

RESEARCH
REPORT

HISTORIC
LANDUSE
ASSESSMENT

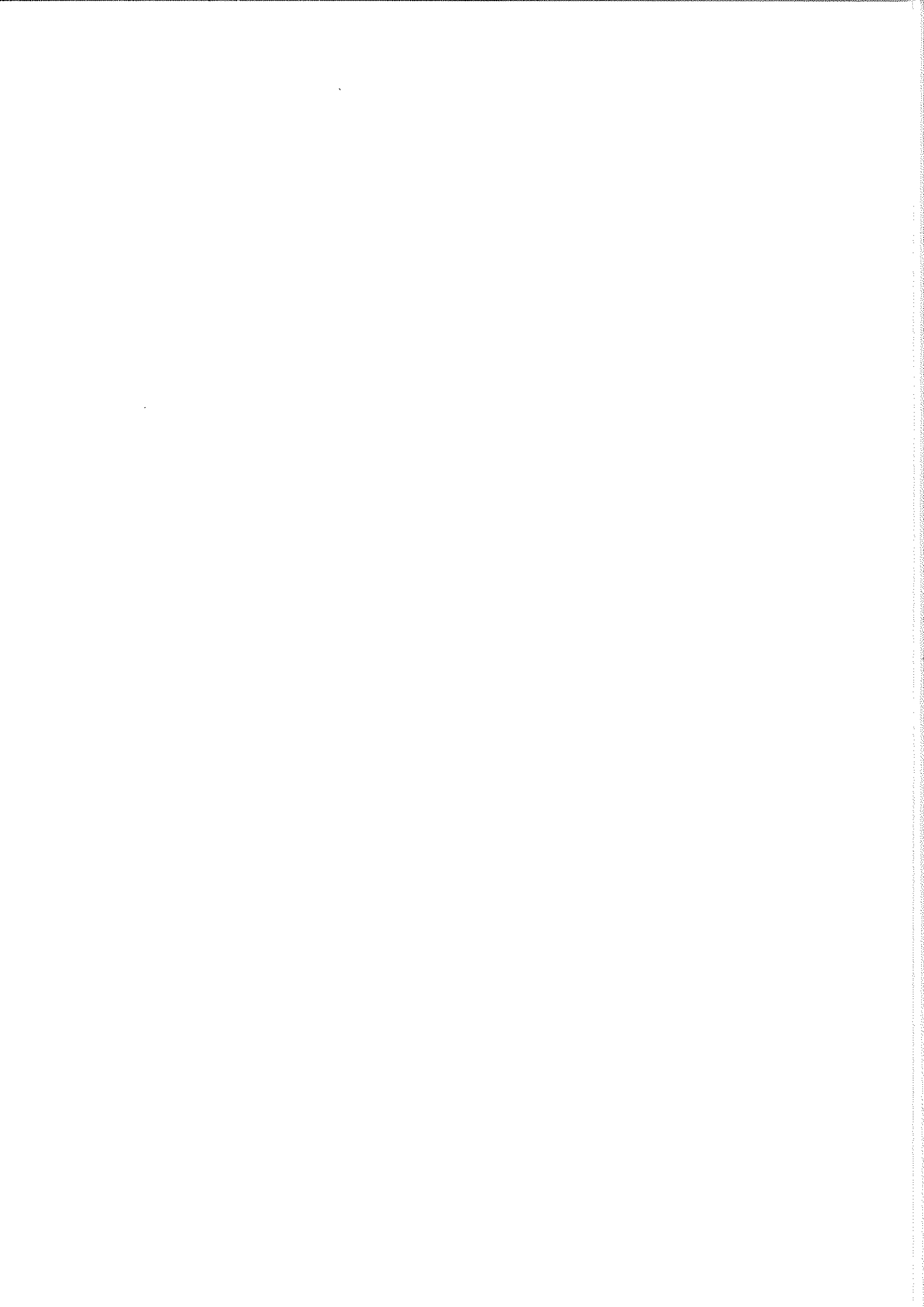
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Royal
Commission on the
Ancient and
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Monuments of
Scotland



