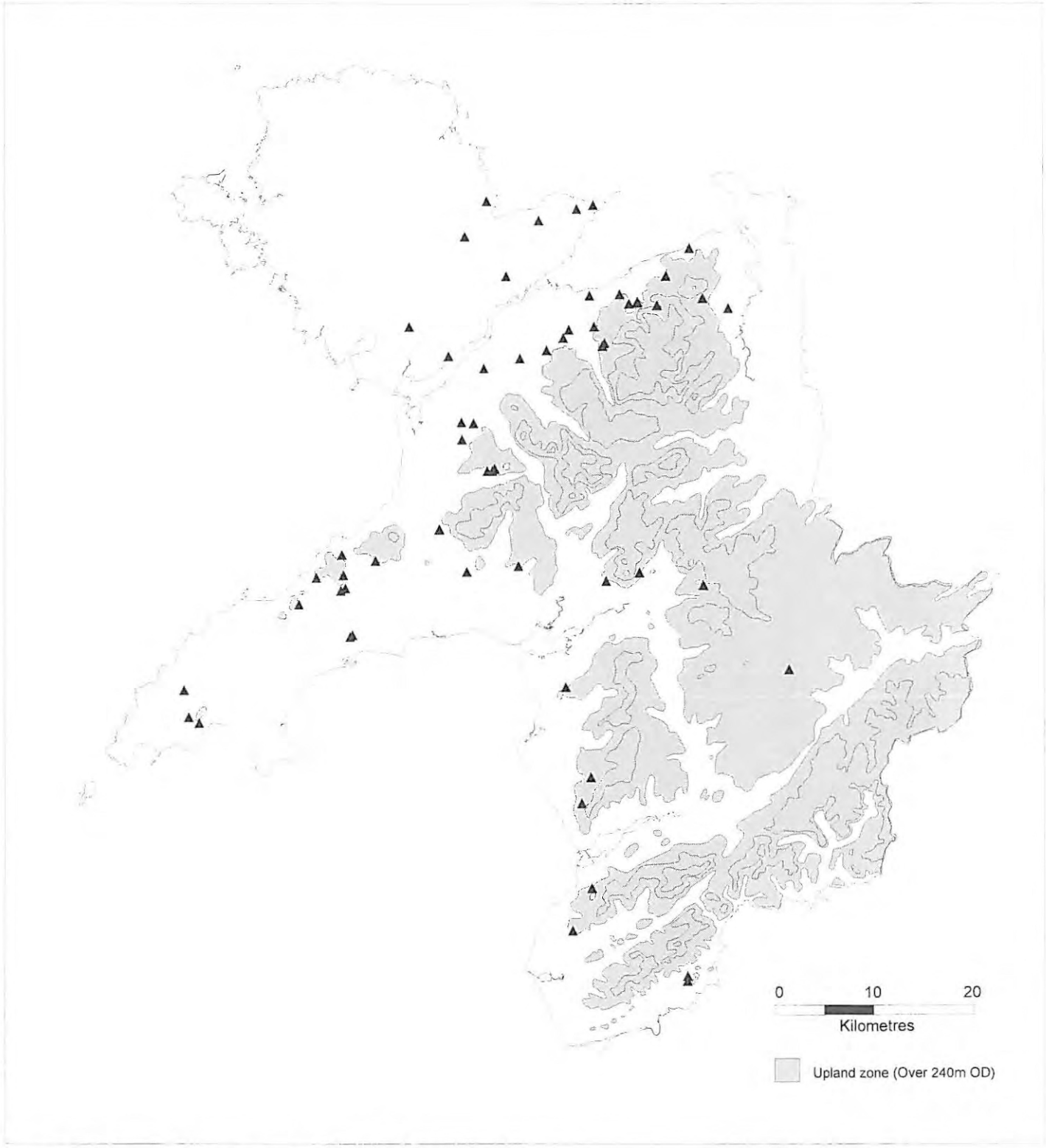


Fig. 17 The distribution of hut circle settlements with threats in progress

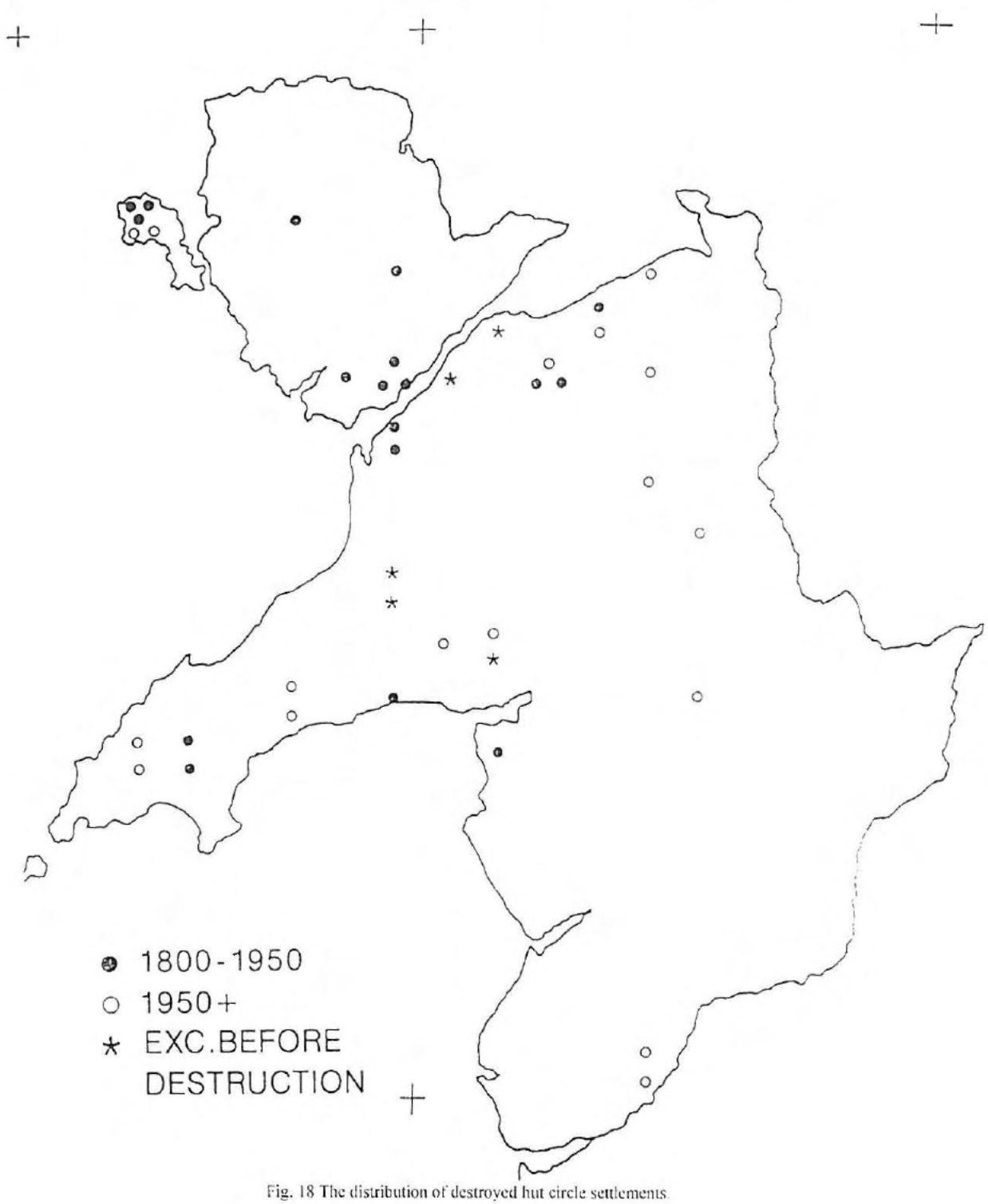


Fig. 18 The distribution of destroyed hut circle settlements.

