THE ROYAL COMMISSION ON THE HISTORICAL MONUMENTS OF ENGLAND

THE ARCHAEOLOGY OF DARTMOOR:

AN AIR PHOTOGRAPHIC SURVEY

A Report from the Royal Commission on the Historical Monuments of England to English Heritage (the Historic Buildings and Monuments Commission for England)

By G. Soffe
assisted by J. Edis, M. Watson and H. Cave-Penney

November 1985

NOTE:
This report accompanies the following documents:

1. 54, 1:10,560 Translucent Map Overlays depicting Archaeological Detail. (2.3. below).
2. Attendant translucent 'Window' Overlays showing existing SAM areas and recommended areas (2.11. below).
3. Attendant Coloured Dyelines (2.12. below).
4. 5, 1:50,000 Distribution Maps.
5. 3 Volumes of HBMC Input Forms and Lists (2.9., 2.10. below).

It should also be used in conjunction with the Sites and Monuments Register files and index map overlays at the Devon County Council (Exeter), which have been revised for Dartmoor by and during the course of this Project Survey.

ACKNOWLEDGEMENT:
I would like to thank Dr Rowan Whimster for his comments on an earlier draft of this report. (G. Soffe).

CONTENTS

Preface

"A Celtic map is a grand desideration"
T. Northmore: 'Of the ancient Dykes, or Division-lines on Dartmoor' 1825.

"Dartmoor, to the casual first-time observer, might appear to be a natural landscape …"
H. Harris: 'The Industrial Archaeology of Dartmoor' 1968.

The purpose of this report is to provide a brief introduction, guide and commentary to the project and the corpus of maps, lists and record forms which have been created over the period 1 December 1984 - 29 November 1985.

A summary of the archaeological background is followed by an outline of the objectives and methods of the project, together with sections and appendices defining the quality and limitations of the resulting evidence. The report concludes with a number of broader archaeological observations, although it must be recognized that the limited terms and resources of the project do not yet permit a definitive analytical assessment.

Recommendations to HBMC on individual monuments and archaeological areas are contained within appropriate input documents.

It must be emphasised that this project has been concerned explicitly with the mapping of archaeological evidence visible on air photographs. Archaeological data contained in existing records or derived from separate ground or air survey has not been included un less it can also be derived from this air photograph survey.

CHAPTER 1.

Introduction and Background

Background

1.1. The RCHME Dartmoor Air Photographs Project, commissioned by HBMC, has taken place against the background, and in some respects as a result of the most recent phase of archaeological investigation and research on Dartmoor. This has been carried out by a number of organisations and individuals on several fronts.

The Shaugh Moor Project

1.2. In an area of SW Dartmoor, outside the boundary of the National Park, a variety of monuments in the neighbourhood of Shaugh Moor was threatened with destruction from the expansion of china clay quarrying. This provided the opportunity for the Central Excavation Unit of DAMHB (now HBMC) to develop a research design for the region and to explore its archaeology over a 5 year period from 1976. This involved the ground survey and selective excavation of monuments in the Shaugh Moor area; in neighbouring areas of the Upper Plym Valley within the Dartmoor National Park, and in the South Hams District, the flatter coastal plain lying between the granite massif of Dartmoor and the English Channel coast to the south. The aim was to identify and investigate centres of past human activity and to relate these to physiographical features, palaeoecological trends and soil types.

The Plym Valley Survey

1.3. A major achievement of the Shaugh Moor Project was the broad survey and analysis of visible remains - relating principally to middle and late Bronze Age settlement in the Plym Valley. This work, undertaken in 1979 and 1980, involved the field survey and mapping of monuments at a variety of scales. Air photographs taken by the RCHME Air Photographs Unit up to 1979 were used as an aid to fieldwork. The principal monument types investigated were Bronze Age hut circles, related settlement enclosures and the long low stone banks or ‘reaves’ which are now recognized as dividing Dartmoor into a number of contemporary ‘territories’. The latter are characterized in the upper moorland Plym Valley by the Eylesbarrow watershed reave, the terminal Saddlesborough main reave and the Willings Walls

contour reave (Fleming and Collis, 1973; Collis, 1978; Fleming, 1978; Smith et al, 1981; Balaam et al, 1982).

In addition to the remains of prehistoric settlement, husbandry and agriculture, a variety of prehistoric funerary, ceremonial and ritual monuments were surveyed in the Plym Valley. These consisted of cairns, barrows and cists; alignments of standing stones and stone circles, mostly earlier in date than the surrounding settlement evidence.

The present Dartmoor Air Photographs Project and the Plym Valley Survey should be seen as directly complementary, in that both cover the same ground. Although the Plym Valley represents only a small proportion of the total area of Dartmoor, it does contain a very high concentration of all the types of monument referred to above. Moreover many of the examples are of exceptional quality. A number of the more unusual forms of settlement on Dartmoor forms (such as agglomerated enclosures) and best-preserved stone alignments and circles also occur in this region. Much of the Plym Valley Survey data is summarized in published maps (c.f. Balaam, et al, 1982) and unpublished microfiche maps and plans deposited in the National Archaeological Record. These have been extensively consulted during the present project and found to be valuable not only with regard to the Plym Valley itself, but as a stimulus in interpreting similar evidence in other areas of Dartmoor.

Shaugh Moor - results

1.4. In terms of fieldwork, the investigations carried out by DAMHB on Shaugh Moor itself were more restricted, but a wealth of useful archaeological data was produced in the face of the threat from china clay quarrying. The principal monuments investigated included the Saddlesborough main reave, forming the ‘spine’ to the visible settlement pattern in that area. Excavation indicated two phases, the first a ‘post and panel’ fence, the second, a low stone wall. A similar structure sequence has been recorded at Holne Moor by Fleming. The first phase was dated by radiocarbon to 1390±90 bc., while the second was thought to be no more than 200 years later. The Saddlesborough reave is the terminus to a parallel reave system bounded on the E by the Wotter reave. In 1977-8 a stone walled enclosure (site 15, containing 5 hut circles), was totally excavated (SX565648, not scheduled,

Wainwright and Smith, 1980). Earlier timber round houses were found within it and phosphate analysis indicated that the enclosure had not served as a pound but had functioned as a protected zone for domestic buildings in an area of pasture. As well as the excavation of 6 cairns dating about 200 years earlier than the settlement evidence, peat deposits were sampled. These indicated that the main period of prehistoric settlement on Shaugh Moor was the middle of the second millennium BC. This was contemporary with greatly increased clearance of deciduous woodlands, representing a preponderance of pastoral farming, although there appears to have been a considerable local variation in this respect. A similar situation has been recorded for Holne Moor by Fleming. The Bronze Age economy seems in general to have been one based on pastoralism and evidence of cattle and sheep is provided by hoof-prints in a sealed land surface. Some evidence of limited cereal cultivation comes from small plots within enclosures that have been carefully cleared of clitter. The absence of hearths in two houses of enclosure 15 has been taken as an indicator of transhumance, although early excavations of other settlements often mention hearths and abundant charcoal. Although there is not yet much direct archaeological evidence for their exploitation, important economic resources possessed by Dartmoor and its hinterland in the Bronze Age were accessible deposits of alluvial tin and some copper. These were extensively exploited in historic times, leaving ample field evidence (5.7. below). This may have been a factor in the siting of individual settlements in the Plym Valley and elsewhere on Dartmoor. Other activities attested by the archaeological record are the manufacture of woollen textiles and the exploitation of woodlands for boundary fences, houses and enclosures.

The Dartmoor Reave Project and other university based work.

1.5. Fundamental to a broader consideration of settlement on Dartmoor is the work undertaken by John Collis and, more particularly, Andrew Fleming, both of the Department of Prehistory and Archaeology, Sheffield University (e.g. Fleming, 1978, 1984, 1985). This has demonstrated that the reaves of Dartmoor are of prehistoric date and form a logical pattern of territorial land division. Each territory was based on the upper part of a river, where the bulk of the enclosed settlements occur. Fleming has suggested that these valley zones, which are separated by watershed reaves, belonged to different communities in the Bronze Age, and that they formed areas of grazing land. Each territory appears to have one large parallel reave system and is separated

by contour reaves from grazing land presumed to have been shared by a number of territories. This analysis, based on fieldwork and the study of RCHME air photographs has since 1976 been integrated with a programme of excavation at Holne Moor producing structural and chronological data comparable to that from the Shaugh Moor Project. Fleming has also recently embarked on the detailed survey of a number of parallel reave systems commencing with Holne Moor and the Dartmeet system.

Elsewhere, the Department of Archaeology, Edinburgh University, has been responsible for the detailed survey of settlement features in the SW of Dartmoor. Microfiche records of this project, begun in 1982, have been deposited by Dr Roger Mercer with the National Archaeological Record. Fleming's published work and Mercer's records are of considerable value and have been taken into account throughout the present programme of air photograph interpretation. It has nevertheless been found inappropriate to incorporate this and comparable field survey evidence directly in to the present cartographic survey which is explicitly and unambiguously a record of 'air photograph features'. Because each of these surveys was carried out with its own special objectives and methodology, a number of significant differences in interpretation are clearly apparent. Although it is highly desirable that these should eventually be resolved, their definitive reconciliation fell beyond the resources of the present project.

NAR and SMR

1.6. In addition to the above surveys there are two general Dartmoor archives that should be seen as the backbone to the present project. The first is the archive of record cards and maps originally compiled by the Archaeology Division of the Ordnance Survey and now forming part of the NAR (RCHME). The second is the Devon County Council Sites and Monuments Register (SMR), held at County Hall, Exeter. The latter includes data collected in the course of many years of fieldwork, chance discovery and excavation within the county. The Devon SMR has in recent years evolved into a very efficient data system, its information being incorporated within a computerized index of individual site/monument records, supported by numbered overlays to 1: 10560 maps. Although the archive for Dartmoor already contains several thousand individual records, it is accepted that there are still substantial gaps in knowledge, particularly with regard to woodland and small enclaves of unimproved

grassland. It is also far from complete in its record of medieval and more recent industrial remains, and, most seriously, it has no adequate description or delineation of ancient field systems.

The development of the SMR, coupled with the appointment of an archaeologist to the National Park Authority staff, has enabled all planning applications since 1979 and all grant-aid agricultural operations since October 1980 to be monitored for archaeological implications. It has also helped the NPA in establishing positive conservation schemes and management agreements.

A major proportion of the present project's resource has involved the interrogation of air photograph data and its input to the SMR (see chapter 2). This has, with related work, taken up 43% of the available project time and it should be noted that discussion and a cross-flow of information between RCHME and Devon-based staff has played a major role in guaranteeing the success of the project. We are particularly grateful to the Devon County Council archaeologists Simon Timms and Ms Frances Griffith and their staff for their friendly and stimulating co-operation in this task.

The Dartmoor National Park: Conservation and Threats

1.7. The majority of the survey area falls within the Dartmoor National Park, occupying 365 sq. miles of country and containing most of the high granite mass of Dartmoor. Since its inception, the National Park Authority (NPA) has been much concerned with Dartmoor's archaeological heritage, preserving within its boundary one of the finest archaeological landscapes in NW Europe. The present project has benefited greatly from the active interest, co-operation and help of the NPA's former archaeologist Dr Tom Greeves, particularly in the field of industrial remains. The NPA's appreciation of the importance of air photograph evidence in the interpretation of Dartmoor's archaeology has been recently reflected in the publication of The Archaeology of Dartmoor from the Air (Greeves, 1985) which includes a number of photographs taken in recent sorties by the Air Photographs Unit of RCHME.

The NPA has tended to see archaeology in terms of its overall policy of landscape conservation. It has been encouraged to conserve through cooperation and agreement with all interested parties on Dartmoor, not least the Duchy of Cornwall, whose

Dartmoor Estate occupies nearly a third of the National Park. One of the NPA's main preoccupations is the protection of the edge of the high moor from agricultural operations in marginal areas. Also of concern are slow natural changes, and those due to neglect of traditional practice. The encroachment of bracken and grass on heather and gorse are also evident but not fully understood and are therefore the subject of a current study and monitoring exercise by the NPA.

Another important problem for the NPA, and one intimately associated with Dartmoor's archaeological resource is the 'improvement' by local farmers of 'newtake' or enclosed moorland. Today, grant-aided proposals are notified to the NPA by statute and the National Farmers' Union and Country Landowners' Association agree informally to notify proposals to convert moorland. This machinery is intended to lead, in appropriate circumstances, to protection by management agreement, with compensation. The NPA considers the newtake lands to be the buffer edge of the wild high moor, fluctuations in their fortunes probably remaining acceptable in the long historic term. This philosophy nevertheless presents major problems with regard to the preservation of archaeological field monuments which once destroyed cannot be 'resurrected' or reclaimed (see below).

A further issue for the NPA and for the archaeology of Dartmoor has been, and will continue to be, the military use of N Dartmoor by the Ministry of Defence. The NPA draws attention to the incompatibility of military use and National Park values and thus continues to campaign for military withdrawal. It has been particularly concerned in seeking a replacement for the willsworthy Range (SX58SW) and the Ringmoor South dry training area (SX56NE). The risk of damage to archaeological remains from military use of these high moor areas, although perhaps not so great as that posed by agricultural and extractive activity around the fringes, needs nevertheless to be emphasised. The present survey has indeed identified evidence of damage in several areas. With the aid of information provided by the project the NPA is publishing a 'Field Guide to Archaeology within the Military Training Areas'.