RESEARCH

REPORT

HISTORIC LANDUSE
ASSESSMENT
(HLA):
DEVELOPMENT
AND POTENTIAL OF
A TECHNIQUE FOR
ASSESSING
HISTORIC LANDUSE
PATTERNS

Report of the Pilot Project
1996 - 1998

by

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Piers Dixon
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Cover photograph: View of Kirkhill, Liddesdale, Borders from the west, showing a prehistoric settlement partly overlain by pre-Improvement fields and rig with rectilinear fields of the Improvement period in the background. © Crown copyright

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It should be noted that:-

- *each illustration is captured from a computer screen image and reproduced photographically via a Tiff image;*
- *north is pointing up the page for all of the maps;*
- *where shown a simple Ordnance Survey Strategy map is used to assist in placing the HLA in a geographic context;*
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FOREWORD

Historic Scotland is responsible for the care and protection of the archaeological and architectural heritage in Scotland. To many the archaeological heritage is formed of individual monuments, buildings or sites - chambered tombs, hut-circles, brochs and castles - but in fact the built heritage has a distinct landscape dimension. The individual monuments and buildings, which appear as isolated dots on a 1:10,000 Ordnance Survey map, often form part of more extensive landscapes of human settlement which cover large areas of Scotland. Scottish Natural Heritage has pioneered a programme of Landscape Character Assessment across Scotland which is now being developed to form a regional basis for its policy. Cultural heritage managers have not, to date, fed appropriate archaeological and historical information into the majority of these assessments. As a result, Historic Scotland and the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) set up a project in 1996 to develop a methodology for Historic Landuse Assessment. This project was intended to map the historic landscapes which go together to form modern Scotland and to develop a methodology to input information about the built heritage into landscape debates.

This report is the first Research Report commissioned by Ancient Monuments Division in this series and is a joint publication with the RCAHMS. It gives the results of a two-year pilot project involving the development of a GIS-based Historic Landuse Assessment for a number of pilot areas across Scotland. The pilot programme has been a success and Historic Scotland and RCAHMS are now looking to extend the approach to cover the remainder of Scotland. This process will also involve a programme of evaluation or assessment of the results of the HLA mapping process which will enable the use of the HLA information in a range of programmes.

Professor David Breeze
Chief Inspector of Ancient Monuments
January 1999, Edinburgh

EXECUTIVE SUMMARY

HLA is a technique for assessing the built heritage aspects of the landscape. Its methodology is inspired by the Historic Landscape Character Assessment of Cornwall (Herring 1998) but the methods have been adapted substantially for the Scottish context. In addition, the use from the start of the project of a GIS has enabled a flexible system for historic landuse analysis to be developed. The methodology is outlined in this report, together with an account of the results of the HLA mapping of six pilot areas spread across

Scotland. The results of HLA mapping also require a process of assessment to provide a valuation of the varying Landuse Types which are defined. This process is only just commencing, but provisional aspects of the assessment of Landuse Types are discussed in this report. In the concluding section the potential value of HLA for a variety of purposes is explored. Three appendices include details of the methodology and results of the pilot stage of the HLA.

1. OBJECTIVES OF HISTORIC LANDUSE ASSESSMENT

1.1 Introduction

The Historic Landuse Assessment (HLA) Pilot Project was established in October 1996 by Historic Scotland and the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS). It is a partnership venture which aims to explore the viability of creating a method of assessing historic landuse patterns in Scotland. HLA is built on the platform of the RCAHMS Geographical Information System (GIS).

The origins of HLA lie in the developing practice of Landscape Character Assessment (LCA), which has generated a new and more informed approach to landscape issues. Scottish Natural Heritage (SNH) has initiated a national programme of LCA with particular purposes and objectives. However, an assessment of these documents by cultural heritage managers indicates that the scale of resolution at which they are undertaken does not enable historical and archaeological information to be used to its full potential. This historical dimension is important as an aid to our understanding of the processes behind the formation of the current landscape.

Two differing approaches to evaluating the historical dimension on the landscape have been taken. In Cornwall a map-based approach has been developed for the whole county (Herring 1998), while in Wales a Register of landscapes of outstanding or specific historic interest has been created (CADW 1998). Today's landscape contains a record of prehistoric and historic events upon its surface, and it is important to understand this to inform the wider landscape debate. HS and RCAHMS therefore agreed to form a partnership to develop and test an appropriate mapping methodology for Scotland nested within a GIS.