Fig. 19 Deterioration of all settlement sites comparing lowland with upland

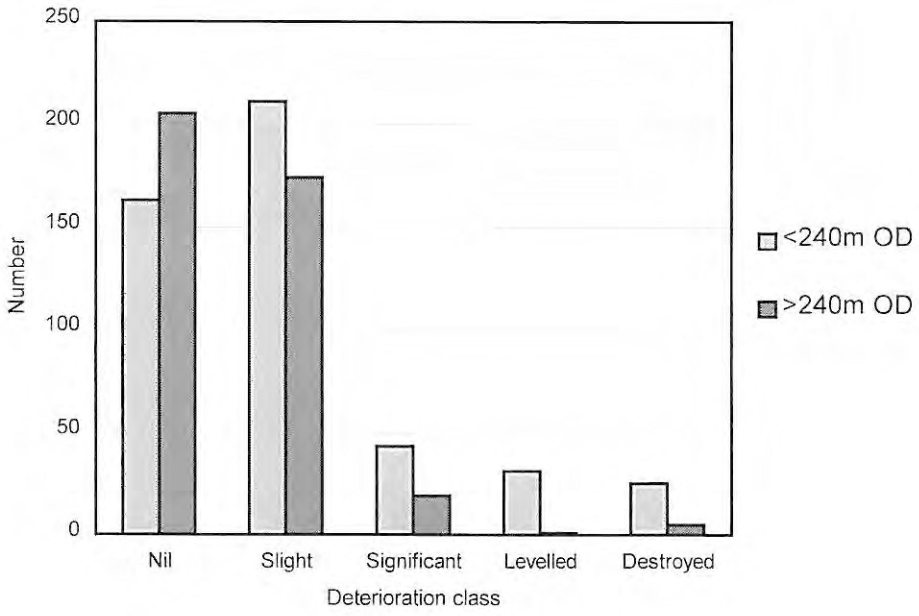
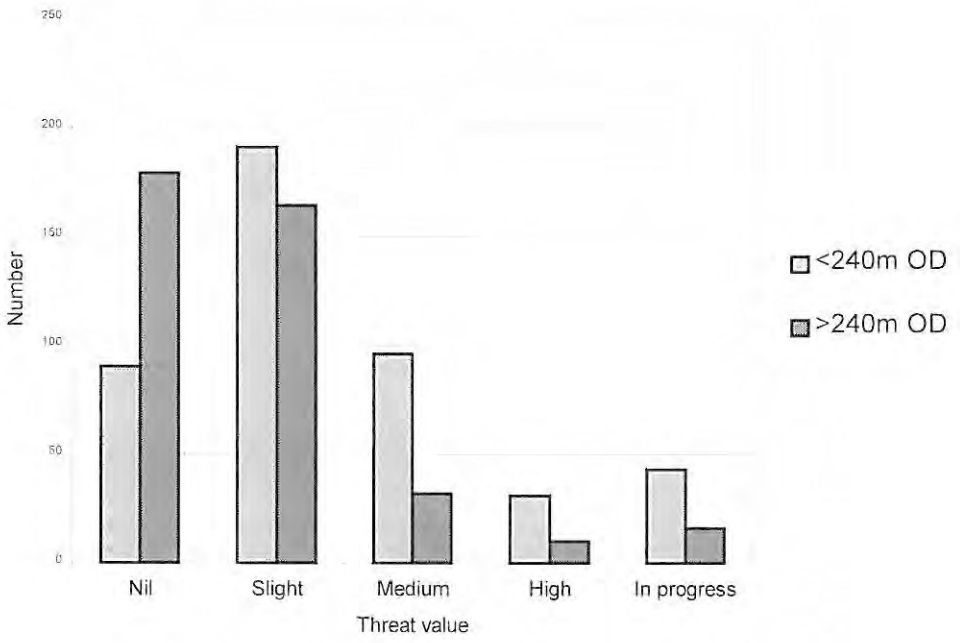


Fig. 20 Threat values recorded for all settlements, comparing lowland to upland



The differences in land use between lowland, marginal land and upland and the effects these have on threats to archaeology are therefore quite crucial. The survey record of land in the area immediately around hut circle settlements shows how large a proportion is in areas of rough pasture (Fig. 21). Such areas within upland tends to be left unchanged but the marginal lands between about 200-300m OD are often the subject of improvement. Large areas of North West Wales consist of this kind of marginal upland, stony, rough pasture in which any evidence of past human activity have been well preserved. Clearance of stones from this type of land with modern machinery involves total disruption of the surface remains and so this type of threat is the most damaging to the archaeology and one of the most unpredictable. Its likelihood depends to some extent on the fragility of the monument; thus it is much more likely to occur with a settlement of huts with earth banks than with boulder banks. Nevertheless, with the availability of earth-moving machinery even a large and massively built monument can be levelled or removed. Eighteen such cases of destruction in the period since the Second World War have been recorded, including one instance during the present survey (Plates 1 and 2). Because such clearance is not predictable it can only be mitigated by preventative action through information and agreement.

Observation of the differing proportions of land use around settlements in different areas of Gwynedd (Fig. 22) shows that there are areas, particularly Ynys Mon, where regularly ploughed arable or improved pasture forms the largest part. Ploughing causes gradual attrition of sub-surface features but in some cases, depending on the location of features, movement of soil can bury and protect features. However, where settlement features consist mainly of earth banks even minor encroachment around the margins of a monument can gradually lower its value until it is no longer visible, removing any amenity value and making total removal ever more likely (Plate 3).

The uplands, recognised to have a lower overall level of threats, often seem remote and unchanged and give the impression that the possibility of any kind of threat is negligible. However, with modern machinery, even such

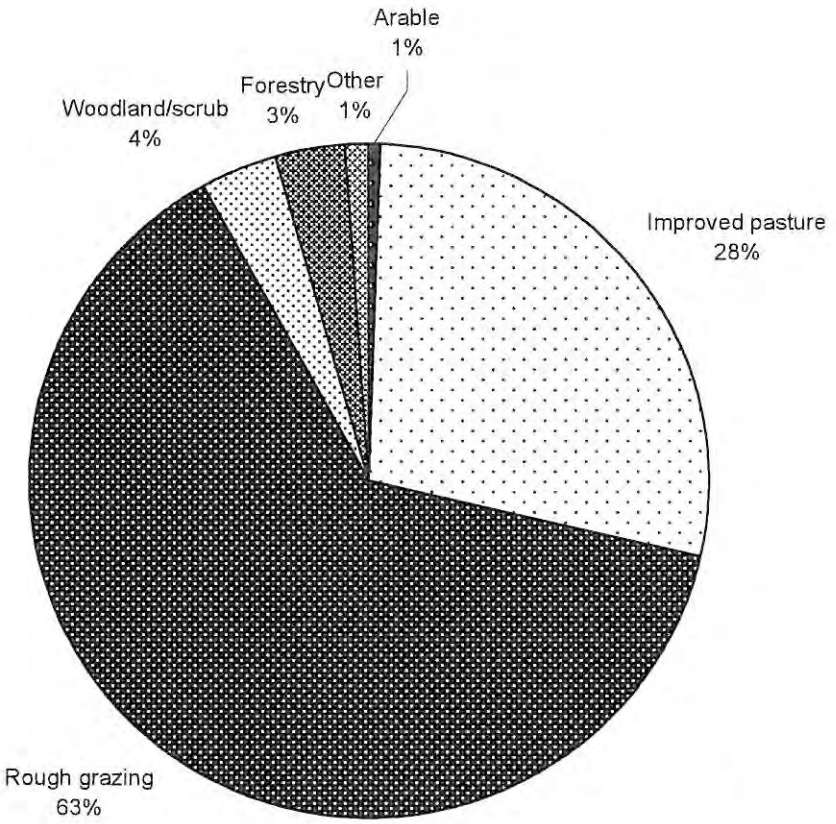


Fig. 21 The major land use recorded around each settlement as a proportion of all settlements

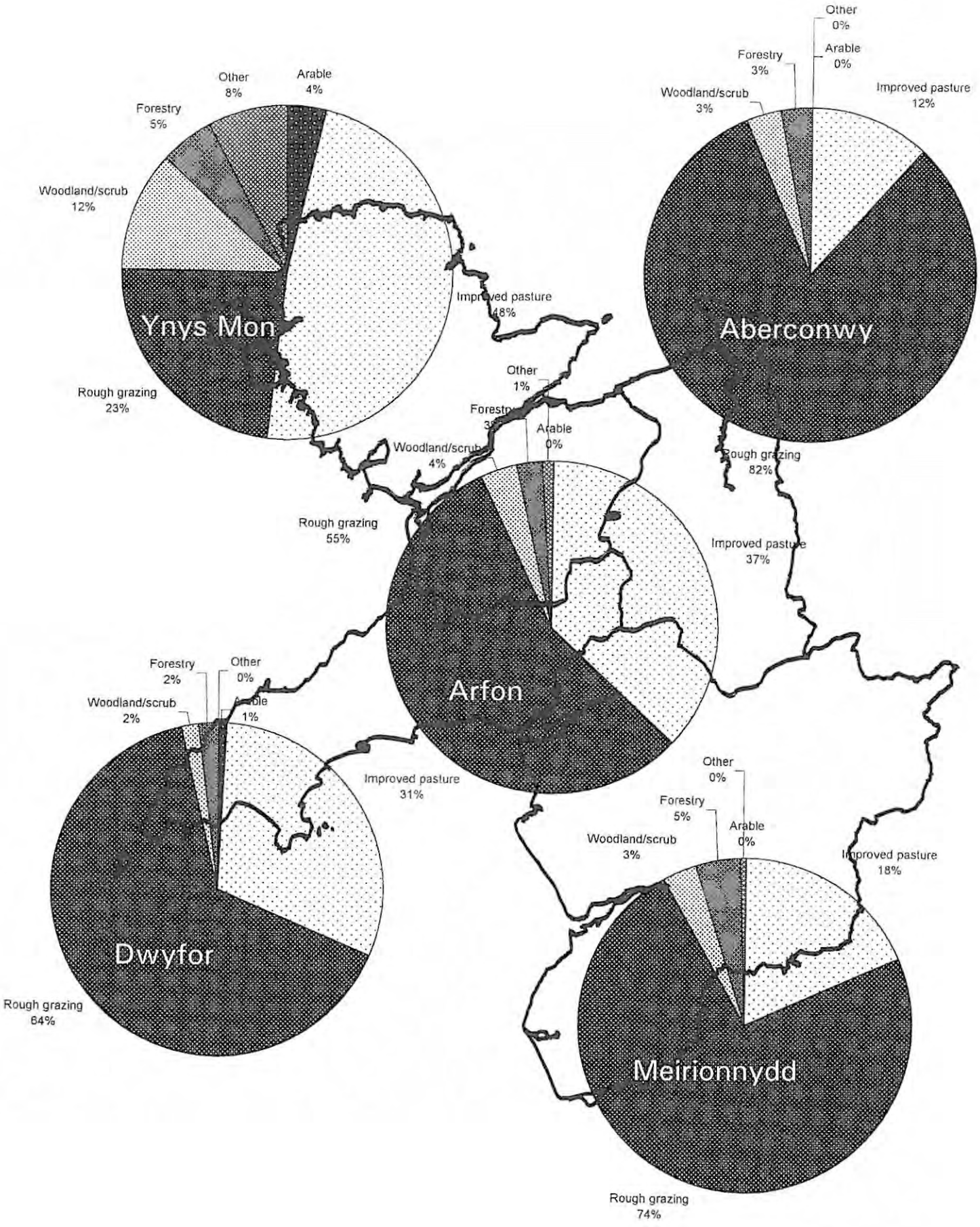


Fig. 22 The major land use around each settlement as a proportion of all settlements within each district.

areas can be ploughed and large areas of relict landscape can soon be eradicated and occasional cases of large scale improvement and damage occur (Plate 4).