Yet another important factor concerning the NPA and Dartmoor's archaeology has been the modern management of woodlands and farmlands. Since 1977 there has been little change in the forest and woodland components of Dartmoor. The Centre for

Agricultural Strategy's report of 1980, proposing a large scale programme of afforestation and woodland rehabilitation, identifies the potential for future landscape change and damage to archaeological field monuments, although to date not much damage has ensued. Nearly 80% of the total acreage of Dartmoor's broadleaved woods are unmanaged and in decline, but since 1977 some 30,000 trees have been planted under the NPA Tree Scheme. Farmland improvement grants from the Ministry of Agriculture are notified at application stage to the NPA but farmers remain free to proceed without grants if they so wish and there is no guarantee that the ministry will support the case of NPA or any other body. Since 1980 some 723 notifications have been received by NPA, of which 5 were objected to outright. The appointment of a NPA Agricultural Landscapes Officer and involvement in the grant system has begun to make it clear which elements of Dartmoor are at risk, and from which types of operation. Principally, it has exposed the vulnerability of landscape elements such as walls, hedges and hedgerow trees, the removal of which does not normally attract grant-aid and which cannot therefore be influenced by the NPA. Many of these elements form integral parts of Dartmoor's historical heritage or can be directly paralleled in the archaeological record. The archaeology is equally vulnerable. A particular difficulty concerns the reluctance of some modem farmers to maintain traditional practices of agricultural land management.

The NPA has also been concerned about the built environment of Dartmoor. The HBMC has recently begun a review of the area's listed building schedule and the NPA has been involved in encouraging grant aid for the maintenance and repair of valuable buildings and industrial remains. One medieval long-house has been purchased by the NPA. The present project has made no attempt to record or map roofed buildings from the air photograph evidence, although some examples are referred to as parts of larger archaeological complexes. Unroofed, ruined structures have been recorded. The NPA, with voluntary assistance has been able to carry out a detailed archaeological survey on Forestry Commission land and within forests owned by the South West Water Authority. In the former it has already achieved protection for sites discovered and in the latter it is working to the same end. Archaeological fieldwork on Dartmoor has encouraged the NPA to the conclusion that protection, conservation and interpretation should be "based upon the concept of an archaeological landscape rather than the collection of individual sites". (Dartmoor N P

Plan 1983, 19). It is to be trusted that the present project, particularly in the presentation of its mapped data, will remove any doubts about this concept for ever.

Bodmin and West Penwith

1.8. Any survey of Dartmoor's archaeology should be seen in the context of the other main granite uplands of the SW Peninsula; Bodmin Moor, Hensbarrow, Carnmenellis, West Penwith (Land's End), and the Scilly Isles. Two of these areas, Bodmin and West Penwith, have, and are currently being surveyed on behalf of the Cornwall Committee for Archaeology (CCA, formally CCRA), HBMC, RCHME and the National Trust. West Penwith has recently been the subject of an emergency scheduling programme by the HBMC (1984-5) who have also been working with the Cornwall Archaeology Society in the Lizard on fieldwork and excavation. Of particular significance, the Air Photographs Unit of RCHME has conducted a major photogrammetric survey of Bodmin Moor at a scale of 1:2500. This air survey work, carried out over the period 1978-83, has been backed up by ground fieldwork by CCA and RCHME survey staff, a task which continued up to July 1985. The present one-year air photograph project for Dartmoor should be seen against the background of these major efforts in comparable environmental zones. At the same time, there are marked differences in basic approach, and it cannot be too strongly emphasised that the present project should be seen, first and foremost, as a rapid overview of all Dartmoor's field monuments, designed to serve as a foundation and guide to more thorough work in the future.

Statutory Protection of Monuments on Dartmoor

1.9. The Ancient Monuments and Archaeological Areas Act (1979) greatly strengthened the protection afforded to scheduled monuments in England and Wales and provided a new basis for management agreements. Unfortunately only a relatively small proportion of Dartmoor's wealth of field monuments has been scheduled - some 430 out of the many thousands identified in the SMR prior to the commencement of this project. Since 1977, fewer than 25 sites have been scheduled, 301 though as a result of the DAMHB/HBMC survey (1.3. above), the Upper Plym Valley has become one of the few Guardianship Areas protected under the 1979 Act (for extent see Distribution Map and appropriate window overlays). This area corresponds approximately to National Trust property to the S of the River Plym.

In recent years, higher levels of grant available to local farmers (1.7. above) has made extensive moorland grazing 'improvement' work a considerable threat to archaeological sites and landscapes. Archaeological destruction has presumably taken place over the past two years although it has not been possible to monitor this closely within the present project. This improvement process normally involves boulder removal, ploughing or rotavating and final re-seeding and harrowing. In addition there has been the threat of destruction through military training activity (which will only be partially alleviated through a programme of archaeological education by the NPA), and the risk of destruction or mutilation in the course of modern mineral extraction processes. It has become clear, particularly through experience in West Penwith and elsewhere, that reactive survey and scheduling cannot easily keep pace with the potential rate of destruction and is not the answer to the problem. In addition it had been recognized that the SMR data base needed to be upgraded with regard to certain categories of field monument before it could be used as a reliable basis for the definition of scheduling policy and the allocation of resources for conservation. A major handicap, in advance of completion of the present survey has been the lack of an overall cartographic record of the archaeology of Dartmoor.

Project Commission

1.10. Accordingly, HBMC commissioned the APU of RCHME to carry out a rapid air photograph survey of Dartmoor and to identify those sites and areas which might be of sufficient importance to be considered by HBMC for scheduling. During the summer of 1984, three experimental 1:10560 translucent map overlays were prepared for discussion purposes: for map sheets SX56NE (Sheepstor and the Upper Plym Valley), SX66NW (the Upper Erme Valley and Naker's Hill), and SX67SE (Holne Moor and Dartmeet parallel reave systems). These were considered to include a cross section of the field monument types and the land use/vegetational types encountered on Dartmoor.

Seminar

1.11. The experimental map overlays and other discussion papers were the focus of a seminar held by RCHME to discuss the proposed project with various interested parties to encourage constructive comment. The seminar was held on 14 November

1964 and was attended by J Hampton, G Soffe, J Edis, M Watson, H Cave-Penney and D Bonney for RCHME; D M Evans, R Smith, N Balaam for HBMC; K Smith (formerly of DAMHB Central Excavation Unit), F Griffith (DCC SMR), T Greeves (NPA), N Johnston (CCA), A Fleming and J Collis (Sheffield University). Amongst other points, particular stress was given to the importance of Dartmoor's industrial remains and the need for their depiction in some detail. It was also requested that where there was evidence for the 'fossilization' of parallel reaves and other components of ancient field systems in the modem landscape pattern (i.e. the modem field boundaries mapped on the current as 1:10560 and 1:10,000 maps), these should be indicated on the map overlays. The RCHME also indicated that in addition to providing the present confidential report and its associated cartographic and documentary records they would in due course welcome the opportunity to prepare the archaeological results of the survey for wider publication.

CHAPTER 2

Outline of Objectives and Methods

Principal Objectives

2.1. The principal objectives of the project has been to produce a series of 54 map overlays for the survey area, at a scale of 1: 10560. This area consists of the Dartmoor National Park together with a portion of SW Dartmoor, not included within the Park boundary but attached to it and within the South Hams District. This part of the South Hams District, about 75 sq.km. in area, contains the archaeological landscapes of Shaugh Moor and Crownhill Down threatened by modern mineral extraction (1.2-4., 2.13.). The survey area was defined on a sketch map appended to the specification document and is depicted on the distribution maps incorporated within this report. All principal sources of existing aerial photography were to be used for the manual plotting of visible archaeological detail and all mapped data was to be integrated into the existing SMR.

Supplementary objectives have been to provide a limited preliminary analysis by site category of the final sketch plotted detail. This is described briefly in the present report and illustrated where appropriate in terms of distributions and densities of archaeological 'site types' (Chapter 5 & Distribution Maps 2-4). A distribution map of contemporary vegetation and land-use on Dartmoor has also been produced (Distribution Map 5). In fulfilment of its brief the project has identified, described and listed sites and areas which are recommended to HBMC for consideration in their proposed re-scheduling programme. These are accompanied by illustrated map overlays at 1:10560 for each of the 54 maps within the survey area (the 'window overlays'), together with a composite 1:50,000 Distribution Map (1) of existing SAMS and new recommendations.

The Project Team

2.2. The bulk of the work has been carried out by a project team of three, employed for 12 months from December 1984. Mr Jonathan Edis has been seconded from the full-time staff of the APU, RCHME, and Mr Mark Watson and Miss Helena Cave-Penney were appointed under the arrangements of a 12 month contract that expired on 29th November 1985. This work has been supervised and checked by Mr

G Soffe, also of the APU. A management panel was set up between HBMC and RCHME consisting of Dr G Wainwright or Dr R Smith for HBMC, Mr G Soffe (APU) and Mr J Hampton (Head of APU until his retirement in June 1985) who was replaced after 1 July 1985 by Dr R Whimster as Head of APU. The management panel met on 6 occasions and concerned itself with exchanges of information and agreement on criteria, conventions and terminology. It also closely monitored the progress of the project. Any variations in the project specification were in all instances the subject of discussion or written correspondence between members of the panel. We would like to record our especial thanks here to Miss Cave-Penney and Messrs Edis and Watson for their enthusiastic contribution to the work of the project.

Map Overlays

2.3. All 1:10560 map overlays were initially plotted in pencil as part of an interactive process of air photograph interpretation, involving simultaneous consultation of all suitable air photographic sources. Where difficulties of interpretation arose, these were resolved through discussion between team members. Cartographic transcription proved to be the most labour intensive and time consuming component of the project, taking up 280 of the 663 man-days available. As has been mentioned, surveys by DAMHB/HBMC and the Universities of Sheffield and Edinburgh were extensively consulted, but their data has not been incorporated wholesale into the present survey. On the contrary, it must be emphasised that the project has been concerned explicitly with the mapping of archaeological evidence visible on air photographs, and it was recognized that any attempt to merge information from separate ground and air surveys would, in the present state of knowledge, be unacceptably speculative.

In some areas overlays may show archaeological detail which does not seem to agree with that shown on the underlying 1:10560 map. On occasions this is because the Ordnance Survey archaeological detail is derived from defective late nineteenth-century survey of antiquities (for example, the Whittenknowles Rocks enclosure and hut circles on the west side of Drizzle Combe (SX5867, SAM571)). Alternatively, archaeological features plotted from the RAF or more recent RCHME air photographs may subsequently have been lost in areas of afforestation, consumed by quarrying (eg. Heddon China Clay Works at SX5760), or flooded by reservoirs (eg. industrial

features now under the Meldon Reservoir and prehistoric enclosures under Fernworthy Reservoir).

Cartographic style and conventions have been based on those used for higher-order photogrammetric air photograph transcription, the major inhibiting factors being the limits imposed by scale and the requirements to depict detail in a single colour (cf. Riley et al. 1985). For example, a thin black line may represent either a wall or reave, while a simple pecked line serves to define the outer limits of tin streaming activity. Elsewhere small circles indicate the observed presence of hut circles, but do not pretend to define their exact size or location on the ground. In the case of some very small monuments (eg. pillow mounds and trial pits) representation at 1:10560 scale can only be in the form of standard symbols. The range of conventions used for different classes of monument are listed separately below (3.9-10).

The speed with which this project has been executed may be attributed largely to the method of plotting that has been used. Every effort has been made to achieve reasonable metrical accuracy, particularly through the use of scaled optical projection techniques when using vertical photography. The lack of effective map control in many parts of Dartmoor has nevertheless presented problems, especially with regard to low level oblique cover taken for specialist archaeological interpretation.

Air Photographs

2.4. No attempt has been made to examine all existing aerial photographic cover of Dartmoor. This would have been impossible in terms of time and manpower. Instead, two principal sources were chosen on account of their availability and demonstrated quality. The first comprises complete vertical cover carried out by the RAF between 1945 and 1951. This photography, taken at the useful approximate scale of 1:10560, consists of c.1025 prints divided into a series of 53 runs with full stereoscopic overlap. They are largely of high quality, and although much of the archaeological detail appears very tiny at this scale, most features can be readily distinguished when viewed through a binocular stereoscope. Much of the archaeology is represented in the form of strong shadow marks, including a number of formerly well preserved monuments which have since been destroyed.

The other main source of air photographs was the specialist archive of the Air Photographs Unit, RCHME. Apart from a few photographs taken in 1953, most of the photography is low-level, near-vertical oblique, 70mm black and white cover taken from 1976 onwards. The photographs are divided into short runs with stereoscopic overlap. There are also complementary colour and false-colour infra-red transparencies taken on the same sorties. All this photography, comprising c.3000 separate frames, was commissioned and taken by the APU of RCHME. As part of the project RCHME indicated that it would be willing to undertake further flying to fill 'gaps' identified in the existing specialist cover. These 'gaps' were located in the course of the interpretative process outlined above and 'filled in' by special sorties flown by J Hampton and R Featherstone (APU) in the early months of 1985, prior to the advance of bracken growth on the moorlands. This supplementary cover comprises 553 frames. The APU cover has proved particularly useful in its detailed depiction of field monuments, in many cases allowing individual building stones and other minor structural features to be clearly distinguished. Nevertheless, some stone monuments, known from the existing field record, did not show up as well as might have been expected. Individual standing stones of stone alignments can often be located only by a reference to the tracks of walkers beside them. Small solitary cists are rarely seen, and the typically low mounds of Dartmoor round barrows and cairns are often masked or camouflaged by mottled clumps of gorse and bracken. To avoid ambiguity, monuments recorded in the SMR but not readily visible on the air photographs, have not been mapped. In addition it must be remembered that the most recent air photographic information for some parts of Dartmoor is up to 9 years old. As a consequence, it cannot always be relied upon as a record of current land use, preservation or destruction, particularly in marginal areas.