The main value of HLA lies in its potential to enable the input of built heritage interests into the management of landscape change, although the technique has been found to have several other potential uses. It should be stressed that, in the context of the management of the landscape, it is not the intention to suggest that broad areas of the landscape should be fossilised in their current form because of their historic interest. Rather, the approach aims to map historic landuse influences in order to provide a body of information that will allow priorities to be drawn within wider landscape management which

gives proper weight to the historic dimension of the landscape and generally informs decision making by land managers. HLA can produce multiple maps based on different sets of criteria. The full value of the approach can most easily be appreciated through the use of the GIS system. In addition, HLA will have the greatest potential when a full national coverage has been built up.

The HLA technique is a tool. Its value is likely to be greatest for the evaluation of the cultural landscape. In this report an account is given of the methodology which has been developed to assess and map historic Landuse Types. A number of case studies also begin the process of data analysis and evaluation. HLA is not an end in itself but part of a process which should also involve evaluation of these Landuse Types on a local, regional and national basis and the use of the knowledge gained. This evaluation and subsequent use of the results of HLA should occur as part of discussions of landscape management in the future.

1.2 Purpose of This Report

This report aims to illustrate the potential of the approach using some of the results of the pilot assessments. A number of specific studies are illustrated, using a series of maps at differing scales, focusing upon:

- regional and chronological patterning;
- understanding the evolution of the landscape;
- managing landscape change;
- monitoring landscape change;
- archaeological management;
- informing archaeological survey work.

1.2.1 The relationship of HLA to LCA

It is important to stress the fundamental difference in approach and methodology between LCA and HLA.

HLA - maps the impact of people upon the land surface. This methodology exclusively identifies the anthropogenic and historical elements of the landscape at 1:25,000 scale.

LCA - is specifically designed to assess the

characteristics of the landscape according to a set methodology evolved by SNH based on guidance developed by the Countryside Commission Scotland and the Countryside Commission. LCA is usually used to map the landscape at a scale of 1:50,000. (Countryside Commission 1993; SNH 1998).

HLA and LCA therefore map different elements of the landscape at different scales for different purposes but the approaches would appear to be complementary. The possibility of the integration of the results of LCA and HLA into a single map is currently being explored.

2. METHODOLOGY

2.1 Methods

The mapping process involves the systematic assessment of topographic OS maps, archaeological and historical data in the National Monuments Record of Scotland, the Land Cover of Scotland 1988 (MLURI, 1993), and vertical aerial photographs. The assessment was intended to be a broad-brush exercise, but retaining the topographic detail that would allow the historic landuse to be characterised. The smallest scale of topographic data which included field boundaries was the OS 1:25,000 Pathfinder maps. This was adopted as the scale of capture. It had the added advantage that the smallest scale of data used by any of the above sources was 1:25,000, as in the case of the Land Cover data, and it was close to that of the 1988 aerial photographs that formed the basis of that survey. It had the disadvantage that any feature which is less than one hectare in extent is too small to map at 1:25,000 scale. This means that many individual archaeological sites, including linear sites such as Roman roads, do not show up on the maps that are produced. Groups of structures have been included, with a yardstick, for example, of at least five shielings or three hut-circles per hectare. Small sites can, however, be recovered and used in conjunction with the HLA through the use of the National Monuments Record of Scotland database on the GIS system.

The current landscape is characterised using the OS map as a base, and, by-and-large, the main source of Relict Landuse Types is the National Monuments Record, but across most of Scotland no recent survey (ie since 1985) has been done, and the aerial photographs become more critical as a source. However, the quality of the aerial photographs (time of day, year etc), and the vegetation cover, directly affect the ability to identify and record relict landscapes. For this reason a validation process that involves ground visits to check unconfirmed sites was built into the project. The information from these sources is collated and mapped by the application of a simple but clearly defined series of historical Landuse Types. For ease of use, two main categories of Landuse Type have been defined:

Current Landuse Types - reflecting historic landuse types in current use, which may include types that are in origin several hundred years old, and

Relict Landuse Types - reflecting historic landuse types

that have been abandoned, but which still leave some trace in the landscape.