Stock trampling is the most significant and widespread threat after clearance and ploughing. Sheep trampling is fairly universal but causes relatively little damage and can be considered as negligible. However, cattle and occasionally horse trampling does have a substantial effect. In areas of open pasture the effect can be slight if the archaeological remains are of low profile with a complete grass cover. It is the better-preserved monuments that are most at risk, where the remains are upstanding to a considerable height and where there are walls or facing exposed. Trampling has its most injurious effect where it is locally concentrated such as in areas of winter coralling and feeding (Plates 5 and 6). Where monuments lie in sensitive areas the damage can only be avoided by relocation of feeding areas or by fencing to exclude the cattle. Open wire fencing can exclude cattle but not sheep and this can be beneficial by maintaining the grass cover and preventing the growth of scrub.

In many areas, settlements survive as isolated 'islands' within otherwise cleared and improved fields. In such cases they are very often used as convenient dumping areas for clearance stone, for the placing of winter hayracks or for burial of sheep carcasses (Plates 7 and 8). While the archaeological potential may still remain, if buried by stone the chance of eliciting any information from the above ground remains is gradually diminished and once dumping has totally obscured the remains there is increased likelihood that the remains will be graded and grassed over, effectively removing them. Such treatment can be avoided by good information and voluntary agreement since damage normally occurs through of lack of knowledge of the value of the features. Other agricultural activities have some effect, notably drainage ditches and tractor tracks. These usually affect fairly limited areas and can be mitigated by adjustment of the route of drains or tracks.

Water erosion around reservoirs elsewhere in Britain has produced frequent archaeological finds where erosion has eroded peat and exposed old land surfaces, for instance Mesolithic flints at Llyn Aled Isaf in Clwyd (Jenkins 1990) and Neolithic axes and cup-marked stones at Stithians Reservoir in Cornwall (Hartgroves 1987). In times of drought or drainage for repair extensive old land surfaces might be exposed and there are then exceptional opportunities for archaeological survey and discovery. In Gwynedd one case has been recorded at Llyn Morwynion, Ffestiniog, where a round hut together with its contemporary land surface complete with organic remains has been exposed by lowered water levels after drought (Plate 9 and Fig. 23, top). There are a number of major reservoirs in Gwynedd and the total shoreline exposed runs into many kilometres. These deserve assessment and monitoring and where remains are discovered, as those in Fig. 12, a full response is appropriate, both recording and perhaps physical protection.

Forestry and woodland present a more discrete and identifiable threat to archaeology. In areas of mature deciduous woods, like that around this SAM close to modern settlement (Plate 10), the chief threat is neglect and rubbish dumping. Such a visible and accessible site has the potential to be made into an educational and amenity resource if agreement could be reached for access and interpretation.

Forestry Authority planting is monitored and responded to under present curatorial arrangements which provide for suitable notification of works which might affect archaeological remains. Similarly, most private planting is carried out with the benefit of grants which are administered by the Forestry Authority and appropriate consideration of archaeological remains is a requirement of such agreements. In recent years a number of pre-afforestation surveys have been carried out, followed by notification and marking out of monuments to exclude them from planting. Afforestation before the 1970's was not monitored. In some cases monuments were avoided and survive as islands within plantations, now very difficult to locate. In others forestry ploughing has totally removed any archaeology. Even where monuments are avoided by planting, tree growth eventually encroaches on their area (Plate 11). Such monuments need to be carefully monitored as any use of machinery for thinning, creation of firebreaks, felling or building of trackways can cause damage (Fig. 23, bottom).

Much private deciduous woodland is neglected and boundary fences are often not maintained, allowing stock to enter, resulting in damage by trampling. Trees often grow on top of hut or enclosure walls and tree blow can cause major damage (Plate 12). Active management is required to remove trees carefully and to avoid re-growth. In any information provided for woodland management the identification of the location of monuments and sensitive areas is crucial to avoid damage during thinning or felling because of the heavy machinery that is now used.

On balance, forestry, usually softwood, represents a severe threat to archaeology that must be very carefully managed. Deciduous woodland on the other hand is now rarely properly managed and in many cases is regarded

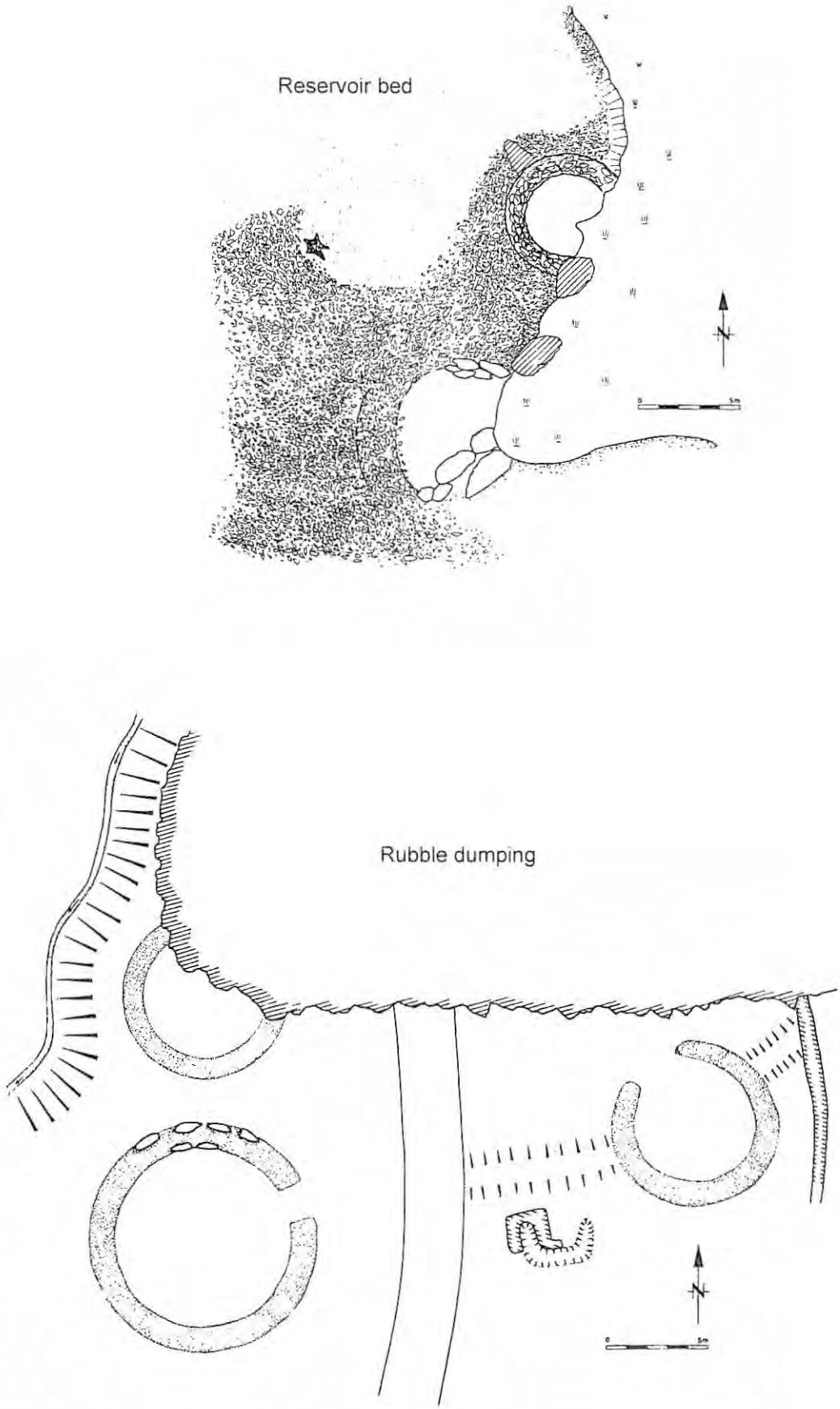


Fig. 23 Examples of threats to hut circle settlement:
top, Reservoir encroachment, Llyn Morwynion, Ffestiniog:
bottom, Forestry road encroachment, Rhyd, Llanfrothen.

as a nature conservation resource. Nevertheless, any felling or thinning still needs to be managed as carefully as for softwood forest. Deciduous woodland generally has its origins in natural regeneration or old plantation from the eighteenth or nineteenth century. At that time all forest work was carried out by hand and, apart from the track ways required for carting away timber, did not result in disturbance to archaeological remains. There may be a small element of present day woodland which is entirely of natural origin but much derives from re-grown abandoned coppice left over from charcoal burning (oak), tan barking (oak) or, less frequently, clog soling (alder), fence staking (oak and sweet chestnut), hurdle making (hazel) and other crafts. This re-grown old coppice woodland, often high up on slopes, seems to offer little threat to archaeological remains since the timber is generally poor and unlikely to be felled. This type of woodland often constitutes a historic landscape and resource in itself, for its nature conservation value and for the (archaeological) remains of early woodland industries surviving within it. Most of these woodlands will be listed as 'sites of ancient woodland' (Garnett and Richardson 1989) and will have some protection within forestry agreements. This kind of woodland can therefore be considered as beneficial rather than a threat and many well-preserved archaeological remains are to be found in them of which much still needs to be identified and recorded.