Archaeology Plotted

2.5. The original project specification indicated that "archaeological features are defined as all works of man or areas showing a significant effect of the works of man, excluding buildings, modern settlement, and modern boundaries where no prehistoric or medieval origin can be reasonably postulated". The project has conformed to this specification, with the exception of its inclusion of unroofed ruined buildings such as medieval long-houses and tin mills or blowing houses. It should also be noted that the overall focus of the project has tended to move away from an earlier concentration on

the more obvious burial or ritual monuments and early settlements of Dartmoor (c.f. Worth, 1967) and towards the depiction of these monuments in their wider, but previously neglected archaeological setting. In particular, it is hoped that the project will have helped to redress the balance by mapping and in many instances recommending for consideration for protection well preserved examples of field systems, reaves, parallel reave systems and industrial monuments previously ignored or judged too difficult to survey because of the dense vegetation cover or lack of available air photographs. By including at an elementary level the region's vast array of industrial features we hope that a more truly representative sample of Dartmoor's heritage will be protected.

A complete list of monument types, SMR Item Words and HBMC site types, together with their cartographic conventions, is given in Chapter 3 of this report.

Fieldwork

2.6. The project team made two field visits to Dartmoor in February and May 1985. They were in order to familiarize the team with a complete range of field monument types and to look at specific problem sites and areas. Crownhill Down was also visited in connection with the special survey undertaken of that area (2.13., Appendix 1). The visits were led by Dr T Greeves of the NPA and Ms F Griffith of the DCC. Dr R Smith joined the visit to Crownhill Down. The other areas visited were: the Upper Plym Valley with the prehistoric complex of Drizzle Combe, the Eylesbarrow mining complex (SX5968) and Ditsworthy Warren; the Willsworthy Range (SX5383), the Kestor and Shovel Down area (SX6585). This fieldwork accounted for 12 out of the total of 663 project man-days (fig. 1). We would like to thank Dr Greeves and Ms Griffith for their expert guidance on these visits.

SMR In put forms

2.7. A total of 221 man-days have been spent in the compilation of forms and related records for the Devon SMR, and a further 60 man-days was spent integrating this material into the SMR at Exeter. A major proportion of the project's resource (43%) has thus been involved in interrogation of existing records, and input of air photograph data into the SMR (fig. 1).

A standard input form for individual sites and monuments was designed especially for this project. An example is illustrated in Appendix 2. This has individual fields for parish (old and new), district (West Devon, Teignbridge W, South Hams), SMR Item Word, 8 figure National Grid Reference, and unique 1:10560 map identification number with the SMR Number. There then follow fields for description, key words and details of selected 'best' photographs.

At the bottom of each form are separate fields indicating scheduling potential and degree of perceived threat; these have been ticked or annotated as and when appropriate, as a guide to the compilation of the HBMC input forms (2.9 below). The categories chosen are based broadly on DAMHB/HBMC's own criteria, drawn up in 1984, for the insertion of potential schedules. These are:

(i) Survival/condition: the survival of the monument's archaeological potential both above and below ground is a crucial consideration and needs to be assessed in relation to its present condition and surviving features.

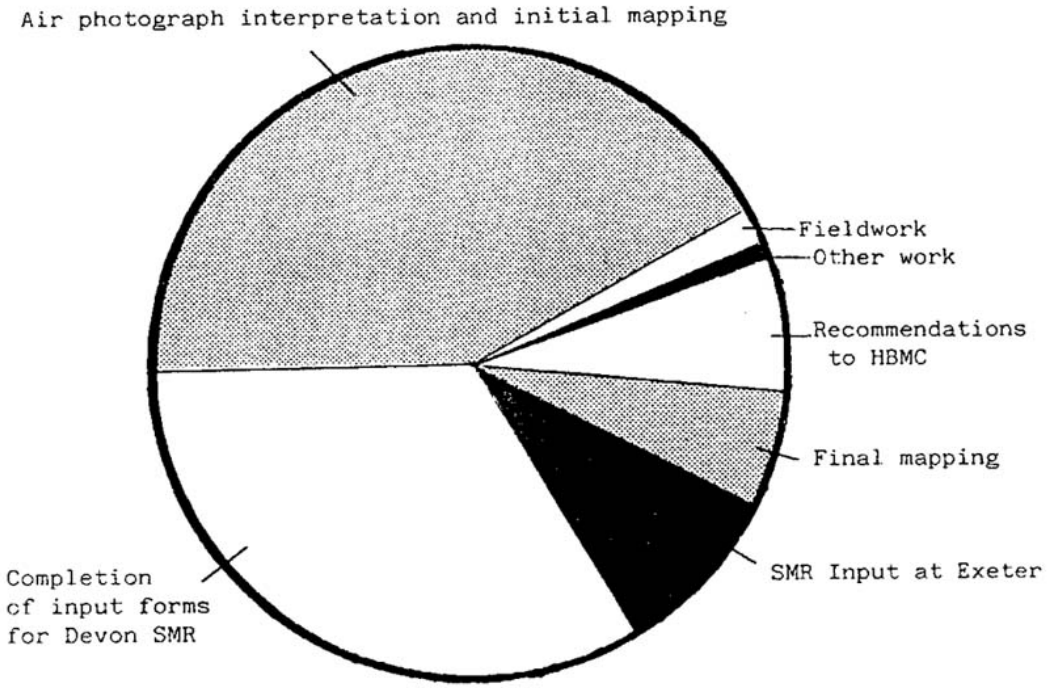
(ii) Period: it is important to consider for preservation all types of monuments that characterise a category or period and to schedule a representative sample.

(iii) Rarity: there are monument categories which in some periods are so scarce that all of them which still retain any archaeological potential should be preserved. In general, however, a selection must be made which portrays the typical and common place as well as the rare. For this, account should be taken of all aspects of the distribution of a particular class of monument not only in the broad national context but also in its region.

Fig. l.

DARTMOOR PROJECT

Breakdown of Resource in man/days



Number of man/days spent on project during period December 1984 to November 1985:-

Air photograph interpretation and initial mapping	280 man/days
Completion of input forms for Devon SMR	221 "
SMR input at Devon SMR, Exeter	60 "
Final fair drawing stage of mapping	40 "
Completion of recommendations to HBMC	45 "
Fieldwork	12 "
Other work	5 "
Total	663 "

(iv) Fragility/Vulnerability: Highly important archaeological evidence from some field monuments can be destroyed by a single ploughing or unsympathetic treatment; these monuments would particularly benefit from the statutory protection which scheduling confers. There are also standing structures of particular form or complexity whose value could again be severely reduced by neglect or careless treatment and which are well suited to protection by this legislation, even though they may also be listed historic buildings.

(v) Diversity: some monuments have a combination of high quality features - others are chosen for a single important attribute.

(vi) Documentation: the significance of a monument may be given greater weight by the existence of records of previous investigation, or in the case of more recent monuments, by the support of con temporary written records.

(vii) Group Value: the value of a single monument (which as a field system) is greatly enhanced by association with a group of related contemporary monuments (such as a settlement and cemetery) or with monuments of other periods. In the case of some groups it is preferable to protect the whole including the associated and adjacent land rather than to protect isolated monuments within the group.

(viii) Potential: on occasion the nature of the evidence cannot be precisely specified but it is possible to document reasons for anticipating its probable existence and importance and so demonstrate the justification for scheduling. This is usually confined to belowground sites rather than upstanding monuments.

Clearly it is difficult and even irresponsible to make recommendations based on some of these criteria from the evidence of air photography alone - for example, ‘documentation’ is unlikely to play an important part in our considerations.

Some indication of the quantity of different types of archaeological data fed into the SMR can be gathered from the following breakdown of input forms.

Broad categories by period/type	Number of Input Forms	% of Whole
Definite prehistoric sites	669	27.5
Definite medieval sites	209	8.6
Multi-period (ie field systems, undated etc.).	556	22.8
Industrial Sites	981	40.2
Military	12	0.6
Modern	8	0.3
Total:	2435	100.00

The number of forms for prehistoric and medieval sites must be a conservative estimate for many of these monuments are probably to be found in the third category of multi-period or undated sites.

The second stage of input involved the transfer of data from the original input forms to computer data-entry forms at the SMR offices, Exeter. This task has been performed at Exeter under the guidance of Ms Frances Griffith.

SMR Numbered Overlays

2.8. The SMR holds translucent overlays for each 1:10,560 map in its archive. These show by means of circled numbers the approximate locations of monuments and the sites of small finds. As part of the project's input to the SMR, the overlays have had new numbers added for new sites, while old numbers have been amended when sites already recorded have had to be divided up into smaller units.

The numbered overlays should be seen as a vital link between the map overlays and the SMR record forms, and are therefore an important component of the project's data package, copies being supplied by the SMR to RCHME and HBMC.

HBMC Input Forms

2.9. This form was designed during the course of the project to facilitate the input of data to HBMC for preservation and management purposes, bearing in mind that HBMC will also have the mapped data and SMR to hand. As the example illustrated in Appendix 2 shows, these forms contain similar information for recommended sites and landscapes as the SMR in put forms. Several important points however should be noted:

(a) One HBMC input form can contain several SMR sites which may in turn have more than one existing SAM number.

(b) The nomenclature for site type field is in some cases different from the item words used in the SMR. This nomenclature was initially based by DAMHB on the NMR Archaeological Thesaurus, but in its earlier published form within the 'Guide to the Compilation of DOE Record Forms for Scheduled Monuments' (Section 13 pp 15-19) there are insufficient terms for the range of monuments encountered on Dartmoor. New terms were found which would be compatible with HBMC computer input and Drs Keith Falconer and Robin Thornes of RCHME assisted in devising suitable industrial terms more satisfactory to HBMC than those in current use by the SMR. A concordance of SMR item words and HBMC site types is included in the next section of this report.

(c) The concordance also contains definitions of 'period general', 'period specific' and 'form' for each monument type. These designations are also derived from the DOE instructions for the completion of AM 107 forms.

(d) The HBMC in put forms also contains a field for land classification, again based on the AM 107 guidelines which refer to the following categories:

Woodland

1).	Deciduous Woodland, native species predominant	-	Defined as species present after the last glaciation, eg. oak, ash, elm, beech, birch, alder, hazel, hornbeam etc. Managed, neglected, unmanaged or management not determined.
2).	Deciduous Woodland, introduced species	-	Defined as species introduced after (1) eg. sycamore, sweet chestnut etc. Managed,

	predominant		neglected, unmanaged or management not determined.
3).	Mixed Coniferous and deciduous Woodland	-	In which coniferous and deciduous are present in roughly equal proportions. Managed, neglected, unmanaged or management not determined.
4).	Coniferous Plantation	-	In which a range of conifers may be planted eg. spruce, larch, pine, etc.
5).	Woodland character not determined	-	Managed, neglected, unmanaged or management not determined.
6)	Parkland	-	In which the density of trees is significantly less marked than in woodland; if parkland is currently cultivated then classify land accordingly.
7).	Scrub	-	The term scrub includes invasive woodland characterised by the presence of birch, willow, alder, ash, sycamore, conifers as low trees, with shrubs.
8).	Woodland Other (please specify)		

<u>Grassland</u>

1)	Heathland	-	A plan community which includes low shrubs ego heathers, bilberry, gorse; also the presence of bracken.
2).	Undisturbed Grassland	-	If managed at all, then only to a low intensity, eg. mowing, spraying etc. involving operations which are not archaeologically damaging.
3).	Disturbed Grassland	-	Areas of past and current land improvement, involving operations capable of disturbing the archaeology, eg. land drainage, land reclamation, cultivation including areas of ridge and furrow but not 'Celtic Fields' which if not subsequently ploughed should be classified as Grassland, Heathland 2.
4).	Regularly Improved Grassland	-	Regularly cultivated and re-seeded grassland (but not including 'temporary' grassland within arable rotation - this would be classified under Cultivated Land).
5).	Grassland	-	Character and/or management not determined.

<u>Wetlands</u>		-	(organic and inorganic)
1).	Wetlands	-	To include areas of wet valley bogs, sphagnum bogs, fens (N.B. In areas such as the Fens and Somerset Levels most land should be classified under 'Cultivated Land'

'Wood land' or 'Grassland, Heathland' rather than 'wetlands').

Cultivated Land	-	(including Market Gardening)
1). Cultivated Land	-	Minimal cultivation, involving no operations likely to be damaging to archaeological remains.
2). Cultivated Land	-	Operations restricted to a depth of less than 25cms.
3). Cultivated Land	-	Operations in excess of 25cms depth.
4). Cultivated Land	-	Character of operations not determined.