A glossary of terms has been built-up that includes 42 Current Types and 37 Relict Types of which 12 have Current equivalents. Each type has a reference number that is used to tag the polygons on the map and if a polygon includes relict types a composite number is created. Each Landuse Type is mapped by eye on a tracing-paper overlay of the 1:25,000 map. The HLA map is designed so that every part has a Current Landuse Type, but only where there are visible or mappable relics of past landuse is a relict polygon created. Along with the map a database is also being compiled in Microsoft Access of all the single and multiple types that occur. There is a maximum of three Relict Types in any given area, although it is conceivable that this could be increased for particularly complex landscapes, and there are 246 variations in the database to date.

The resulting composite map is then entered into a GIS system, using GenaMap, to produce topologically correct maps. The digitising is executed on screen using the OS Basic Scale digital map as a base. To speed-up the process of digitising, some data, particularly relating to woodland cover, is pasted in using the MLURI Landcover Data. The polygons are tagged with the historic landuse reference number and attached to an up-to-date copy of the database, so that analyses can be carried out textually. Once entered into the GIS, the complete maps are transferred into Artemis - a more user-friendly Graphical User Interface (GUI). The maps may then be combined with other datasets for further interrogation and analysis (see Murray and Dixon 1995), and themes of the data may be developed, such as the Period Summary that is used in several of the illustrations in this report.

Interpreted data of this sort on Relict Landuse Types, Current Landuse and the survival of field patterns are not available from existing archaeological sources, which makes this a unique resource. However, it must be reiterated that it should be used in conjunction with the National Monuments Record of Scotland database of sites.

2.2 Pilot Areas

To develop the methodology during the Pilot Project, two contrasting landscapes were selected in 1996-7: Skye - a West Highland landscape; and Fife - a highly developed agricultural, industrial and urban landscape. Four trial areas were selected - two on Skye (Trotternish and Waternish) and two in Fife (Cleish and St Andrews). A report on this Pilot Study was produced in March 1997 (Dyson Bruce 1997).

As a result of the success of the first pilot, a second stage to the Pilot Project was developed to run throughout 1997-8. This aimed to extend the methodology by widening the range of landscape types upon which to apply it through a number of additional study areas - Orkney, Cairngorms, Liddesdale (Borders) and the eastern half of the Antonine Wall.

2.3 Note

Further information on the dataset structure or meta data is included in Appendix C, while Appendix A includes a Glossary of Landuse Types. For further details of the methodology and types see Dyson Bruce 1997.

3. SAMPLE AREAS 1996-98

In all, six contrasting areas of Scotland were selected to act as test-beds for the development of HLA methodology (illus 1). Geographically, these ranged from Orkney to Liddesdale and from Skye to Fife, and they were chosen to provide a variety of landscapes which would allow a wide range of HLA issues to be addressed (eg regional variation, afforestation,

archaeological management questions, development pressures).

Illus 1 shows the location of the areas covered by HLA in 1996-98. These include parts of: Skye, Fife, Liddesdale, Orkney, Cairngorms and the Antonine Wall.

*Illus 1 Map of Scotland illustrating the areas which have been studied during the Pilot Project:
Mainland and Sanday - Orkney,
Waternish and Trotternish - Skye,
Kingussie - Braemar transect - Cairngorms,
Cleish and St Andrews - Fife,
East end of the Antonine Wall, and Liddesdale.
For each of the individual Pilot Areas the Current Landuse Types are shown. The Current Landuse Types are listed by colour on the fold-out illus 15 at the back of report.*



3.1 Skye

The areas selected represent the marginal heather and grasslands of Scotland's west coast which have a long history of occupation, currently characterised by crofting communities. These areas are subject to potential commercial afforestation schemes and the resettlement of abandoned crofting areas and townships - both types of development have an impact on the archaeology of the area.

Waternish - had been the subject of a recent Afforestation Land Survey (ALS - a ground survey, carried out to record archaeological landscapes) by RCAHMS, providing a detailed and reliable archaeological data source (RCAHMS 1993).

Trotternish - an adjacent area with similar geographical, topographical, geological and historical characteristics, but without any detailed survey, was selected to form a comparison.