Archaeological monuments in areas of marginal rough grazing, where sheep grazing pressure is light, are commonly affected by the growth of scrub vegetation. In areas of better pasture, intensive grazing can maintain a continuous short grass cover. Monuments which receive statutory protection as SAMs need careful management because removal from grazing pressure by fencing or change in land use may easily result in scrub growth. The monument may become lost to view and the possible necessity of physical removal of scrub may itself endanger the remains. Observation during past excavation shows that the root growth of scrub in itself does little damage to earthwork structures and the scrub itself may even provide some protection from grazing damage. However, in the long term there will be a natural succession towards woodland. Bracken, gorse and bramble are the most frequent first colonisers, followed by blackthorn and sometimes willow and these may eventually be succeeded by hazel, rowan and perhaps sycamore. Once woodland has been established, as described above, wind-blow of mature trees can cause major damage to earthworks (Plate 12). Scrub growth has another effect because it obscures archaeological features which, being less visible, may go unrecorded and are unlikely to be given consideration in any subsequent land use. For instance, land overgrown with scrub becomes too rough to provide useful grazing for sheep and is then often used for cattle and these are likely to cause severe trampling damage.

These factors therefore need to be taken into consideration when designing management strategies. It has also been shown that upland areas are generally less at risk and could be managed largely within broad conservation schemes, particularly those relating to the national park. For the lowland and marginal areas land improvement by machinery, stone clearance and ploughing form the major threats. These may be met at a general level within broad management schemes such as those for the Environmentally Sensitive Areas of Llyn and Ynys Mon. At the individual monument level, specific responses are needed. For the continued preservation of any monument that is not at risk from major threats it is necessary to keep it free from tree and scrub growth and free from cattle grazing. Monuments in care can be maintained at some expense by manual grass-cutting but, for the rest, continuous grass cover maintained by fairly intensive sheep pasture is the most desirable objective. Damage from plough intrusion can be met by the provision of location maps and larger scale plans to landowners and perhaps by marking sensitive areas on the ground. Damage to sites already under the plough can only be met by agreement to a depth limit for cultivation and then by monitoring. These aims can only be achieved by a programme of pre-emptive management by personal contact, provision of information and the development of individual monument or whole farm conservation plans. Hut circle settlement constitutes one of the largest monument classes in Gwynedd and 228, that is 27%, of this class have been identified as having a threat value of medium of higher (Table 16). This group of monuments should be considered to be at risk and to need management attention. The work involved therefore represents quite a significant task. However, using the data collected, it is possible to prioritise the management work, and the most immediate action is needed for the 60 monuments, that is 7% of the whole class, or 26% of those 'at risk', that are actually undergoing damage from a threat at present.

11. THE OBJECTIVES FOR FUTURE RESEARCH

a. Identification of settlements with high individual potential

The creation of a database containing descriptive detail of all known examples of an entire monument class provides a valuable research resource. The database can be queried to look at specific problems of, for instance, distribution or association. The main outlines of the results have been described although it would be possible to carry out more exhaustive analysis. A separate published report will synthesise the evidence and provide further

interpretation.

The survey included both personal assessment of monument value (the Conservation Status) and an assessment of value based on a number of defined criteria as required for the recognition of national importance for the scheduling of ancient monuments (DOE 1983). The method was based on that used in the English Heritage Monuments Management Programme (Startin 1993) but with the criteria defined according to the specific requirements of hut circle settlement remains in Gwynedd. The method and definitions were set out in the Pilot Study report (GAT 1994) and the details are described in a separate report (GAT 1997) to Cadw.

The most important criterion used in the monument value assessment was that of **potential.** For the sake of individual value this was defined according to the likelihood of the presence of intact floor/occupation surfaces and thus of associated artefactual or environmental evidence. Research potential can, however, be defined in abstract academic terms and can depend on a variety of factors apart from simply the survival of stratified remains. Some of these factors were incorporated in the survey by means of other criteria, such as association with other monuments and documentary value. Consideration of the results of the present survey suggests a number of situations where settlements should be assigned high individual potential and these are set out below. Most of these can be selected by query of the present database alone, or in conjunction with the SMR.

- Sites where more than one type of hut is present within the settlement or where there is evidence of modification of huts.
- Sites where medieval? rectangular huts exist within, or closely adjacent to, the settlement.
- Sites close to industrial remains such as axe factories, quernstone quarries, burnt mounds or metal ore deposits.
- Sites close to funerary monuments such as chambered tombs or ring cairns.
- Sites close to blanket or valley peat deposits.
- Sites with attached fields or systems of enclosures.
- Sites with unusual features such as possible ovens, ponds, and mill-sites.
- Sites of isolated and scattered settlement type.
- Sites excavated before modern techniques of dating or environmental identification were available but which were shown to have good potential that could be extended by further work.
- Sites with good organic preservation.

b. Identification of areas of high academic priority

Another way of viewing archaeological potential is to identify situations where settlements relate to general areas of research interest. These can, to some extent, be seen as enquiring about areas relevant to the criteria of national importance as set down by the Secretary of State for the scheduling of ancient monuments.

- **Period.** Investigation of settlement examples that may throw light on the earlier prehistoric period e.g.
- scattered upland sites that have close associations with burnt mounds or with ring cairns.
- **Group Value.** Investigation of settlements where more than one period seems to be represented and so where there may be long continuity. For instance settlements with a variety of styles of huts or those where long huts or platform huts lie in or around the settlement.
- **Diversity of type.** Investigation of examples of unusual type which may throw light on chronology e.g. very small huts, oval huts, irregular or sub-rectangular huts, huts with sub-divisions, huts with facades.
- **Documentation.** Re-investigation of significant sites of earlier excavation.
- **Representativity.** Analysis of aerial photographs in a sample area, selected areas or transect followed by geophysics and trial excavation. The sample would be controlled to provide a proper assessment of the distribution of settlement unlike the random sample for the Llyn Crop marks Project.
- **Survival.** Investigation of the 'blank' areas around structures within settlements by soil survey, geophysics, excavation and soil sieving to allow a better assessment of potential.
- **Monument types requiring further assessment.** Investigation of site types which cannot be adequately assessed because of the lack of interpretative information:
  a. Platform sites. Assessment and investigation to allow a better appreciation of their function and value. The study of soils would be appropriate, for example by phosphate, magnetic susceptibility and micromorphological analysis.
  b. Upland settlements. Investigation of examples with attached curvilinear fields or enclosures and of other examples without such enclosures in order to provide evidence of date and of economy.

c. General assessment of the research resource and the wider research agenda

These suggested indicators of potential and areas of research priority are more specific than those defined for the criterion of Potential in the monument value assessment that was also carried out during the survey. This assigned simple values of Low, Medium and High to a number of criteria of national importance as set down by the Secretary of State in the Ancient Monuments and Areas Act (1979). Potential was just one of these criteria but can include elements of most other criteria. Thus a high value in terms of any of, for example, group value, survival, condition, diversity of type or diversity of features will give increase the general academic potential of a site.

This assessment of the overall value of a site is the first stage in the process of assessment of the resource. It involves professional judgement of the values in terms of individual criteria and of the overall summary value combined with personal assessment of individual factors. For instance, a site can have a high value on the basis of one criterion alone regardless of any others, such as one where an exceptional find, such as a hoard, has been made. The second stage in the general assessment process involves the identification of suitable break points in the database of monument values to allow assignment of priorities for response, such as, for instance, protection or management. The final stage involves looking at the overall resource in terms of production of a research agenda. This will determine what sort of sites are likely to have high academic potential and which lines of research would be most productive.

The problem has been considered previously by a committee of the Council for British Archaeology (Thomas 1983) which suggested that rural archaeology should be:

1. Ecologically conceived
2. An integrated exercise based on the use of multiple investigatory techniques (i.e. not just excavation)
3. Area-based
4. Long-term, though not necessarily continuous
5. Academically motivated within carefully conceived research strategies (*ibid, 18)*

The CBA report also suggested a number of research areas and approaches relevant to early settlement (*ibid*, 21-2)

- The size and distribution of population and the types of settlement
- Land use and allotment
- Identification of regional characteristics
- Settlement hierarchies, status and territories
- Topographic location and its significance
- Origins, functions and end of settlements and their relationships with other contemporary features, for example cemeteries
- The relationship between towns and countryside
- Bioclimatic zones and their possible deterministic influence on land use and settlement
- Elucidation of the meaning of excavated structural/economic evidence
- Investigation of the earlier origins of settlements which are still in use today
- Fieldwork, particularly excavation to elucidate and evaluate the mass of available air photographic evidence
- Long term projects designed in terms of national needs

More recently there has been further consultation of all the period societies leading to publication of general frameworks for research in England (*Exploring Our Past*, English Heritage 1991). For the prehistoric and Romano-British periods these are applicable to Britain as a whole and the following areas are highlighted which are relevant to the present survey:

Processes of change

a. The origin and development of settlements and associated field systems of the later 2nd and of the 1st millennium BC.
b. The transition and interaction between the native Iron Age and the Romano-British period.
c. The transition of settlement of the Late Romano-British to Sub-Roman and Early Medieval.

Landscapes

Relict field systems.

In addition *Exploring Our Past* highlighted categories of landscape where archaeological remains deserve particular attention and several of these are relevant to the study of hut circle settlement:

Ploughed landscapes – where fieldwork by surface collection, aerial photography and small-scale excavation is needed to correct the imbalance in knowledge about these relatively archaeologically 'poor' areas compared to unploughed areas.
Unploughed upland - where there are many unrecorded monuments and features. This is particularly relevant to North Wales where there are also considerable areas of lower lying but unploughed marginal land.
Wet and waterlogged sites - where there is preservation of cultural and environmental evidence. Identification and excavation of examples of such settlements can significantly expand the understanding of the period as a whole. Surveys of such areas have already been carried out, or are in progress in the Fenland, Somerset Levels, Lancashire and the Humber Basin. The blanket and valley peats of North West Wales have not so far been assessed it has not been possible to estimate their relevance to the assignment of potential of sites in the current survey. *Exploring Our Past* also notes the importance of studying the areas adjoining wetlands in order to put the record in context.
Other areas of landscape with relevance to North Wales but not yet specifically assessed in relation to early settlement are the **coastal zone**, the **offshore submerged zone**, **alluvium** and **unploughed lowlands** (for example ancient woodlands).