Other

1). Allotment		
2). Building	-	In use as a building.
3). Built over	-	Site underlying building or structure.
4). Churchyard	-	Including ground in current use for burials and legally consecrated ground, eg. graveyard, chapel-ground etc.
5). Garden	-	Specify usage: private, public, formal, etc.
6). Land boundary	-	Specify usage: hedge, fence, wall etc.
7). Mineral extraction	-	eg. Mine, quarry, etc.
8). Monument	-	Where the land on which the monument stands is dedicated to the monument itself; this may include Guardianship Sites, also Sites which exclude any other Land Classification, ego Cross, Commemorative monuments etc.
9). Natural formation	-	Specify usage: cave, cliff etc.
10). Orchard		
11). Thoroughfare	-	Specify usage: path, road, track, bridge, lay-by etc.
12). Verge		
13). Waste Ground		
14). Recreational use	-	eg. Golf course, playing field etc.
15). Other		

(e) The 'date of photography' refers to the date of the latest photography.

(f) Details of threat are here transferred from SMR input forms.

HBMC Input Lists

2.10. One summary list of one or more pages has been provided for the forms belonging to each of the 54 survey map areas. An example is illustrated in Appendix 2.

Window Overlays

2.11 In addition to the archaeological transcription overlays, an inked 'window' overlay has been prepared for each map to indicate the areas already scheduled (with SAM numbers) and the (often expanded) areas recommended for future consideration by HBMC. Each new 'window' is annotated with its new HBMC input form reference number (see key). A 1:50,000 Distribution Map summarizes this information for the whole of Dartmoor. (Distribution Map 1).

Coloured Dyeline

2.12 A dyeline copy is being provided for HBMC of each map overlay, indicating by means of different colours, prehistoric (pink-orange), medieval (green) and industrial (yellow) monuments. These have been prepared in response to a request made HBMC at the last management meeting in November 1985.

Crown hill Down Survey

2.13. During the course of the project HBMC requested that an additional task be carried out. This took the form of a rapid survey of the air photograph evidence for Crownhill Down in response to a proposal to cover large parts of the area with waste from tungsten mining operations at Hemerdon Ball. A coloured overlay was produced for HBMC (parts of SX55NE and 56SE) together with a written report (Appendix 1).

Costs

2.14. At the end of the project the following reconciliation of costing can be given, which complies well with original estimates:

Salaries	£25,000.00
Travel and Subsistence	2,930.85
Equipment	2,128.82
Management Fee	2,594.33
Total of Project Components	32,654.00
Plus VAT 15%	4,818.10
Sum Total	£37,552.10

CHAPTER 3

Classification of Sites and Monuments

Prior to the commencement of the project a scheme of classified monument types was agreed for input to the SMR. This was subject to some very minor modifications as a result of experience gained in the early stages of work.

In the following list the SMR Item Word (upper case), is followed in brackets by any supplementary Key Words. The list is followed by an index of the cartographic conventions used on the 1: 10560 map overlays (3.10).

3.1. Hut circles

HUT CIRCLE

single hut circle or group of two or three

HUT CIRCLE (attached hut circle)

hut circle attached to a reave or wall or enclosure wall, or attached to other hut(s) or as a quadrant hut in the right angled junction between two reaves.

OPEN SETTLEMENT

group of four or more hut circles. The term ‘hut settlement’ is not used.

3.2. Enclosures

ENCLOSURE

enclosure of any shape. No key word required if it has no internal features and is not D-shaped etc. (see below).

ENCLOSURE (hut circle(s))

enclosure of any shape except D-shaped etc. with hut circle(s) inside it.

ENCLOSURE (D-shaped)

enclosure with one ‘straight’ side but no internal features.

ENCLOSURE (D-shaped, hut circle(s))

see above

ENCLOSURE (agglomerated)

primary enclosure with secondary enclosures attached to its outside.

ENCLOSURE (partitioned)

enclosure with internal subdivision(s)

ENCLOSURE (pendant)

enclosure attached to a reave

ENCLOSURE (quadrant)

enclosed area in the angled junction between two reaves.

ENCLOSURE (incorporated)

enclosure incorporated within a reave

HILLFORT (or ENCLOSURE)

defended enclosure with rampart(s) or substantial wall(s).

3.3. Reaves and Field Systems of probable prehistoric date

REAVE

low alignment of reave walling, usually in an isolated location but sometimes a remnant of an eroded reave system.

MAIN REAVE

principal territorial boundary, including terminal, contour and cross-ridge reaves.

PARALLEL REAVE SYSTEM

reaves which form a distinct landscape pattern, subsidiary but not necessarily secondary to main reaves.

FOSSILIZED REAVE SYSTEM

reave system incorporated into post-prehistoric field pattern, sometimes still in use as field boundaries and often mapped by OS.

FIELD SYSTEM

system of old land boundaries not derived from a parallel reave system.

BANK

low linear banked earthwork, often with little or no evidence for stone walling surviving from the air photograph evidence.

3.4. Field Clearance (probable medieval and post-medieval date).

CLEARANCE CAIRN

not usually visible on air photographs.

CAIRNFIELD

large group of clearance cairns, as above.

3.5. Medieval and Post Medieval Settlement and Agriculture

DMW

deserted medieval village, e.g. Houndtor.

DMS

deserted medieval settlement.

FARMSTEAD

deserted farm of unknown date.

RIDGE AND FURROW

individual ridges are shown schematically.

LYNCHET(S)

earthworks of relict cultivation terraces.

PILLOW MOUND(S)

rabbit buries - the length of the rectangle used as the cartographic convention indicates the approximate length of a pillow mound.

WARREN

A group of pillow mounds often with a surrounding bank and/or a proper name which includes the term ‘warren’.

3.6. Prehistoric Funerary and Ritual Monuments

LONG CAIRN

chambered cairn, megalithic tomb, long barrow etc.

CAIRN

usually a Bronze Age round stone tumulus. Normally used instead of BARROW when it is known to consist largely of stone or contains a cairn heap.

BARROW

usually a Bronze Age round earth tumulus.

TOR CAIRN

embellished tor.

RING CAIRN

used instead of CAIRN when the monument has been positively identified in SMR as a ring cairn.

STONE CIRCLE

often not easily visible on air photographs.

RETAINING KERB

used for stone circles around, or incorporating barrows or cairns.

ALIGNMENT

stone rows or alignments, single, double or triple.

STANDING STONE

single menhir, often not easily visible on air photographs.

CIST

usually not visible on air photographs.

3.7. Communications

ROAD

walled and unwalled examples are usually away from settlements

HOLLOWAY

sunken lane or trackway usually associated with a settlement, but occasionally may be minor linear extractive work.

RAILWAY or TRAMWAY

not easily distinguished from one another on air photographic evidence.

3.8. Industrial Activity

STREAMWORK

area where alluvial deposits of tin or another mineral have been worked, often adjacent to a stream which may not be following its original course as a result of heaping and damming activity.

OPENWORK

opencast mineral extraction, usually of similar depth to streamwork.

LEAT

artificial water course usually associated with mineral extraction. On air photograph evidence, short lengths are sometimes difficult to distinguish from ditches etc.

DAM

only used in association with streamworks or other mining activity.

TIN MILL

used for all types of tin site such as crazing mill, blowing house, blowing mill, knocking mill, stamping mill, etc.

MINE

often difficult to distinguish from an openwork on air photograph evidence.

SHAFT/TRIAL PIT/WHEEL PIT

often difficult to distinguish a shaft from a trial pit or wheel pit on air photograph evidence. The latter is only used when confirmed by SMR.

QUARRY

often small, medieval or post-medieval stone (usually granite) extraction pits.

CLAY PIT

china clay quarry.

CLAY WORKS

china clay works.

3.9. Other Item Words

A number of other Item and Key Word shave not been adopted for the purpose of the present survey, but are used in the Devon SMR, e.g. strip fields, etc. Other miscellaneous terms used by the SMR have been used on the maps but in some cases have not been input into the SMR or recommendations to HBMC. These are:

SPOIL HEAP

usually associated with mining or extractive industry.

WALL

as for reave and bank above

BOUNDARY STONE

not usually visible on air photographs.

BUILDING

unroofed ruined building.

LONGHOUSE

any unroofed building which has been documented in SMR or elsewhere as a longhouse.

RESERVOIR

existing reservoirs, not usually classified as monuments but shown on map overlays as areas of major land disturbance. Remains of small abandoned and dried-up ‘reservoirs’ associated with old mineral workings have been classified as DAMS.

POUND

animal pound of medieval or post-medieval date.

VERMIN TRAP

post-medieval funnel traps usually set into a wall.

POWDER MILL

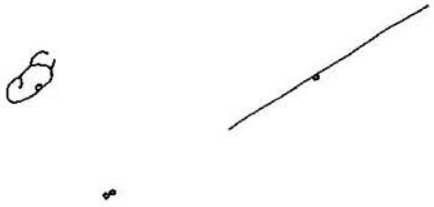
unroofed ruined building.

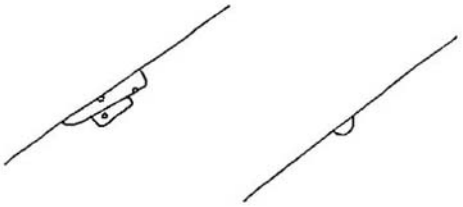
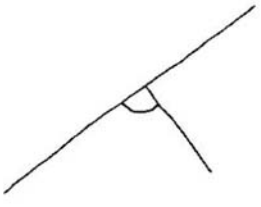
BATTERY

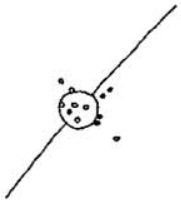
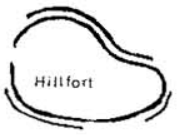
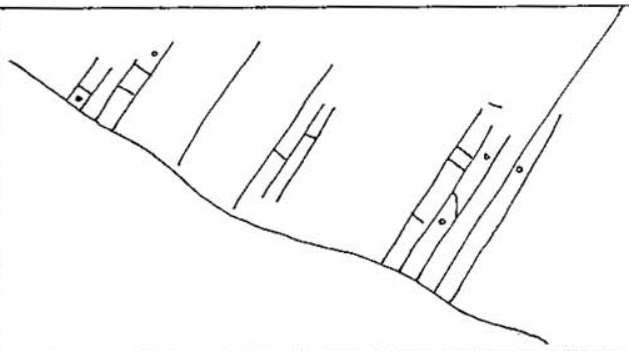
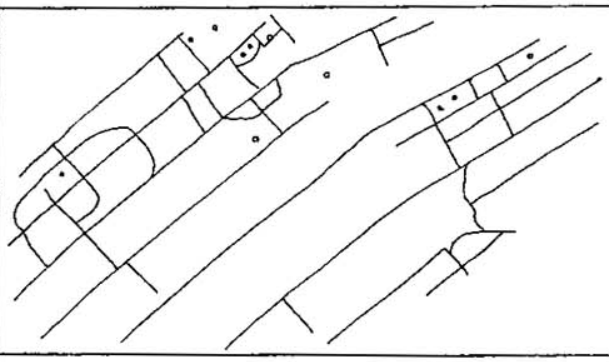
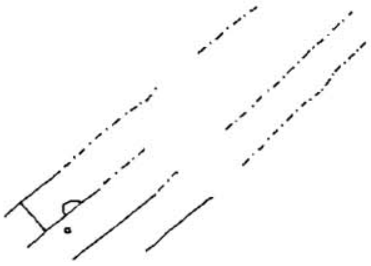
post-medieval military earthwork.

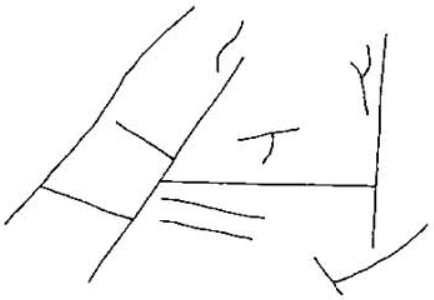
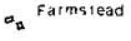
PEAT CUTTING

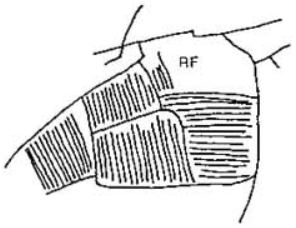
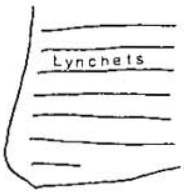
CLASSIFICATION OF MONUMENTS - CARTOGRAPHIC CONVENTIONS
(SMR Item word in upper case)

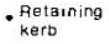
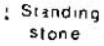
HUT CIRCLE(S) single or group of one to three hut circles	
OPEN SETTLEMENT group of four or more hut circles	
HUT CIRCLE (attached hut circle)	
ENCLOSURE any shape, no internal features	
ENCLOSURE (hut circles) any shape, with hut circles	

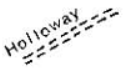
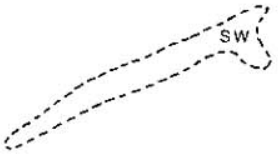
ENCLOSURE (D-shaped) no internal features ENCLOSURE (D-shaped, with hut circles) and/or internal features	
ENCLOSURE (agglomerated)	
ENCLOSURE (partitioned)	
ENCLOSURE (pendant)	
ENCLOSURE (quadrant)	