3.2 Fife

Two differing areas were chosen within the highly developed Central Belt of Scotland. These areas have been subject to major changes of landuse over the past two hundred years, including large-scale industrial development and intensive arable farming:

St Andrews - an intensively enclosed and farmed arable landscape, with known extensive archaeological sites, some characterised by earthworks and some identified as crop-marks.

Cleish - an area of enclosed grazing, and isolated upland marginal areas, with extensive urban, industrial and extractive development.

3.3 Liddesdale

This is a marginal landscape with small areas of agricultural improvements and extensive afforestation. It was selected because an ALS has been carried out on the west side of the valley, which revealed evidence of prehistoric, medieval and later landscapes, and, in

particular, what may be the boundaries of medieval assarts (assarts are usually of C12-C14 date and for a fuller definition see Appendix A Relict Landuse Type 126 and Dixon 1997). The remainder of the valley was assessed to discover if similar relict areas could be recorded, and to determine the impact of past afforestation schemes on the archaeology of the valley.

3.4 Orkney

Part of Mainland was chosen to assist in studying the landscape context of a major group of prehistoric monuments. The island of Sanday was also examined to provide a contrast with Mainland.

3.5 Cairngorms

The area studied forms part of the Cairngorm Partnership Area, focusing on the Upper Dee, Feshie and Spey valleys. ALS fieldwork has been carried out in the Mar Lodge Estate (RCAHMS 1995) and part of the north side of the Spey, and the HLA was intended to put this into context. In addition, the Mar Lodge Estate is subject to managed tree regeneration, and thus the HLA has allowed an assessment of the impact of such schemes on relict areas. The area is now being assessed for National Park status and the HLA information may help with the inputting of built heritage interests into the debate.

3.6 Antonine Wall

The east end of the Antonine Wall was chosen to assess the landscape context in which the Wall was placed and to assist in informing archaeological management issues and development pressures. The Wall is a Roman frontier system of great archaeological significance (Hanson and Maxwell 1983) which is set within an area which is highly developed in terms of agriculture, industry, extraction and urbanisation. The monument is under considerable pressure from current development.

4. HISTORIC LANDUSE ASSESSMENT APPLICATIONS

The assessment of the Pilot Project areas not only confirmed the expected regional patterns of Current Landuse Types (Appendix B) but also showed the extent and range of Relict Landuse Types which are of particular archaeological interest.

This section illustrates, with a series of short case-studies, some of the results derived from the Pilot Project Areas and demonstrates a range of applications for HLA data.

4.1 Regional and Chronological Patterning

The first two maps show examples of contrasting regional patterns: the first, a lowland agricultural/industrial/urban mix (illus 2); the second, an upland moorland/rough-pasture/forestry/agriculture mix (illus 3; see Appendix B, Tables 2-10 for greater detail of variations in Current Landuse Types between the various Pilot Areas). Although the two landscapes are dominated by Current Landuse Types, both contain important areas of Relict Landuse Types, many of which are threatened by modern landuse changes.

The second pair of maps (illus 4-5) uses the basic HLA data to highlight areas of relict landscape of different periods.

4.1.1 Regional patterning: Cleish and Liddesdale

Cleish - Current Landuse with Relict Areas (illus 2)