Research frameworks for Gwynedd have also been produced (GAT 1996). These are based on assessments of different cultural periods, of what archaeological remains typify each period, of what the known resource consists of and what should be the main objectives of research. For the purposes of hut circle settlement these can be summarized as:

Period transition. Bronze Age/Iron Age, Iron Age/ Romano-British, Romano-British/Early Medieval.
Mineral resources. Location and investigation of sites of extraction, processing and trade together with the related factors of wealth and status.
Burials and ritual. Identification and continuity.
Social distribution/structure. The need for a balanced, representative picture of society in different periods.
Topographical/bioclimatic zone analysis. Use of aerial photographs and sampling survey to produce a predictive framework of land use.
Buried/waterlogged landscapes. Location of suitable sites to enhance the quality of knowledge through well-preserved artefacts, environmental and human remains.

A qualifier of the present survey of settlement is that it does not include all settlement since it excludes defended settlement. For the periods in question the defended sites, whether fortified settlements, centres of authority or more specialised military sites, form a coherent part of the social structure. It is not valid to make hypotheses about territories or social structure without taking them into consideration. Research must confine itself to hypotheses about agriculture, subsistence and the possible cultural variation of settlement types. Taking the above into account the following lists the main implications for practical work:

- Extension of the survey to include defended settlement followed by enhancement and further analysis of the database to allow fuller locational analysis according to territory, land capability, topographic type etc.
- The present database and the SMR need attention to make it a fully accessible GIS with attention to uniformity of database fields and thesaurus and to incorporation and retrievability of graphic records.
- Intensive study of a sample area of Ynys Mon to provide a more reliable idea of the density of lowland settlement. Initially perhaps by aerial photograph plotting, followed by a research design for field walking, geophysical survey and trial excavation.
- Earlier prehistoric settlement. Excavation of one or more scattered upland settlements.
- Romano-British/Early Medieval transition. Excavation of selected parts of one hut circle settlement that is intimately associated with long huts.
- Environmental background to period transitions/economy. Identify suitable sites for pollen columns.
- Enhancement of the quality of the record. Assessment of wetland/peatland. Identification of waterlogged sites.

In the wider sphere of science, new and improved techniques for survey, dating and analysis are being developed. These may affect the priorities for practical work. For instance, work on human and animal genes in bones or tissue or atomic indicators present in timber artefacts may vastly increase the potential of waterlogged sites. Identification, assessment, recording and management of such sites may become a major priority.

In terms of the wider landscape, focussed use of environmental and dating techniques is needed to understand the chronology and the continuity or discontinuity of settlements and of the land use around settlements. These need to be assessed in terms of understanding particular topographic or bioclimatic zones, for example of one valley or one upland plateau. These may then be tested in terms of their predictive value in other, similar topographic areas. Other studies, like those of ploughed landscapes and the problem of site survival and representivity of the record should be investigated using statistically valid sampling techniques, such as random quadrats. Discontinuities in land use recognised in pollen columns may be dated by radiocarbon and could then be followed up by investigation of the local settlement record. Such discontinuities are also of wider scientific significance and interest since they may be related to climatic change. These might be identified in the dendrochronological record by seasonal variation in cell growth and by changes in atomic atmospheric indicators stored in the plant tissues (Baillie 1995). Politics, economics and environmental issues are increasingly seen on a global scale. The scientific studies of climate change and of evolution have taken on a new significance and archaeology provides evidence as well as stimulating further questions.

Past study of prehistoric and Romano-British settlement in Gwynedd has been confused by an obvious wealth of above ground structural evidence alongside a poverty of artefactual evidence through being largely aceramic and with conditions preventing the preservation of organic artefacts or animal bones. Analysis of the database of the present survey can only go so far without recourse to investigation by excavation but it does provide a framework upon which future research can be built. The database itself will be extended by future surveys and information from these should be designed to allow incorporation in the database. For the purposes of management the survey identifies priorities for action and provides a 'snapshot in time' of the state of individual monuments as well as of the whole resource and these can be used for comparative purposes as part of any future management or research agendas.

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Plate 1: Round hut with wall banks surviving up to 1m in height, part of an enclosed hut group. Llanwnda, Caernarfon, June 1995.

Plate 2: Enclosed hut group as in Plate 1, after clearance. Llanwnda, Caernarfon, July 1995.

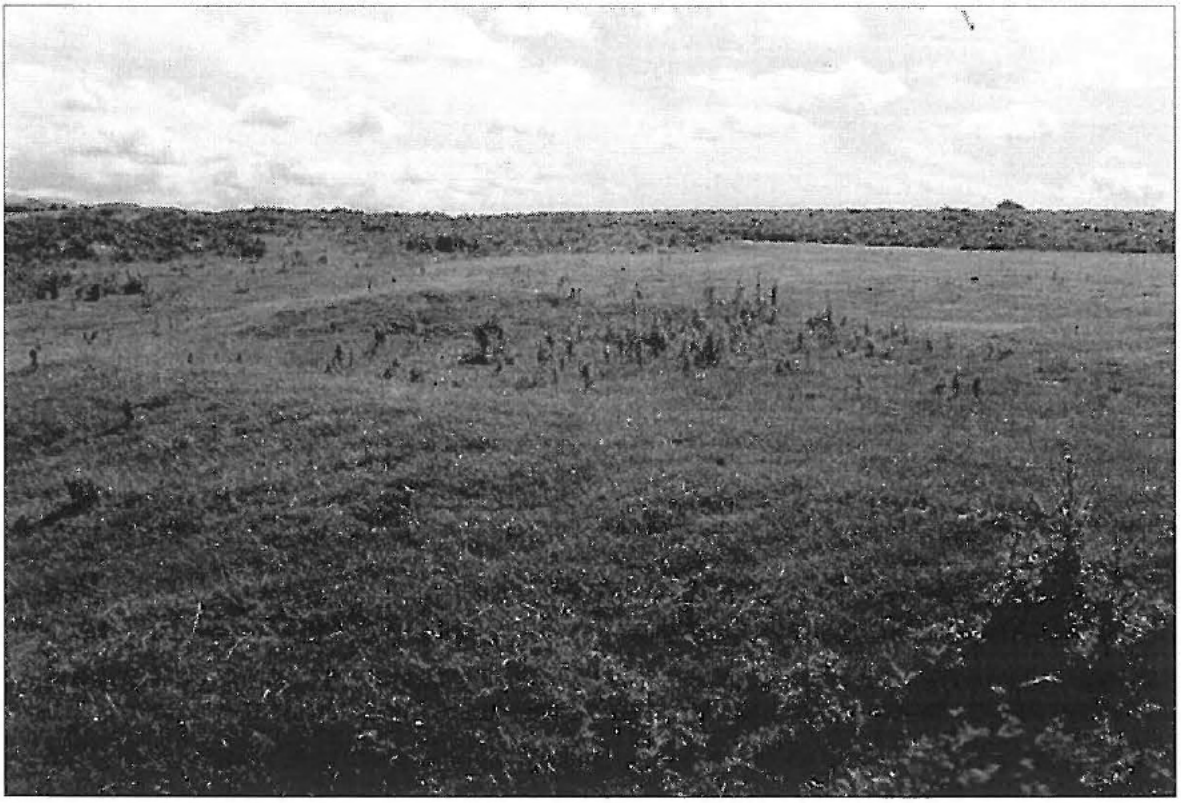

Plate 3: Round hut, part of a formerly well preserved unenclosed hut group, after prolonged cultivation. Llangoed, Ynys Mon, July 1995.

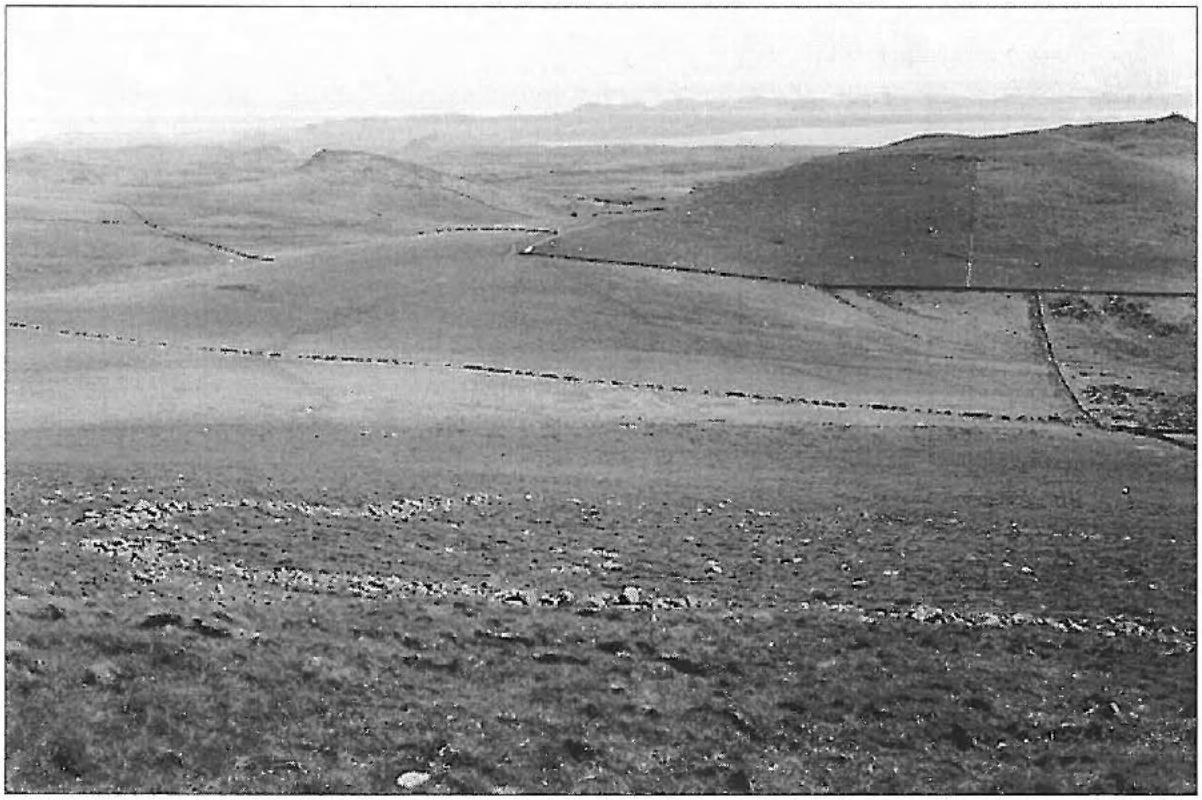

Plate 4: Unclassified curvilinear enclosure within unimproved upland, in foreground. Ploughed and reseeded improved upland in background. Clynnog, Caernarfon, July 1996.