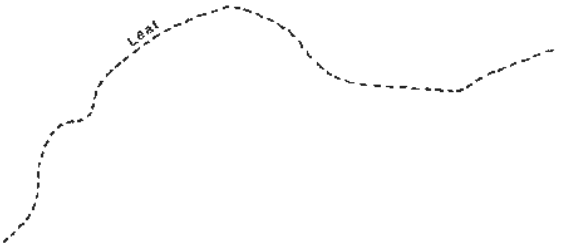
ENCLOSURE (incorporated)	
HILLFORT (or ENCLOSURE) defensive site	
REAVE MAIN REAVE	
PARALLEL REAVE SYSTEM	
FOSSILIZED REAVE SYSTEM	

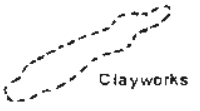
FIELD SYSTEM	
BANK	
CAIRNFIELD CLEARANCE CAIRN	
DMV DMS	
FARMSTEAD	

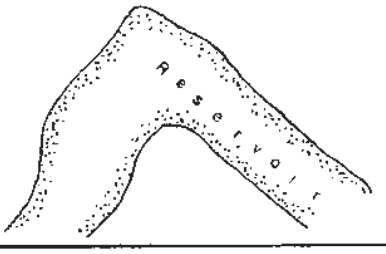
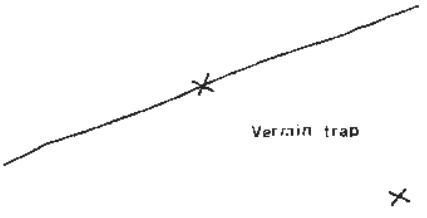
RIDGE AND FURROW	
LYNCHET(S)	
PILLOW MOUND(S) or WARREN	
LONG CAIRN	
CAIRN BARROW TOR CAIRN RING CAIRN	

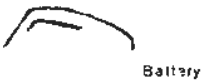
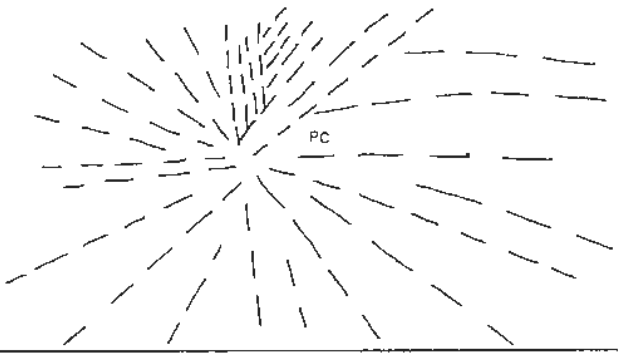
STONE CIRCLE	
RETAINING KERB	
ALIGNMENT single, double, triple	
STANDING STONE	
CIST	

ROAD walled, unwalled	
HOLLOWAY	
RAILWAY or TRAMWAY	
STREAMWORK	
OPENWORK	

LEAT	
DAM	
TIN MILL	
MINE	
SHAFT TRIAL PIT(S) WHEEL PIT	

QUARRY	
CLAY PIT	
CLAY WORKS	
SPOIL HEAP	
WALL	

BUILDING LONGHOUSE	Bldg Longhouse
RESERVOIR	
POUND	Pound
VERMIN TRAP	
POWDER MILL	Powder mill

BATTERY	
PEAT CUTTING	

3.11. Concordance of SMR Item Words and HEMC Site Types

DEVON SMR ITEM WORDS	HBMC SITE TYPE	PERIOD GENERAL	PERIOD SPECIFIC	FORM
HUT CIRCLE - single	HUT CIRCLE	Prehistoric	Bronze Age	(Building foundation standing monument)
HUT CIRCLE - group	HUT CIRCLE (S)	"	"	"
OPEN SETTLEMENT	SETTLEMENT	"	"	"
HUT CIRCLE – attached	HUT CIRLCE	"	"	"
ENCLOSURE	ENCLOSURE/ENCLOSED SETTLEMENT	"	"	"
" - hut circles	"	"	"	"
" - D shaped	"	"	"	"
" - agglomerated	"	"	"	"
" - partitioned	"	"	"	"
" - pendant	"	"	"	"
" - quadrant	"	"	"	"
" - incorporated	"	"	"	"
HILLFORT	HILFORT	"	Iron Age	"
REAVE	REAVE	"	Bronze Age	"
MAIN REAVE	REAVE	"	"	"
PARALLEL REAVE SYSTEM	FIELD SYSTEM	"	"	"
FOSSILZED REAVE SYSTEM	FIELD SYSTEM	"	"	"
FIELD SYSTEM	FIELD SYSTEM	(variable)	-	"
BANK	BANK	"	-	Earthwork
BOUNDARY STONE	BOUNDARY STONE	Post medieval	-	Standing monument
LYNCHET (S)	LYNCHET	(variable)	-	Earthwork
CLEARANCE CAIRN	CLEARANCE CAIRN	Medieval or post medieval	-	Standing monument
CAIRNFIELD	CAIRNFIELD	"	-	"
DMV	VILLAGE/SETTLEMENT	Medieval	-	Standing monument or building complex or building foundation or ruined building
DMS	VILLAGE/SETTLEMENT	"	-	"
RIDGE AND FURROW	RIDGE AND FURROW	Medieval or post medieval	-	Earthwork
PILLOW MOUND	PILLOW MOUND	"	-	"
WARREN	WARREN	"	-	"
LONG CAIRN	LONG CAIRN	Prehistoric	Neolithic	Standing monument
CAIRN	CAIRN	"	Bronze Age	"
BARROW	BARROW	"	"	"
TOR CAIRN	CAIRN	"	"	"

RING CAIRN	RING CAIRN	"	"	"
STONE CIRCLE	STONE CIRCLE	"	Neolithic or Beaker or Bronze Age	"
RETAINING KERB	RETAINING KERB	"	Bronze Age	"
(STONE) ALIGNMENT	STONE ALIGNMENT	"	Neolithic or Beaker or Bronze Age	"
STANDING STONE	STANDING STONE	"	"	"
CIST	CIST	"	Beaker or Bronze Age	"
ROAD	ROAD	Medieval or post medieval	-	"
TRAMWAY	TRAMWAY	Post medieval	Industrial Revolution	Other structure
WALL	WALL	(variable)	-	"
POUND	POUND	Prehistoric, Medieval or post medieval	-	"
HOLLOWAY	HOLLOWAY	Medieval or post medieval	-	"
STREAMWORK	STREAMWORK	"	(variable)	"
OPEN WORK	OPEN WORK	"	"	"
LEAT	LEAT	"	"	"
DAM	DAM	"	"	Earthwork
TIN MILL	TINWORKS	"	"	Ruined building
SHAFT	SHAFT	"	"	Other structure
TRIAL PIT	SHAFT	"	"	"
QUARRY	QUARRY	"	"	"
CLAY PIT	CHINA CLAY PIT	Post medieval	"	"
CLAY WORKS	CHINA CLAY WORKS	"	"	"
SPOIL HEAP	SPOIL HEAP	"	"	"
FARMSTEAD	FARMSTEAD	Medieval/Post	"	Ruined building or building complex, building foundation, roofed ruin
LONG HOUSE	LONG HOUSE	"	"	"
BUILDING	BUILDING (unclassified)	"	"	Roofed building, building complex, building foundation, roofed ruin, ruined buildings
WHEEL PIT	WHEEL PIT	Post medieval	?Industrial Revolution	Other structure

CHAPTER 4

Recommendations to HBMC - An Overview

4.1. Against the background of discrete prehistoric settlements and funerary and ritual monuments already scheduled on Dartmoor, the recommendations of this project tend towards a consideration of areas of industrial remain sand activity and more extensive archaeological landscapes. It is precisely these features that are so well recorded by the air photographs. However, only the best streamworks and openworks have been recommended, such as the tin streamwork at Ivy Tor Water, South Tawton (SX 6391, SMR SX69SW 230), and the impressive open work on Crownhill Down (Appendix 1). Two good examples of recommended landscapes lie within the frameworks of large parallel reave systems. At Holne Moor the system is bounded by the Venford main reave and to its N lies another large framework of parallel reaves, the Dartmeet and Corndon Down systems (all on SX67SW). Only about 5% of these blocks of ancient landscape had already been scheduled, except for an area on E side of the Venford Reservoir. Another fine example is provided by the Rippon Tor parallel reave system (centred upon SX7475); two blocks within it being already scheduled. It contains a large number of additional and supplementary landscape features, in particular one of the most important concentrations of hut circles in E Dartmoor. A group of cairns has already been scheduled here, as have others at Dartmeet, but a number of incorporated enclosures and some good examples of ridge and furrow have until now been ignored.

4.2. Easdon Tor (SX7382, SMR SX78SW 28, 33, 44, 45, 96, 180, 183-4, 187-8, 190), provides a good example of 4 contiguous recommended areas forming component parts of a complete archaeological landscape. This survey has drawn attention to two smaller monuments within the enclosure here, which might warrant consideration by HBMC, if for any reason the larger area was not scheduled.

4.3. In other situations HBMC is recommended to consider expansion of an existing core or focus, so as to include a representative sample of its associated archaeological interest. This applies, for example, to the hillforts of Hunter's Tor (SX7682, SAM 279), and Cranbrook Castle (SX7389, SAM 143). However, at Kestor Rock, the already scheduled settlement has had its field system recommended in two

separate blocks (SX6686, SAM 157, 261). In other cases there is no recommendation for expansion of the scheduled area, as at Prestonbury Castle hillfort (SX7490, SAM 151), and the hillfort at Wooston Castle (SX7689, SAM 265).

4.4. Turning to prehistoric enclosed settlements, and groups of unenclosed huts, distinct contrasts stand out as a result of previous fieldwork and research. At Trowlesworthy Warren in the Upper Plym Valley, an area of hut circles, enclosures and ritual monuments centred upon SX5764, are now not only scheduled, but also protected as part of a Guardianship Area (see also 1.9. above). However, the N bank of the River Plym, equally rich in archaeological remains such as the Legis Tor enclosures, is not in guardianship, although it was the original intention of DAMHB to include it. Trowlesworthy Warren contains one of the densest concentrations of hut circles on Dartmoor, with more than 70 in one km. square. There is a similarly large concentration of unenclosed hut circles and enclosures in the Erme Valley but scheduling here centred instead upon some spectacular ritual monuments such as the stone circle and long alignment on Erme Plains (SAM 403). Another lies to the Sat Burford Down (SX6360 SAM 821) where enclosures and the associated field system have been recommended to HBMC for consideration.

Sometimes a group of features, such as sections of the Great Western contour reave, a hillfort, several enclosures, and a medieval farmstead, come together to form a ‘linear’ landscape. This occurs at Cudlipptown Down and White Tor (SX5476), both examples that have been recommended to HBMC for possible scheduling.

4.5. In view of the example provided by DAMHB’s scheduling of the Haytor Down tramway (SX7677) in its entirety, several recommendations have been made with regard to discrete but extensive industrial monuments such as the Devon and Wheal Friendship Copper Mine, Mary Tavy (SX5079, SMR SX57NW 82), and the Merrivale Quarry (SX5475 SMR SX57NW 115,174,177), both of which contain associated assemblages of buildings.

4.6. It may be a source of regret that more marginal areas of archaeological landscape on the vulnerable edge of the high moor have not been recommended.

Because of a lack of adequate up-to-date specialist oblique air cover for a number of these areas, it has been felt unwise to make firm recommendations.

CHAPTER 5

The Mapping of Monuments - Some Preliminary Observations

5.1. Hut circles - enclosed and unenclosed

Impaired visibility in a variety of vegetational zones has in several instances prevented the confident identification from air photographs of hut circles previously recorded on the ground. It must therefore be recognised that significant numbers of extant samples, whether previously identified by field surveyor not, will not be mapped in this survey. Despite this limitation it may nevertheless be noted that 3018 enclosed and unenclosed examples have been identified in the course of the present survey. In the earlier Plym Valley field survey, examples could be measured in the field and a histogram compiled of their relative frequency by internal diameter (Balaam et al, 1982, 242). Nothing of that nature can be attempted with the evidence derived from simple non-photogrammetric transcription, but Distribution Map 2 does, in elementary terms, show the relative frequency of Bronze Age stone round houses per sq.km. for the entire survey area. Few areas are entirely devoid of examples and densities range up to 70 per sq.km., with the majority lying in the 10-20 per sq.km. bracket.

Distribution Map 2 confirms the dense and previously well known concentrations that occur in the Tavy, Plym, Walkam and· Avon valleys, and the lesser concentrations that lie in valleys such as the North Teign and West Okement. Explanations of this patterning have been discussed elsewhere, but it is interesting to compare the present distribution with that published by Hamond (1979) based on OS map sources, and with surveys of Dartmoor settlement by Worth (1967,99-132, esp. fig.12), and Lady Fox (1954). The overall pattern of concentration is broadly similar, but the earlier surveys seriously under represent the total number of individual hut sites - notwithstanding Hamond's observation that his data base encompasses "hut-circles lost by destruction and those discovered within the last century".

Smith has more recently (in Balaam et al, 1982) pointed out that the difference between enclosed and unenclosed hut groups should be seen as an evolutionary one. In the Plym Valley for example, he recorded a gross ratio of 36% unenclosed to 64%

enclosed, although excavation and ground fieldwork suggested that as many as a third of the enclosed class may have originally been free standing houses.

5.2. Enclosures

Detailed analysis of the morphology and distribution of enclosures recorded in the course of the present survey must await further research. As might be expected the distribution of enclosures is in broad terms similar to that of hut circles (Distribution Map 3). It is indeed noteworthy that most hut circles in the Plym Valley, for instance, actually lie within walled enclosures.