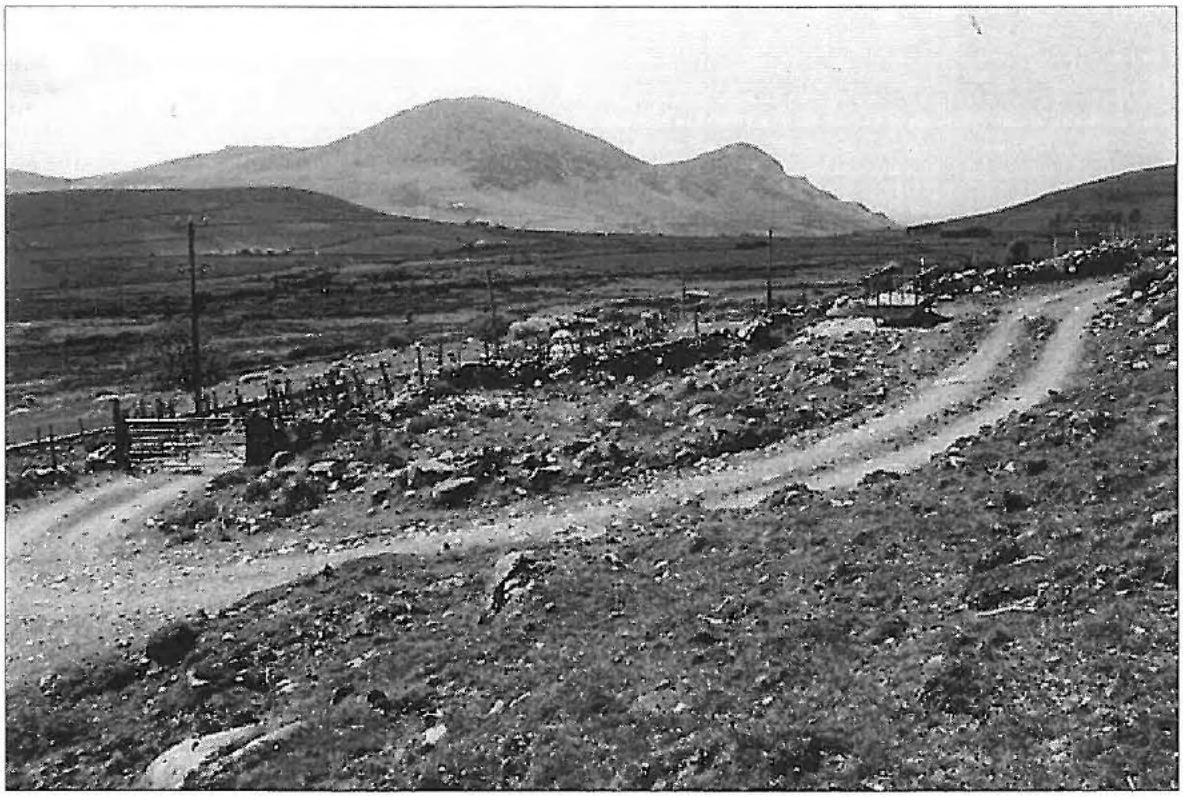

Plate 5: Large round hut with orthostatic inner and outer facing, suffering occasional intensive cattle trampling. Llanaelhaearn, Caernarfon, May 1996.

Plate 6: Nucleated, unenclosed hut group with associated yards, suffering intensive seasonal cattle trampling. Llanllyfni, Caernarfon, April 1996.

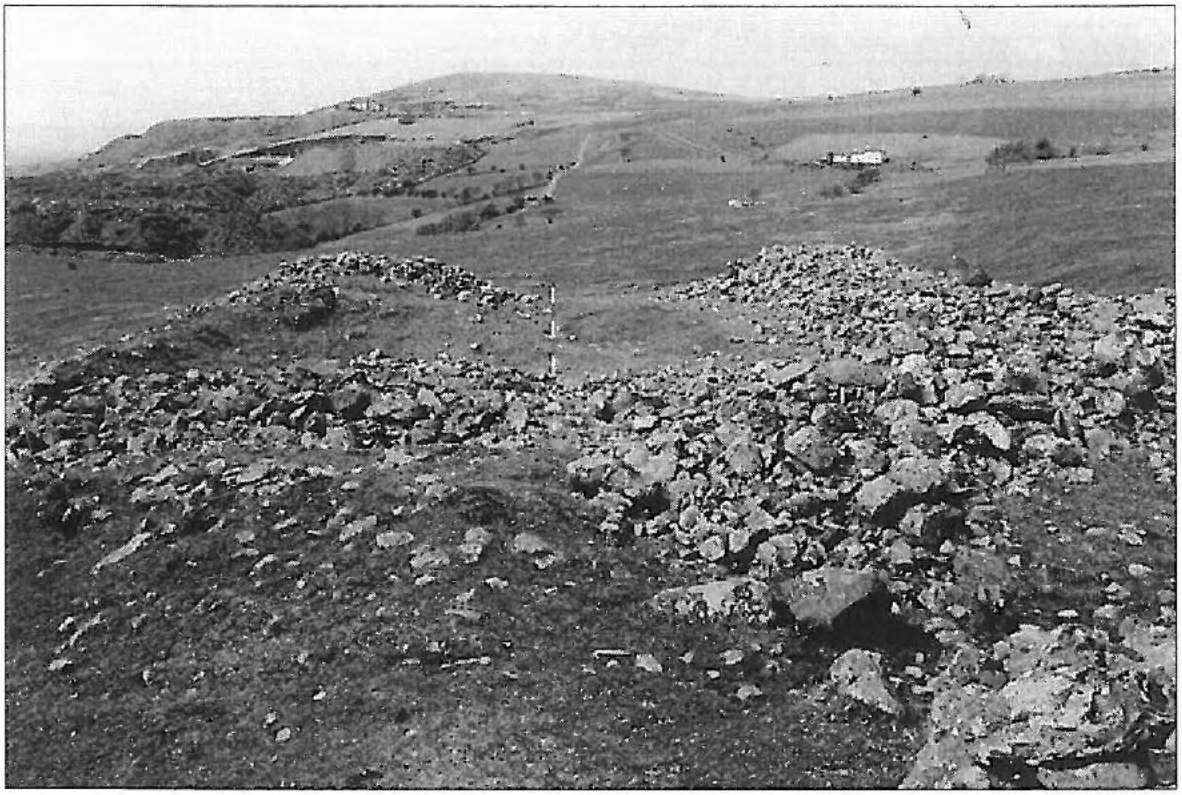

Plate 7: Single, enclosed round hut being obscured by continued clearance dumping.
Llandwrog, Caernarfon, April 1996.

Plate 8: Nucleated, unenclosed group of three round huts, isolated within cleared and improved field.
Clynnog, Caernarfon, February 1996.

Plate 9: Single round hut, with contemporary preserved land surfaces, exposed and eroding at the edge of a reservoir, the level of which has fallen due to drought. Ffestiniog, Meirionnydd, October 1995.

Plate 10: Round hut within enclosed hut group with statutory protection. Llanfairfechan, December 1995.

Plate 11: Large round hut (partly rebuilt as sheepfold) within forestry plantation, in the background, and another, in an unplanted area, in the foreground. Dolwyddelan, Aberconwy, October 1995

Plate 12: Large round hut, part of a well-preserved enclosed hut group within old deciduous plantation. One tree, growing on the hut has fallen, badly damaging the hut wall. Llandegai, Caernarfon, January 1996.

APPENDIX 1

THE SURVEY METHODS

The survey aimed to visit all known sites of early settlement type and not to search for new sites although inevitably a few were discovered during the course of other visits. Initial identification of sites to be visited was carried out by query of the computerised database of the Sites and Monuments Record. A 'Primary Index' was then assembled which included a summarised description, references, copies of previous descriptions and plans together with a 1:10,000 scale location map for each site. The database comprised 1059 sites, later extended to 1097, of which a number were recorded only as 'settlement' or 'enclosure' but with no certain evidence of hut circles. Settlements identified in the SMR as 'defended' that is mainly in hill top locations and with large enclosure banks, were excluded from the survey. Other enclosed settlements, sometimes on low hilltops or promontories, which may have had some defensive function but which did not seem to be *primarily* defensive were included in the survey.

The methods of the survey were developed in the course of a pilot study during 1994 (GAT Report No. 105). This involved visiting all the known sites in eight OS 1:10,000 map squares, two in each of four widely separated and rather different topographic areas:

1. Ynys Mon (Anglesey), lowland pasture.
2. Llanddeiniolen, Arfon District, Caernarfon, marginal hill pasture.
3. Aberconwy, West of Conway Valley, upland rough pasture.
4. Ardudwy, Meirionnydd, a mixture of lowland and hill pasture.

These areas included 94 sites, which comprised about 10% of the entire database.

During the following year a considerable block of new sites were accessed to the SMR comprising mainly sites extracted from the recent RCAHM (W) funded Upland Surveys and from the Snowdonia National Park archaeological database. As a result, in the second year, the database was extended by an estimated further 141 sites which on detailed examination of the records rose to 178 and these were visited in the summer of 1996. About 50 further known or possible sites were also identified which had been added to the SMR over the previous two years, including sites identified from aerial photographs and some identified in the course of the hut group survey itself. The final total was 1327.

The field visits involved a description of each site together with a sketch plan (where a sufficient description and plan did not already exist) accompanied by photographs. The visit also involved completion of coded entries and written comments on two survey forms A and B. Form A (see Appendix), covered Description, Condition and threats, Access and presentation and Management recommendations. Form B, comprised an assessment of monument value according to statutory criteria (see GAT 1994).

For the first form, the categories of information were mainly numerically coded for ease of entry into the database while for the second form the categories were scored in a very broad way as 1, 2 or 3, corresponding to Low, Medium or High.

The database was sorted into OS 1:10000 map squares and these were used as the basis for all organisation of fieldwork and records. An A4 map at 1:25000 scale was made for the area of each 1:10000 grid square and the identified sites to be visited were plotted on each map. This allowed planning of daily itineraries to avoid duplication of sometimes time consuming access walks. In many cases one or two sites might lie in a remote situation and, together with the time for the approach drive and walk, the visit might take up a whole day. In other cases a number of sites in the same general area could be visited and a group of four or five might be included in one traverse in the same day. This number would be considered a reasonable sized group to plan for a daily itinerary but the number actually achieved could vary from nil where a single remote site could not finally be located at all, up to a maximum of seven where a number of sites lay within a few minutes walk of each other. Overall the visit rate averaged slightly fewer than three per day. The time spent actually at each site depended on the complexity of the monument but varied from twenty minutes to one hour. Overall the time spent on travelling to the area, locating owners, walking to and locating each site accounted for around half of all the time.

Daily visits were recorded by a coded list that could be entered onto the database before all the main site records. This allowed query of the database to print out catalogues, allow a check on progress and avoid possible

duplication of visits when several different field workers were involved. The codes used were as follows:

The photographic record comprised colour prints and colour transparencies of every site with at least four shots for any site which appeared to be of schedulable status. Both print and transparency films were numbered as part of a single consecutive series to facilitate entry onto a database as part of a GAT archive identified by Project Number/ Film Number/ Shot Number. Where possible all shots were taken in duplicate and in tandem so that print and transparency shot numbers corresponded. The print negative number was used as the base record for each shot.

In the first season 1994 Ynys Mon and most of southern Meirionnydd were visited. In the second season northern Meirionnydd, Dwyfor, Arfon and Aberconwy were visited. In 1996 the supplementary sites were visited.

The optimum time for visits was the period March-May when the bracken is at its minimum. However, it was not possible to fit all fieldwork into this period so some descriptive detail was inevitably lost and further visits were needed for assessment or photography.

APPENDIX 2

THE TYPES AND DISTRIBUTION OF SETTLEMENT, RECORDING CLASSES AND DEFINITIONS

1 Topographic Attributes

a. Slope class

1. 1 – 10°; 2, 10 – 20°; 3, 20 – 30°; 4, 30 – 40°; 5, 40° +

This is the slope of the land, from the horizontal, of the prevailing slope of the area on which the settlement lies. This may be different from that of the settlement itself because frequently a natural terrace, shoulder or knoll is utilised.

b. Aspect

N; NW; W; SW; S; SE; E; NE; L.

The general slope direction of the settlement. In some cases the settlement itself is built on a level area but nevertheless the surrounding land generally has some direction of slope or view. In some cases no particular aspect can be observed and so is recorded as L, level.

c. Stone Availability

1. Good - Surface stone plentiful in immediate vicinity.
2. Fair - Only occasional scattered occurrences of surface stone.
3. Poor - Some stone presence evidenced by field walls but otherwise not obviously present on the surface.

This is relevant to the type of built structures, for instance whether enclosure walls, requiring much stone, are less frequent in areas with less stone and whether wooden structures or earth banks might be used in relatively stone-free areas.

d. Land Use

1, Arable; 2, Improved pasture; 3, Rough Grazing; 4, Woodland/Scrub; 5, Forestry.

These simplified broad categories approximate to those used by R.S. Kelly for the Ardudwy Survey (Kelly 1982). Improved pasture is grassland that is managed; it may have been ploughed for reseeding or arable at some point in its history and so must have been cleared of stone.

e. *Topographic Type*

1. Hill/ridge top/promontory
2. Hill slope
3. Valley floor
4. Upland plateau/gentle slope
5. Lowland plateau/gentle slope
6. Coastal fringe

2 Archaeological attributes

a. Settlement Type

This used a simple classification following that of Gresham (1967) and Kelly (1983) which identified four main classes although these correspond only in part to the four classes used by the RCAHM.

0 Non-site - a site which turned out to be a natural feature
1 Single hut
2 Scattered hut settlement
3 Circular/concentric settlement

4 Nucleated/enclosed settlement
5 Unclassified
6 Non-hut circle site type

b. Settlement Sub-type

1. Single hut
1.1 Isolated
1.2 Possibly part of a widely dispersed settlement
1.3 Probable outlier to a scattered group
1.4 Probable outlier to a nucleated/enclosed group
1.5 Probable outlier to a circular/concentric settlement

2. Scattered hut settlement
2.1 Loosely grouped
2.2 Dispersed
2.3 Outlier to nucleated/enclosed group

3. Circular/Concentric
3.1 Circular
3.2 Concentric

4. Nucleated/Enclosed
4.1 Rectangular/polygonal enclosure
4.2 Curvilinear enclosure
4.3 Set within 'yards' rather than deliberate enclosure
4.4 Unenclosed but nucleated
4.5 Incomplete/eroded/unclassifiable

5. Unclassified
5.1 Rectilinear
5.2 Circular/sub-circular

c. Integrity

The completeness of the settlement as shown by the lack of break in enclosure or intrusion of later features, fields field walls, sheepfolds etc. This record is needed because the form or size of the settlement may not be usable for analysis if the remains are only partial.

1. Complete
2. Incomplete
3. Destroyed

d. Curvilinear Enclosures Present

Recording presence of irregular 'wandering wall' fields or paddocks normally without evidence of lynchetting (terracing as a result of cultivation). The type of enclosures referred to in RCAHM type II.

e. Terraced Fields Present

Recording the presence of fields with evidence for lynchetting - showing that cultivation took place.

f. Medieval Long Huts/Platform Huts Present

Recording the presence of later, but possibly chronologically associated, huts nearby - within *c.* 250m - which could show continuity of settlement.

g. Number of Huts/Rooms within Settlement

3. Individual hut attributes

a. Structural Type

Recording the visible evidence of the hut walls. This field records the type of visible archaeological remains and does not necessarily record the original structural type i.e. an originally faced wall may be visible as only a grassy bank.

1. Crop mark
2. Platform or scoop
3. Bank, grassed over
4. Rubble bank
5. Large boulder-built wall
6. Laid, faced wall
7. Orthostatic slab or boulder faced wall

b. Shape

The shape of the internal space

1. Circular
2. Oval
3. Sub-circular
4. Sub-oval
5. Sub-rectangular
6. Square
7. Rectangular
8. Playing card shape (rectangular with rounded corners)
9. Irregular

c. Dimensions

Metres to nearest 0.5m. Diameter. Length. Breadth.

d. External Features

Porch. Annexe. Yard.

APPENDIX 3

SETTLEMENT CONDITION AND THREATS, RECORDING CLASSES AND DEFINITIONS

a. Condition

1, Bad; 2, Poor; 3, Fair; 4, Good; 5, Very good.

This provides a general impression of the state of preservation of the site. The classes used are equivalent to those used in the Cadw Ancient Monuments recording form AM 107 14.3.

b. Deterioration

1, None; 2, Slight; 3, Serious; 4, Obliterated above ground; 5, Totally destroyed above and below ground,

This records the decline in condition since the last field visit. The classes 1-4 are equivalent to the categories A – D used in Cadw surveys of SAMs (Davidson 1991).

c. Threat Type

1, Forestry; 2, Agriculture; 3, Building development; 4, Natural erosion; 5, Visitor; 6, Other.

This coded entry is also entered as a text description. The categories correspond with those used for the Ardudwy Survey (Kelly 1982) and are also compatible with those used in Davidson (1991). Davidson's survey found agriculture to be by far the most evident threat. As it can encompass several types of damaging activity e.g. stone-clearing and dumping, ploughing, ditch cutting and animal trampling, it needs to be monitored in more detail than other threats. Up to three types of threats may be recorded, A, B, C, set in order of importance.

d. Threat Value

1, None; 2, Slight; 3, Medium; 4, High; 5, In progress.

This assesses the current and future impact of the identified threat categories. It is obviously more difficult to recognise or put a value on a potential threat than to assess a threat already in progress, such as animal trampling. The existing consultation process normally covers commercial forestry particularly because much of Gwynedd has designated status as a National Park. Similarly, most private forestry planting takes advantage of Forestry Commission grant schemes that include care of archaeological remains in their conditions. Other development is normally covered by the requirements for planning consent or for environmental statements. Some assessment of the likelihood of development can be made by looking at proximity to existing dwellings because most development is by infilling or extension of existing built areas. More difficult to envisage are the likelihood of agricultural building, development of leisure facilities such as golf courses and the construction of new roads, services and wind farms. Natural erosion is normally slow and progressive so can be assessed in terms of the evident deterioration. Visitor erosion is similarly progressive and can also be measured in terms of the ease and availability of public access, for instance distance to roads and public rights of way. Agriculture is the predominant threat, encompassing various activities. It is also unfortunately the most difficult to assess because of its dependence on the individual decisions of landowners. For present purposes the suitability of an area for agricultural improvement or upgrading was assessed, using the criteria of accessibility and quality of the land.