Only the best preserved and most interesting examples have been recommended for consideration in scheduling. The majority of others, not recommended, are by comparison undistinguished or not easily recorded on air photographs. Out of 112 scheduled examples on Dartmoor, we recommend that 49 areas be extended, and have recommended 102 ‘new’ examples for consideration. Seven SAMs have not been recommended and six could not be seen on the air photographs.

It has been found that many enclosures have been incorporated into field or parallel reave systems and are in improved areas where they may or may not have been cleared of internal hut circles and clitter. It is often difficult to be sure whether they are of the main Bronze Age tradition or instead respect medieval or post-medieval stock pounds. Other examples may have evolved from prehistoric settlement enclosures through a process of clearance and structural modification to become stock enclosures in more recent times. Good examples of enclosures incorporated into field and reave systems occur in the Dartmeet System at SX6874 and 6776. These, like many others appear almost ‘trapped’ in a ‘cobweb’ of straight field walls. In other cases fragmentary curved lengths of walling have been mapped, often giving the impression of being ‘damaged’ enclosures.

The system of enclosure classification developed especially for this project represents an enhancement of the SMR system. It has been influenced in part by the morphological variety recognised in recent research, such as the ‘attached’, ‘incorporated’ and ‘quadrant’ enclosures discussed in relation to reaves by Fleming (1978, eg. fig.1).

5.3. Reave systems and other field systems

As has been outlined above, one of the principal objectives of the survey has been to map for the first time the extensive surviving field systems on Dartmoor, including the recently recognised prehistoric landscape of reaves and parallel reave systems. The published work of Fleming and his team provides the background, and several of the more important factors relating to these archaeological landscapes and this project have been referred to above and need not be repeated here (1.5, 2.5, 4.1, etc.).

Out of 44 examples of field systems or reave systems already scheduled, we have recommended that the HBMC consider extending the areas of 30. In addition, we recommend that a further 107 previously unscheduled examples be considered. Large systems such as the Holne moor and Dartmeet parallel reaves also contain large numbers of monuments of other classes within their recommended areas. These may include such features as cairns, pillow mounds, trial pits, openworks and streamworks, as well as incorporated enclosures. The Dartmeet system also contains some excellent ridge and furrow at SX6873 and a group of very fine cairns already scheduled at SX6874.

In several instances fossilized reave systems have been recommended, representing the continuation of moorland parallel reaves into the ‘modern’ enclosure walls of improved grassland on the moorland margins. Sometimes the rea ves are best preserved in their fossilized state, on account of their being sealed by well maintained overlying walling. In another instance, at Pupers reave, its southern extension from Pupers Rock to Watern Oak Corner (SX672673-686659) appears to be fossilized in a ‘modern’ wall as far as SX695655, and is considered so by Fleming. However, a bank at SX687657 may be a more likely continuation, the wall’s presence being associated with openworks along its line. Where fossilized reaves can be detected continuing where their moorland survivals break off, such examples are more likely to have been recommended than examples where the adjacent moorland evidence has been lost and there is no physical continuation on the ground.

Other types of field system (e.g. Hentor-Warren) will also incorporate monuments of many other classes, and the same arguments will apply to these. Often field systems

are closely associated with medieval or post-medieval farmsteads, such as those in Okehampton Park, but in many cases they remain undated.

5.4. Deserted medieval villages, settlements, farmsteads, fields, and ridge and furrow.

Only one certain deserted medieval village had previously been recorded and excavated on Dartmoor, at Houndtor (Beresford, 1979). On the other hand, many examples of smaller settlements and farmsteads have been mapped and recorded during the present survey. Some of the best examples occur in Okehampton Park, associated with fields, some containing ridge and furrow. These have been studied by Lineham (1967), and more recently by Austin et a1. (1980), where even after excavation, environmental analysis and radiocarbon dating, the precise chronology of settlements has proved difficult to establish. The uniquely preserved landscape in Okehampton Park is threatened by the proposed southern route for the Okehampton Bypass and it is recommended that the scheduled areas of individual settlements should be considered for expansion into the area of their related fields.

Many other isolated settlements and ruined buildings the open moor may be associated with mineral extraction and other activities, rather than with simple domestic occupation and farming.

Areas containing the probable remains of divided or subdivided arable dating from historic times are scattered across Dartmoor and have been mapped in this survey. These present themselves as field boundaries, abandoned or still in use, and ridge and furrow. Archaeological fieldwork in certain specific areas has shown that field boundaries (in the form of stone block or clearance walls, wall-banks, hedge-banks and corn -ditches) and ridge and furrow are often medieval in origin. These fields are sometimes separated by droveways or ‘strolls’, but it is not possible, on air photograph evidence alone, to distinguish these features from early tin prospecting gullies, particularly if they lie in more ‘isolated’ locations. The best examples of medieval fields are at Ringmoor Down, Okehampton Park and Holne Moor, the last example being discussed by Fleming and Ralph (1982). In contrast to this, documentary evidence for some areas has suggested that much of the ‘narrow rig’, more reminiscent of cord rig and lazy beds elsewhere, is much later, possibly dating

from the eighteenth and early nineteenth centuries, and perhaps a response to poor local drainage conditions.

There are also large areas of ridge and furrow incorporated into other pre-existing fossilized or intact reave patterns, such as in the SW part of the Rippon Tor system. Other areas such as on Hamel Down, NW of Widecombe-in-the-Moor, are extensive, but less associated with surviving early features. On the moorland fringe in areas of 'newtake' and fossilized fields, the history of superimposition and change must be very complex.

We have recommended that of 9 scheduled areas of ridge and furrow, 8 should be considered for extension of area. In addition, 15 'new' areas have been recommended for consideration.

Systems of lynchets are often difficult to distinguish on the air photographs, although many appear well preserved on the early RAF photography. We have recommended that the SAM area of medieval strip lynchets and other features at Challacombe, Manton (SX6908, SAM 518, SMR SX67NE 1…217) should be considered for extension in line with the evidence presented in this survey and also elsewhere (e.g. Bonney, 1971).

Evidence of medieval strip cultivation such as at Hentor Warren (SX5966) has been recorded, but no 'new' areas have been mapped apart from those already within the SMR.

5.5. Funerary and ritual monuments

As emphasised above (2.4., 2.5.), this survey has tended to move away from the more obvious single monuments such as cairns and stone circles, to concentrate on archaeological landscapes, although in many cases funerary and ritual monuments will find themselves incorporated in these, such as at the Ditsworthy Warren and Drizzle Combe complex in the Upper Plym Valley and the neighbouring multiple stone circle at Yellowmead (SX575678). The same situation may be observed in the Erme Valley where a stone circle and very long stone alignment on Erme Plains, and

another to the S at Burford Down (SX6360), are already scheduled, but occur within large settlement landscapes.

The majority of such monuments are well recorded in the SMR and most of the finest have already been scheduled. The majority also tend to be difficult to record from air photographs; many retaining kerbs and cists are indeed wholly invisible. Stone circles, standing stones and stone alignments may usually be recognized only through associated footpath tracks. Most cairns and barrows are small and often of very slight elevation and can easily be missed in the patchy mottled undergrowth of gorse and bracken. Fine cairn groups have however been noted at Crownhill Down (Appendix 1), Snowdon and Lud Gate (SX6668 and 6867) on Dean Moor, and a group already scheduled in the Dartmeet parallel reave system at SX6874.

Although the present survey has made only a modest contribution to the study of these monuments, it has been possible to recommend for consideration in scheduling one additional long cairn (to the two already scheduled), and two 'new' stone alignments. Of 33 scheduled alignments, we recommend that HBMC consider extending the protected areas of two. Five 'new' barrows have been recommended in addition to 25 scheduled examples; 52 'new' cairns in addition to 65 scheduled examples, and 2 'new' standing stones in addition to 5 scheduled examples.

5.6. Hillforts

The survey has likewise added little to our knowledge of the defended enclosures surrounding the fringes of the high moor. In 4.3. above we have already noted reasons for recommending that consideration be given to the extension of the protected area of two out of 8 scheduled examples.

5.7. Industrial monuments

One of the most important results of this project has been the extensive mapping of industrial sites and monuments on Dartmoor, resulting in the input of 981 units of data of SMR (40.2% of the total input), and a number of recommendations to HBMC, bearing in mind that few sites of this class have been scheduled to date.

The boundaries of all areas of tin streamworks and openworks have been mapped where visible on the air photographs, and internal features such as the individual tin streamers' waste heaps have been shown schematically on a majority of pencil overlays, although it was eventually agreed that these should be left off the final ink overlays. In every case a decision has had to be made between streamwork and openwork, but owing to some uncertainty in the general interpretation of differences between the two classes - particularly from air photograph evidence alone - some examples may be incorrectly identified. These difficulties may be easily overcome by skilled ground inspection during a field work programme. Out of 3 examples of stream or open work already scheduled, we recommend that the area of one be considered for extension, and suggest 12 additional examples for consideration. A very fine openwork with medieval origins occurs at Crownhill Down (Appendix 1) and a similarly dated streamwork exists in Ivy Tor Water (SX6291), although the chronology and life-span of some of these workings is still the subject of embryonic research. Only prime examples like these and the workings near Huntingdon Warren, have been recommended for consideration by HBMC, although many other good examples might easily be considered.

Shafts and trial pits have also been extensively mapped. Good examples can be found in the large area around Drivage Bottom at SX5970 and the remarkable grid pattern of shafts near Hangershell Rock and Butterdon Hill (SX6558-6559). Three examples have been recommended to HBMC, together with one wheel-pit (at Eylesbarrow Tin Mine, SX5968), in most cases in conjunction with other related industrial remains.

Leats are associated with many stream and openworks. These were constructed to carry water from natural sources such as rivers, to mineral workings. A fine example is associated with one of the most important and extensive groups of tin mining remains on Dartmoor, centred upon the Birch Tor and Vitifer Mine (SX68SE, Broughton, 1968-9). The leat, about 11 km. long and constructed in about 1830, takes a sinuous contoured route to bring water from the East Dart (SMR SX68SW 17, SX68SE 21). Another good example is the Bovey Tracey Pottery Leat (SMR SX77NE 12), which closely follows the 700 ft. contour across Trendlebere Down and Yarner Wood.

Out of 9 scheduled examples we have recommended that 4 be considered for expansion in area and have suggested 7 ‘new’ examples. A dam at the Eylesbarrow Tin Mine has also been recommended (SMR SX56NE part of ref.36). No ‘new’ tramways or railways have been recommended in addition to the example connected to Haytor Quarries (SX7677, SAM 449, SMR SX77NE, 21). Mines such as the Devon Wheal Friendship Copper Mine, have been recommended, and in the case of Merrivale Quarry, an extension of area was recommended for consideration. No clay pits, clay works or spoil heaps have been recommended to HBMC.

Industrial buildings such as tin mills and blowing houses have been mapped where they have been observed on the air photographs, but many are not easily visible. In addition to 10 tin works scheduled by HBMC, we suggest 3 other examples that should be considered for preservation.

Some impression of the overall distribution of industrial remains recorded by this project can be gathered from Distribution Map 4 (5.14. below).

5.8. Pillow mounds and Warrens

In its systematic mapping of pillow mounds (or ‘rabbit buries’), this project has made an important contribution toward an understanding of warrens on Dartmoor as a whole. Although the Ordnance Survey has mapped some pillow mounds in its recent 1:10,000/1:25,000 survey, this project provides the first overall mapping of these features on Dartmoor.

The distribution pattern first described by Lineham (1967) has been confirmed. The largest concentrations of pillow mounds are contained within five warrens; Legis Tor, Ditsworthy, Hentor, Willings Walls and Trowlesworthy, in the Upper Plym Valley. Here some of the finest examples have been well recorded on air photographs, occurring within the complex patterns of prehistoric settlement and the mineral extraction scars of the historic period. Indeed, some mounds occur within Bronze Age enclosures, which appear to have been converted in to walled warrens in their own right (SX56NE Ref.13, SX6867).

Most sites are rectangular mounds with flat tops and side ditches usually sited across the contour to facilitate drainage. Their date is unknown, but although there is documentary evidence for warrens in the Upper Plym in the thirteenth and fourteenth centuries, it is generally assumed that these examples, and many others elsewhere, are eighteenth or early nineteenth-century in date. A 'late' origin may be suggested where examples overlie ridge and furrow or are constructed with slight elevations from destroyed field boundaries such as the 'hedge-bank' examples on Holne Moor. Some may be tinners' 'subsistence warrens', to be contrasted with those established on more commercial lines.

Pillow mounds constructed to a circular or oval plan, often resemble cairns or barrows and have been claimed as such elsewhere (i.e. at Merrivale by OS). Others seem to be associated with buildings, possibly warrener's shelters, and with vermin traps (i.e. Ditsworthy Warren).

This survey has proved useful in locating many of the more isolated pillow mounds, such as at Headland Warren on the slopes of Birch Tor, where they might be associated with a deserted farmstead or mine (SX6981).

Eleven pillow mounds or pillow mound groups have been scheduled to date; we recommend that a further 8 be considered for scheduling. A measure of destruction is provided by the cases of several good examples ploughed out or otherwise levelled between being photographed by the RAF in the late 1940s and the air photography of 1978 (SX6763, 6863).