For agricultural improvements the classes of threat are:

1. Nil - Inaccessible/rocky/steep/ high altitude.
2. Slight - Far from habitation and roads/marginal land e.g. wet, stony, high, which could perhaps be improved with difficulty.
3. Medium - Accessible by existing farm tracks and within enclosed fields with rough grazing which could be improved by e.g. stone clearing, drainage.
4. High - Higher grade land, pasture perhaps with evidence of former arable, for instance lynchetting. There may also be the evidence of other similar land in the area that has been improved.
5. In progress - Damage has already occurred or is still taking place.

e. Public Access

1, Nil; 2, Poor; 3, Fair; 4, Good; 5, Very good.

Public access to archaeological sites is a sensitive issue since most sites are in private ownership even where scheduled or lying close to a right of way. A considerable number of sites are in areas of open moorland or adjoin or are crossed by public rights of way and are therefore accessible. However, even public rights of way are often disputed and obstructed. The acceptance of footpath management as part of the County Council responsibilities, as well as involvement of the Snowdonia National Park and the Countryside Council for Wales, has meant considerable improvements in signing and recognition of paths and public provision of gates and stiles. Some sites are of such intrinsic interest that even though lacking any approach by public paths, landowners may find it difficult to prevent access. In this type of situation it might be desirable to seek management agreements to provide proper access to prevent wall trampling or gate opening.

For the purposes of the survey, accessibility has been assessed in relation to existing roads, car parking space, and rights of way footpaths. It is assumed that sites not accessible by rights of way footpaths might be visited after seeking landowners' permission but that the ease of access is thereby reduced.

1. Nil - Access denied by landowner or in dangerous, steep or marshy terrain.
2. Poor - Far from roads and parking and needing landowner's permission.
3. Fair - Far from roads and parking but accessible by existing public footpaths.
4. Good - Within 1 km of roads and parking and accessible from existing public footpaths.
5. Very good - Within 200 m of parking and with public footpath.

f. Presentation Value

1, Nil; 2, Poor; 3, Fair; 4, Good; 5, Very good.

The presentation value of a site is in many cases directly related to its condition but some types of site are easier to understand than others. It is a factor of interest for management purposes in formulating priorities for access, producing interpretative guidebooks or land management agreements. It is also a factor that can change, like, *Condition,* if damage occurs.

The classes 2 - 4 are equivalent to 'viability', classes 0-2 as used in R.S. Kelly's Ardudwy Survey.

1. Nil - Not visible.
2. Poor - Remains mutilated or-hidden.
3. Fair - Remains visible but not easily understood.
4. Good - Remains visible and easily understood by layman.
5. Very good - Remains obvious and impressive.

g. Conservation Status

This suggests a very broad valuation of the settlement remains with regard to appropriate future conservation. It relies on a personal assessment rather than a formal 'scoring' of particular criteria. Such a formal assessment of monument values will be carried out as a separate task. Conservation status 2, 3 and 4 can be equated with the terms 'local', 'regional' and 'national' importance as used in mitigation strategies for environmental assessments.

0. Non-site - natural feature.
1. Remains negligible or none surviving.
2. Remains preserved but not meriting scheduling.
3. Possible future scheduling.
4. Proposed new scheduling.
5. Already scheduled.

h. Nature Conservation Value

1, Nil; 2, Slight; 3, Fair; 4, Good; 5, Very good.

This does not normally enter into the archaeological record or into the criteria for scheduling but is included in the monument evaluation procedures proposed by the English Heritage Monuments Protection Programme (MPP). Natural history and archaeology have considerable relevance to each other in terms of historic land use. Archaeological sites often lie undisturbed for long periods and provide refuges for flora and fauna within farmed, forested or otherwise developed landscapes so nature conservation management plans routinely include consideration of archaeological and historic aspects. The relationship is more significant where whole areas are scheduled and are subject to management agreements covering types of cultivation or grazing. On the other hand, nature conservation designations, normally carried out on larger areas of land can be of benefit to archaeology, by protecting monuments or perhaps more ephemeral features such as field systems within SSSIs or nature reserves. Nature conservation and archaeology both have a historical dimension and interpretation needs to take them both into account. The simple classification used here, lacking specialist knowledge, is based on the amount of vegetation cover on site in comparison to the surrounding area. If there is little difference from the surrounding area then the nature conservation value is slight. On the other hand a monument in care with all scrub removed and neatly mown, may have less nature conservation value than the surrounding area.

i. Archaeological Record and j. Archaeological Response

These are complementary and record the existing archaeological response/s that has/have been previously carried out (the *Archaeological Record)* and any recommended response for future work (the *Archaeological Response).* These are graded in terms of low to high level, depending partly on provision of a usable basic record, partly on any statutory conservation measures and partly on any perceived deterioration or threats. It is suggested that every site, for proper inclusion in the SMR, needs at least the lowest level of response (apart from inclusion in the record in the first place) this being a site visit, description, sketch plan and photograph. It is further suggested that any site included in the schedule of ancient monuments should have at least an outline survey, and preferably a full survey, both to understand the site and to allow delineation of the legal boundaries. Any site that is seen to have deteriorated or to be under threat might be recommended for evaluation.

0. No further action envisaged at present time.
1. Visit, describe, photograph.
2. Sketch plan.
3. Outline survey.
4. Full survey.
5. Off site evaluation, documentary, artefact study, aerial photography.
6. On site non-intervention evaluation, geophysics, surface collection, environmental sampling.
7. On site intervention evaluation, trial excavation.
8. Limited area research excavation.
9. Full research and rescue evaluation.

k. Management Response

This comprises curatorial measures that are different 'types' of response rather than 'levels' of response.

0. No further action.
1. Landowner contact, information sheets.
2. Land use or designation documentary enquiries.
3. Scheduling.
4. Monitoring visits.
5. Management agreements.
6. Physical conservation measures.
7. Guardianship.
8. Publicity, Access, Interpretation measures.

Archaeology and Conservation: Figure Captions

1. Examples of early hut circle settlement excavations: top, Trefdury, Ynys Mon, bottom, Porth Dafarch, Ynys Mon.

2. Examples of hut circle settlement types: top, Scattered, dispersed settlement, bottom, Concentric enclosed settlement.

3. Examples of nucleated/enclosed hut circle settlement: top, rectilinear enclosure, bottom, curvilinear enclosure.

4. Examples of nucleated/enclosed hut circle settlement: top, nucleated and set within 'yards', bottom, nucleated but not enclosed.

5. Distribution of all recorded hut circle settlement in Gwynedd

6. Distribution of Type 1: Single hut circle settlement.

7. Distribution of Type 2: Scattered hut circle settlement.

8. Distribution of Type 3: Circular/concentric enclosed hut circle settlement.

9. Distribution of Type 4: Nucleated/enclosed hut circle settlement.

10. The relationship between settlement location and altitude.

11. The relationship between settlement location and topographic position.

12. The overall number of identified huts of each settlement type and the relationship to altitude.

13. The relationship between hut diameter and settlement type.

14. The relationship between hut circle size and altitude.

15. The distribution of hut circle settlements with threats of medium value.

16. The distribution of hut circle settlements with threats of high value.

17. The distribution of hut circle settlements with threats in progress.

18. The distribution of destroyed hut circle settlements.

19. Deterioration of all hut circle settlements comparing lowland with upland.

20. Threats to all hut circle settlements comparing lowland to upland.

21. The major land use recorded around each settlement as a proportion of all settlements.

22. The major land use recorded around each settlement as a proportion of all settlements within each district.

23. Examples of threats to hut circle settlement: top, Reservoir encroachment, Llyn Morwynion, Ffestiniog; bottom, Forestry road encroachment, Rhyd, Llanfrothen.

Table X Occurrence of different hut circle settlement types by altitude (metres OD)

Settlement Type	0 - 100		101 - 200		201 – 300		301 – 400		401 – 500		501 +		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Total
Single hut	28	9	83	27	97	31	71	23	26	8	3	1	308
Scattered group	12	8	21	13	42	26	62	39	19	12	3	2	159
Circular/concentric	3	16	12	63	3	16	1	5	-	-	-	-	19
Nucleated/enclosed	103	28	121	32	104	28	36	10	7	2	2	1	373
Unclassified	17	28	19	32	11	18	9	15	4	7	-	-	60
All hut sites	163	18	256	28	257	28	179	19	56	6	8	1	

Table X Occurrence of different hut circle settlement types by topographic location (Note that defensive sites were excluded from the survey and the figures are based on a 25% sample of the database)

	Topographic type												
Settlement Type	Hill top/ridge		Hill slope		Valley floor		Upland Plateau		Lowland Plateau		Coastal Fringe		
	1		2		3		4		5		6		
Single hut	3	4%	36	44%	5	6%	9	11%	10	12%	18	22%	81
Scattered group	2	7%	15	52%	2	7%	1	3%	4	14%	5	17%	29
Circular/concentric	5	31%	8	50%	-		-		2	12%	1	6%	16
Nucleated/enclosed	16	12%	45	35%	7	5%	1	1%	48	37%	11	9%	128
Unclassified	3	30%	3	30%	1	10%	1	10%	2	20%	-	-	10
All hut sites	29	11%	107	41%	15	6%	12	5%	66	25%	35	13%	264