5.9. Peat Cutting

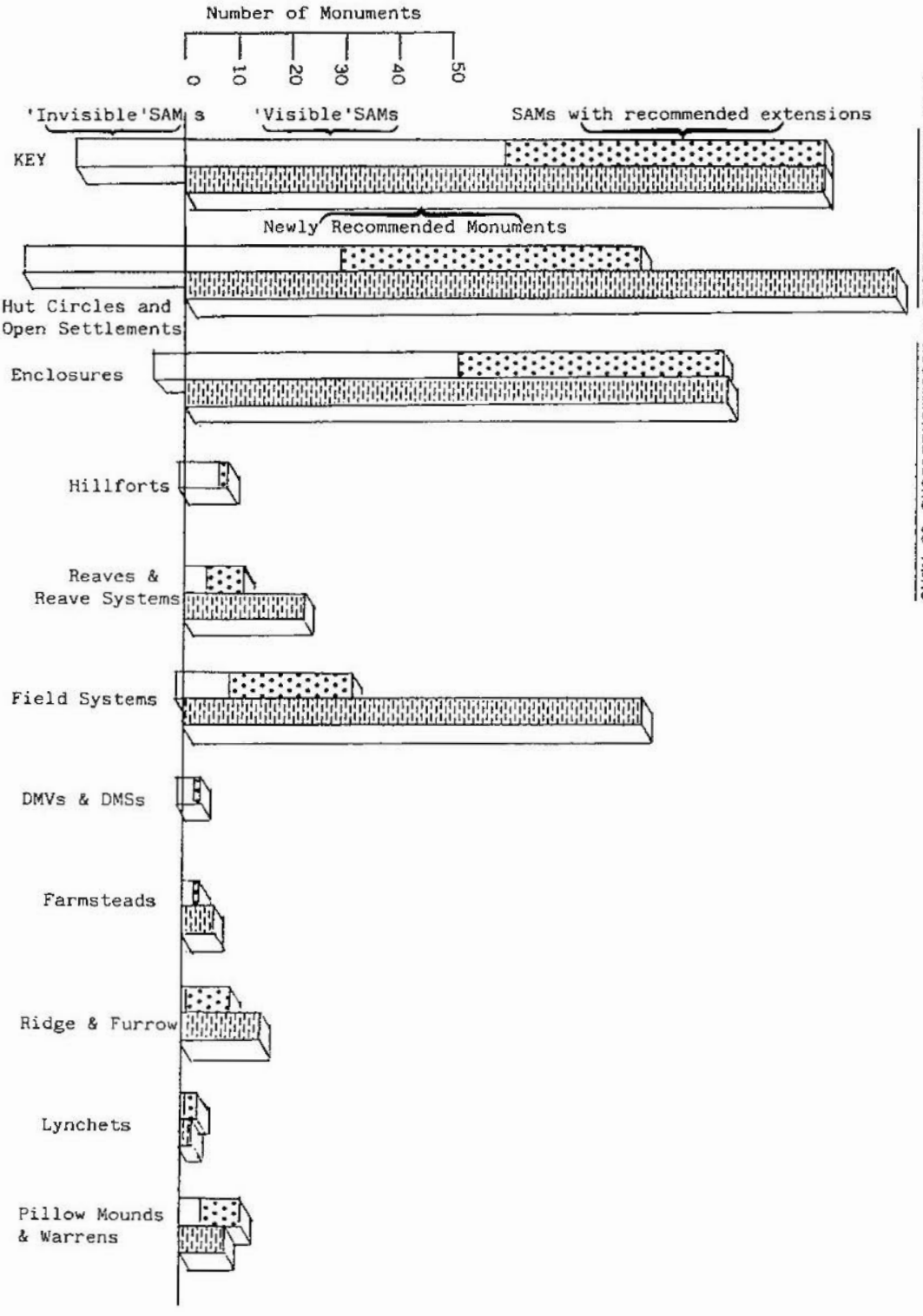
Throughout the survey a deliberate attempt has been made to map schematically all traces of domestic and commercial peat cutting visible on the air photographs. This is the first time any such mapping has been attempted for Dartmoor. No peat cutting has been recommended for scheduling and no example has been treated as a 'monument'.

The map overlays show by means of interrupted lines the axes of rows of peat-ties (or 'turf-tyes'), each of which is made up of several 'journeys'. Rows of peat-ties often fan out from 'summit' points. It has not been possible to distinguish between domestic

and commercially worked areas. Peatworks, or the groups of buildings concerned with the commercial processing of the raw turves, are known, for example the Walkham Head peatworks (SX575807) and the Rattlebrook Head works (SX560871); but the former is not clearly visible on the air photographs and the latter appears as roofed buildings on the available photography and thus does not fall within the mapping criteria.

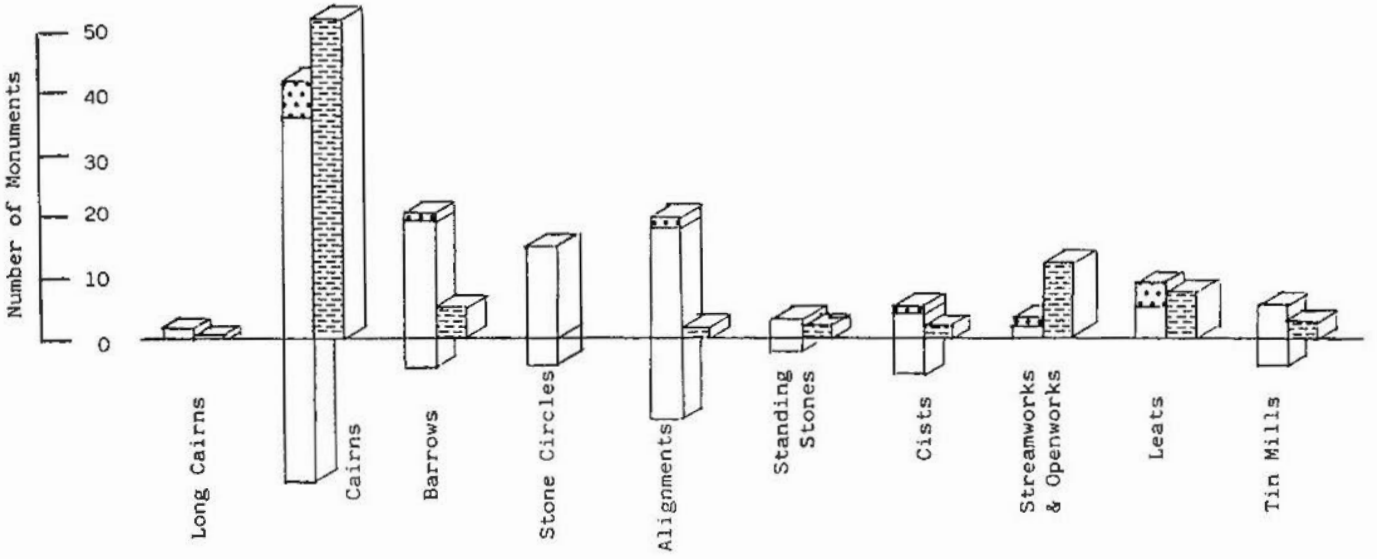
Peat stacks or meilers have not been recorded and few have been positively identified elsewhere, but from air photograph evidence it would be virtually impossible to distinguish them from cairns or barrows without ground inspection. The tracks made by peat cutters' sledges have also not been identified.

In its mapping of peat cutting, this survey raises many questions on working techniques etc., which are not explained in the existing literature, and so provides a foundation for new research in this field in the future.



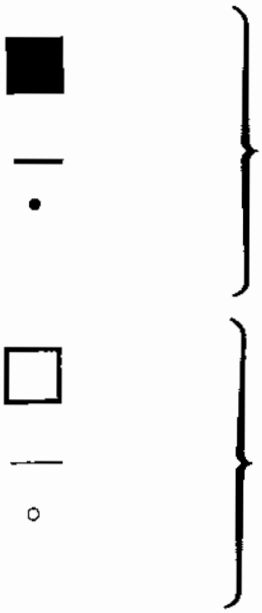
5.10 Monument Classes - Recommendations to HBMC

5.10 Monument Classes - Recommendations to HBMC (Continued)



DISTRIBUTION MAP 1 KEY

Scheduled Ancient Monuments and RCHME Recommendations



Scheduled areas

Areas recommended to HBMC for consideration in proposed preservation policy

SCALE: 1:50,000

DISTRIBUTION MAP 2 KEY

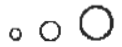
Number and density of hut circles per square kilometre

Number of hut circles per km^2

SCALE: 1:50,000

DISTRIBUTION MAP 3 KEY

Prehistoric and Medieval Archaeology (without hut circles)



Enclosure- no internal feature(s)
small, medium and large

Enclosure- with internal feature(s)
small, medium and large

Hillfort

Main reave, terminal reave, contour reave

Parallel reave system

Fossilized reave system

Field system

Deserted Medieval site/ farmstead

Ridge-and-furrow

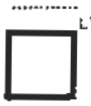
Lynchet

Pillow mound(s)

Warren

Cairn, barrow

Stone circle, ring cairn



Alignment

Lydford (old town and defences)
and South Zeal village street and burgage plots

(For distribution of hut circles see distribution map 2)

SCALE: 1:50,000

DISTRIBUTION MAP 4 KEY

Industrial Remains

Area of mineral extraction, small, medium and large

* Trial pits, shafts

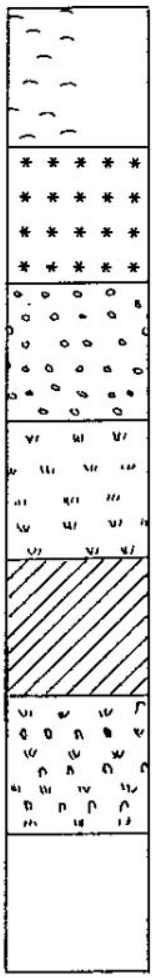
L Leat

Industrial building(s)

SCALE: 1:50,000

DISTRIBUTION MAP 5 KEY

Vegetation



Blanket and Valley Bog

Heath

Vaccinium Moorland
(Whortleberry)

Unimproved Grassland

Unimproved Grassland
invaded by Bracken

Unimproved Grassland
with Gorse

Improved Grassland,
Arable, Woodland and
other developed or
disturbed land.

N.B. This map has been based upon information from: 'The Vegetation of Dartmoor' (Ward, et al, 1972); 'Map of Moor and Heath' (Dartmoor NPA, 1983); 'Soils and their use in South West England' (Findlay, et al, 1984); and the Ordnance Survey 1:25,000 Map of Dartmoor, 1984; with amendments, particularly for the SW area.

SCALE: 1:50,000

References and Select Bibliography

Austin D., Doggett R.H., Walker M.J.C., 1980
Farms and fields in Okehampton Park, Devon: the problems of studying medieval landscape, Landscape History 2

Balaam N.D., Smith K., Wainwright G.J., 1982
The Shaugh Moor project: Fourth Report - Environment, context and conclusion, PPS 48

Beresford G., 1979
Three deserted medieval settlements on Dartmoor: a report on the late E. Marie Minter's excavations, Med.Arch. 23

Booker F., 1974
The industrial archaeology of the Tamar Valley

Bonney D.J., 1971
Former farms and fields at Challacombe, Manaton, Dartmoor, in Gregory K.J. and Ravenhill W.L.D., (eds.), Exeter Essays in Geography 83-91

Broughton D.G., 1968-9
The Birch Tor and Vitifer Tin Mining Complex, Trans. Cornish Inst. of Engineers 24

Collis J., 1978
Fields and settlements on Shaugh Moor Dartmoor, in Bowen H.C. and Fowler P.J. (eds.), Early Land Allotment, BAR 48

Collis J.R., 1983
Field systems and boundaries on Shaugh Moor and at Wotter, Dartmoor. Proc. Devon Arch.Soc. 41

Collis J.R., Gilbertson D.D., Hayes P.P. and Samson C.S., 1984
The Prehistoric and medieval field archaeology of Crownhill Down, Dartmoor, England, J. Field Arch 11

Dartmoor NPA, 1977
Dartmoor National Park Plan

Dartmoor NPA, 1978
Archaeology of Dartmoor - an introduction

Dartmoor NPA, 1983
Dartmoor National Park Plan, First Review 1983

Dearman W.J., 1964
Dartmoor: its geological setting, Dartmoor Essays, Devon Assoc.

Edmonds E.A., McKeown M.C. and Williams M, 1975
British Regional Geology: South West England HMSO

Emmett D.D., 1979
Stone Rows: The traditional view reconsidered, Proc.Devon Arch.Soc. 37

Findlay D.C., Colboume G.J.N., Cope D.W., Harrod T.R., Hogan D.V. and Staines S.J. ,1984
Soils and their use in South West England, Soil Survey Bulletin 14

Fleming A., 1978
The prehistoric landscape of Dartmoor, part 1: South Dartmoor, PPS 44

Fleming A., 1980
The cairnfields of north-west Dartmoor, Proc.Devon Arch.Soc. 38

Fleming A., 1983
The prehistoric landscape of Dartmoor, part 2: north and east Dartmoor, PPS 49

Fleming A., 1984
The prehistoric landscape of Dartmoor: wider implications, Landscape History 6

Fleming A. and Collis J., 1973
A late prehistoric reave system near Cholwich Town, Dartmoor, Proc.Devon Arch.Soc. 31

Fleming A. and Ralph N., 1982
Medieval settlement and land use on Holne Moor, Dartmoor: the landscape evidence, Med. Arch. 26

Fox A., 1954
Celtic fields and farms on Dartmoor, PPS 20

Fox A., 1954
Excavations at Kestor, an early Iron Age settlement near Chagford, Devon, Trans.Devon Assoc. 86

Fox A., 1973
South West England

Gawne E. and Somers Cocks J.V., 1968
Parallel reaves on Dartmoor. Trans. Devon Assoc. 100

Gilbertson D.D. and Collis J.R., 1982
Mapping three millenia of settlement and land-use on Crownhill Down, South-West Dartmoor. Field Studies 5

Greeves T.A.P., 1980
A History of Whiteworks Tin Mine part one: 1790-1848, Plymouth Mineral and Mining Club J. 11

Greeves T.A.P., 1985

The Archaeology of Dartmoor from the Air, Dartmoor NPA

Grinsell L.V., 1978
Dartmoor Barrows, Proc.Devon Arch.Soc. 36

Grinsell L.V., 1983
The Barrows of South and East Devon, Proc.Devon Arch.Soc. 41

Hamond F.W., 1979
Settlement, Economy and Environment on Prehistoric Dartmoor, Proc.Devon Arch.Soc. 37

Harris H., 1968
The Industrial Archaeology of Dartmoor

Hoskins W.G., 1954
Devon

Linehan C.D., 1967
Deserted sites and rabbit-warrens on Dartmoor, Devon, Med.Arch. 10

Northmore T., 1825
Of the ancient Dykes or Division-lines on Dartmoor

Riley D.N., Edwards D., Gates T, Hampton J., Whimster R.P., 1985
The Mapping of Archaeological Evidence from Air Photographs, Aerial Archaeology 11

Silvester R.J., 1979
The Relationship of First Millenium Settlement to the Upland Areas of the South-West, Proc.Devon Arch.Soc. 37

Smith K., Coppen J., Wainwright G.J., Beckett S., 1981
The Shaugh Moor Project: third report-settlement and environmental investigation, PPS 47

Timms S., (ed.), 1980
Archaeology of the Devon Landscape

Wainwright G.J., Fleming A., Smith K., 1979
The Shaugh Moor Project: first report, PPS 45

Wainwright G.J., Smith K., 1980
The Shaugh Moor Project: second report - the enclosure, PPS 46

Ward S. D., Jones A. D., Mantan M.M., 1972
The Vegetation of Dartmoor, Field Studies 3

Worth R.H., 1967
Dartmoor (First published 1953).

APPENDIX 1

HEMERDON BALL WASTE DISPOSAL SCHEME, CROWNHILL DOWN

(Parish: Shaugh Prior)

Map Extract from RCHME Dartmoor Air Photograph Project.

Derived from 1:10,560 map overlays for SX56SE and SX55NE.

June 1985

G.SOFFE

Introduction

The area under consideration is on the SW edge of Dartmoor, immediately south of the china clay extraction areas of Shaugh Moor and Lee Moor and just NE of the modern urban settlements of Plymouth and Plympton.

The vegetation consists of open moorland pasture with extensive patches of gorse and heather covering the west facing slopes of a spur which extends SW from the higher moorland of the main Dartmoor massif. The area is therefore an almost unique survival of moorland landscape at this altitude (100-230m OD). Other land at comparable altitude around the margins of Dartmoor has long been taken in for more intensive farming, settlement or mineral extraction.

Geology and soils provide another significant factor. They differ from the rest of the open moor in being made up of brown podzolic soils (of the Manod Association) covering hard mudstones and slates of the metamorphic aureole which forms a margin to the main granite mass of Dartmoor (Findlay et al, 1984, 227-30).

Although the area lies just outside the boundary of the National Park, its close proximity to Plymouth and Plympton, and its separation from the rest of Dartmoor by the china clay extraction areas to the north, mean that it provides an easily accessible area of amenity to the local population (Dartmoor NPA, 1977, esp. maps 7, 9 and 10).

Archaeology

All features have been manually plotted from oblique and vertical air photographs taken between 1946 and 1985. They have been drawn onto a translucent overlay which should be used in conjunction with the appropriate 1:10,560 O.S. maps. Except in a few instances, only features visible on air photographs have been depicted. The standard conventions for the project have been used but for the purposes of this map overlay an experiment of three colours is used to indicate archaeological features. Those dating from prehistory up to the medieval period have been shown in black. Industrial features (medieval to post-medieval) are in green, and areas of recent land disturbance from mineral extraction, have been outlined in red. A list of grid references for lettered features referred to below, has been appended to this report.

It should be noted that the extensive patches of gorse and heather covering the moor in this area, have restricted overall ground visibility by about 20%. Some monuments, known to exist from field inspection, such as the slight mounds of Bronze Age round cairns or barrows (e.g. at B) cannot be recorded by air photography for this reason. Also the western edge of Crownhill Down is heavily wooded (J), and many archaeological features visible on the moorland pasture clearly run into this wooded area and are thus rendered ‘invisible’ on air photographs. In addition the moorland area is crossed by numerous tracks and footpaths, which have made the recording of leats particularly difficult.

Archaeological Features: Prehistoric to Medieval

Dartmoor is well known for its large numbers of antiquities but there is a particularly high concentration of them in its SW comer. Just north of Crownhill Down these have been the subject of recent intensive survey and examination in projects carried out on Shaugh Moor and in the Plym Valley by the DOE Central Excavation Unit and the Archaeology Department of Edinburgh University. Many antiquities are Scheduled Ancient Monuments. However, on Crownhill Down itself only part of the very fine north-south linear cairn cemetery adjacent to the Old Bottle Hill Leat (A), has been scheduled. This is the finest example of a linear cairn or barrow cemetery on Dartmoor.

West of it is a similar cemetery comprising a line of five cairns running east-west, and three outliers (B). All but one survive as very slight mounds, which together with a very thick covering of gorse and heather, renders them virtually unrecognisable on air photographs. For this reason they are not plotted, but their approximate position has been shown on the overlay. (It should be noted that from field inspection these cairns appear more substantial than another group excavated by the Central Excavation Unit on Shaugh Moor (Site 10, Wainwright et al, 1979, 1-33).

Further north (C) are two further round cairns near the sites of possible hut circles.

The plotted detail suggests that the two main groups of round cairns occupy an area which may well have been reserved open pasture in late prehistory, bounded on its north side by a reave (D), to the north of which the prehistoric landscape is by contrast enclosed by a regular series of ancient field boundaries. These represent the southern most extension of the Ridding Down parallel reave system. This system may derive from a terminal reave now obliterated by the line of the road from Tolchmoor Gate to Piall Bridge (E), which is presumably an extension of the Saddleborough main reave. Parts of this system (F) are fossilized into the modern field boundary pattern.

Incorporated into this reave system are the remains of a possible prehistoric enclosure (G) which has been utilized as the focus of a small medieval farmstead, of which the remains of two possible longhouses can be identified. Traces of other possible long-houses and associated field boundaries (H) confirm medieval settlement elsewhere in the area, but the features associated with this activity clearly run into the wooded area of Fernhill and Hooksbury Wood (J) which forms the western margin of Crownhill Down, and so cannot be detected on air photographs or plotted on the overlay.

A series of close parallel low banks (K) are very unusual features. They may be prehistoric in origin but their association with leats may suggest a later date.

Compared with the Plym Valley and Shaugh Moor to the north, Crownhill Down presents relatively little evidence of enclosed and unenclosed hut groups. It appears to lie on the edge of land occupied by this type of settlement where prehistoric enclosed

fields abutted open grazing land reserved during the third and second millenium BC for funerary monuments, but settled again and extensively worked for tin in medieval times.

Industrial Archaeological Features

Industrial activity finds its most striking manifestation in a very fine example of medieval and later tin working. It takes the form of an openwork over one km. long from east to west and up to 250m. wide (L). The worked area has scarped sides up to 6m. deep and it is filled with tinners' shafts, trial pits, and waste heaps (not depicted in detail on this overlay). The west end of the openwork runs into Lower Hooksbury Wood, where it is not visible on air photographs. It is served by numerous leats running in from north and south and the actual remains of some mining buildings appear to survive in places, particularly at Wheal Florence (M) where the remains of a whim platform can also be recorded. A very unusual alignment of pits (N), presumably derives from mineral prospecting but their date and specific function are unknown.

Areas of Recent Destruction from Mining and China Clay Working

These areas also contain substantial industrial remains, mostly recorded on the OS maps and some still in use. Several industrial monuments recorded by the National Monuments Record and the Devon County Council Sites and Monuments Record are contained within them. Most of these are not easily recorded by air photographs and have not been mapped on the overlay. Two alignments of pre-1947 bomb craters can however be identified and have been depicted in red.

Conclusion

It should be noted that the evidence mapped and briefly outlined above has been recorded from air photographs and must be used in conjunction with information from other sources. Difficulties, particularly from the masking effects of ground vegetation have limited the extent to which air photographs can give a confident view of the archaeological potential of the area.

National Grid References of Sites Mentioned above

A	SX 572598
B	SX 566598
C	SX 580613
D	SX 573605
E	SX 580616 - 596604
F	SX 580608
G	SX 575610
H	SX 5660 and 5760
J	SX 5559
K	SX 569599
L	SX 559595 - 573595
M	SX 568595
N	SX 563598

APPENDIX 2.

SMR and HBMC Input Forms and Lists (Examples).

1. SMR Input Form (monument already recorded in some measure by SMR).
2. SMR Input Form ('new' monument recorded by this Project).
3. HBMC Input Form.
4. HBMC Input List.

CHN AIR PHOTO UNIT DARTMOOR PROJECT	PAR= ✓	
TM= ENCLOSURE	NGR= SX	NUM= SX 66NW/35

ES= fragment of enclosure (approx 0.8 ha) with two hut circles. Partially destroyed by lane and stream work.

Y= lane/ hut circles / stream work.

FP NUM APH=	REF OS=

SAM	2 DESTRUCT	3 FRAG/VUL	4 RISK	5 SURVIVAL CONDITION	6 CLASS PERIOD	7 RISK		8 GROUP VALUE/CHR DEPTH
✓	✓					A	B	✓
SC1						C		

RCHM DARTMOOR PROJECT input

DEVON COUNTY SITES & MONUMENTS REGISTER

PAR = Moretonhampstead/Moretonhampstead (Teignbridge)

ITM = Parallel Rows System. NGR = SX 7690 8690 NUM = SX 78 NE/110

DES = Possible parallel rows system visible, showing broad associations in alignment with other rows systems to the North and North East (RCHM APP 1985)

EY =

CH = | LIS =

EF = APH= ~~NMP SX~~ RAF CPE UK 2082/4401 (19/5/1947)

	2. DESTRUCTION	3. FRAGILITY/VULNERABILITY	4. RISK	5. SURVIVAL/CONDITION	6. CLASS/PERIOD	7. RARITY	8. GROUP VALUE/CHRONOLOGICAL DEPTH
		✓	✓ (Part)			A / P / C	✓

CHME DARTMOOR PROJECT
nput of sites and monuments recommended for consideration in HBMC preservation policy

AM Site Number(s) if any	Map Number	Devon SMR Number(s) on overlay
501	SX 66 NW	35
ocal Authority/District (s)	Parish (s)	NGR(s)
South Hams	Shaugh Prior	SX 601671
ite Name	Reference No:	Also refer to
Village Settlement W. of Plym Stops.	2	

escription An enclosure is visible on a N-facing slope above the confluence of the River Plym and Lavcombe Brook. A leat appears to have destroyed part of the north wall, but two hut circles are visible inside.

te Type(s) leat ised Settlement,	Period - general Prehistoric, medieval, postmedieval	Period - Specific Bronze Age
orm Standing monument	Land Class (HBMC) & date of AP information Heathland	
oportion of site scheduled (if any) 100%	Survival within scheduled area (if any) 100%	Condition fair.

eservation Potential The present extent of the scheduled area appears to be satisfactory.

her notes (if necessary)

The information on this form is derived from Air Photograph evidence and should always be used in conjunction with the relevant OS 1:10,560 map, the plotted map overlay, and the Devon SMR numbered overlay and site record forms.

.CHME DARTMOOR PROJECT 1985

LIST OF MONUMENTS AND AREAS THAT MAY MERIT STATUTORY PROTECTION

1:10,560 Map number: SX 56 NE Sheet 1 of 2

Reference Number *	SAM No. for Revision of existing schedule	Unscheduled	Threat	Follow-up field survey required
1	320			
2	432			
3	383			
4	569			
5	568			
6	570			
7	274	✓ part		
8	591	✓ part		
9	592			
10	492			
11	576			
12	493			
13	499			
14	500			
15	498			
16	571	✓ part	Mechanical clearing of western leat	
17	491			✓
18	1001			
19	884	✓ part		
20	1002			
21	839			

*NB: Each monument and area will have its boundary and individual reference number shown on a separate overlay for each map.
For further information on monuments and areas, please refer to HBMC and Devon SMR Input Forms.

If you require an alternative accessible version of this document (for instance in audio, Braille or large print) please contact our Customer Services Department:
Telephone: 0870 333 1181
Fax: 01793 414926
Textphone: 0800 015 0516
E-mail: customers@english-heritage.org.uk