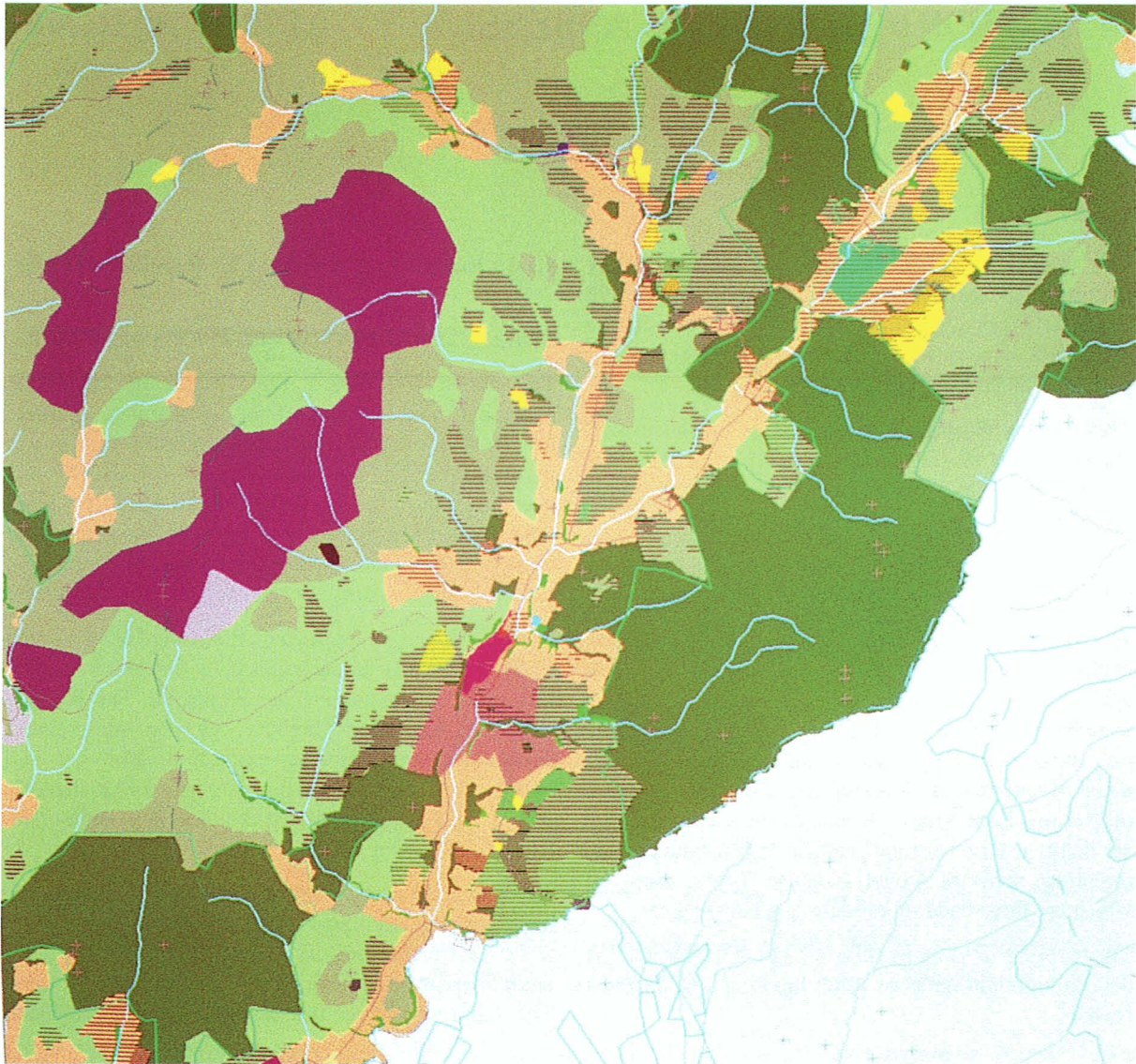
This is an area where rapid landscape change is occurring. The collapse of the deep-mining industry has been accompanied by the expansion of forestry plantations and the development of large-scale opencast mines. On a relatively small scale the Cleish landscape exemplifies the type of developments occurring over much of the Central Belt of Scotland in the wake of the demise of the coal and iron industries.

The Cleish landscape area is dominated by C18 and C19 rectilinear fields interspersed with intensive urban, industrial and extractive developments. The hatched areas indicate relict landuse, eg pre-improvement agriculture and mineral extraction. Policies and Parklands (Relict and Current) are also a characteristic feature of the landscape, eg the extensive Blairadam, Cleish and Aldie estates.

The recent opencast coal mines have had a dramatic impact on the landscape with large areas being subject to the destructive activity of extraction, whereas other areas are now relict having been restored to agriculture. The uplands have been subject to commercial



Illus 2 Map of Cleish, Fife, showing the Current Landuse with Relict Landuse areas. The Current Landuse Types are listed by colour on the fold-out illus 15 at the back of report. The Relict Landuse Types are shown hatched. Scale: 1:150,000.



Illus 3 Map of Liddesdale, Borders, depicting Current Landuse with Relict Landuse areas. The Current Landuse Types are listed by colour on the fold-out illus 15 at the back of report. The Relict Landuse Types are shown hatched. Scale: 1:150,000.

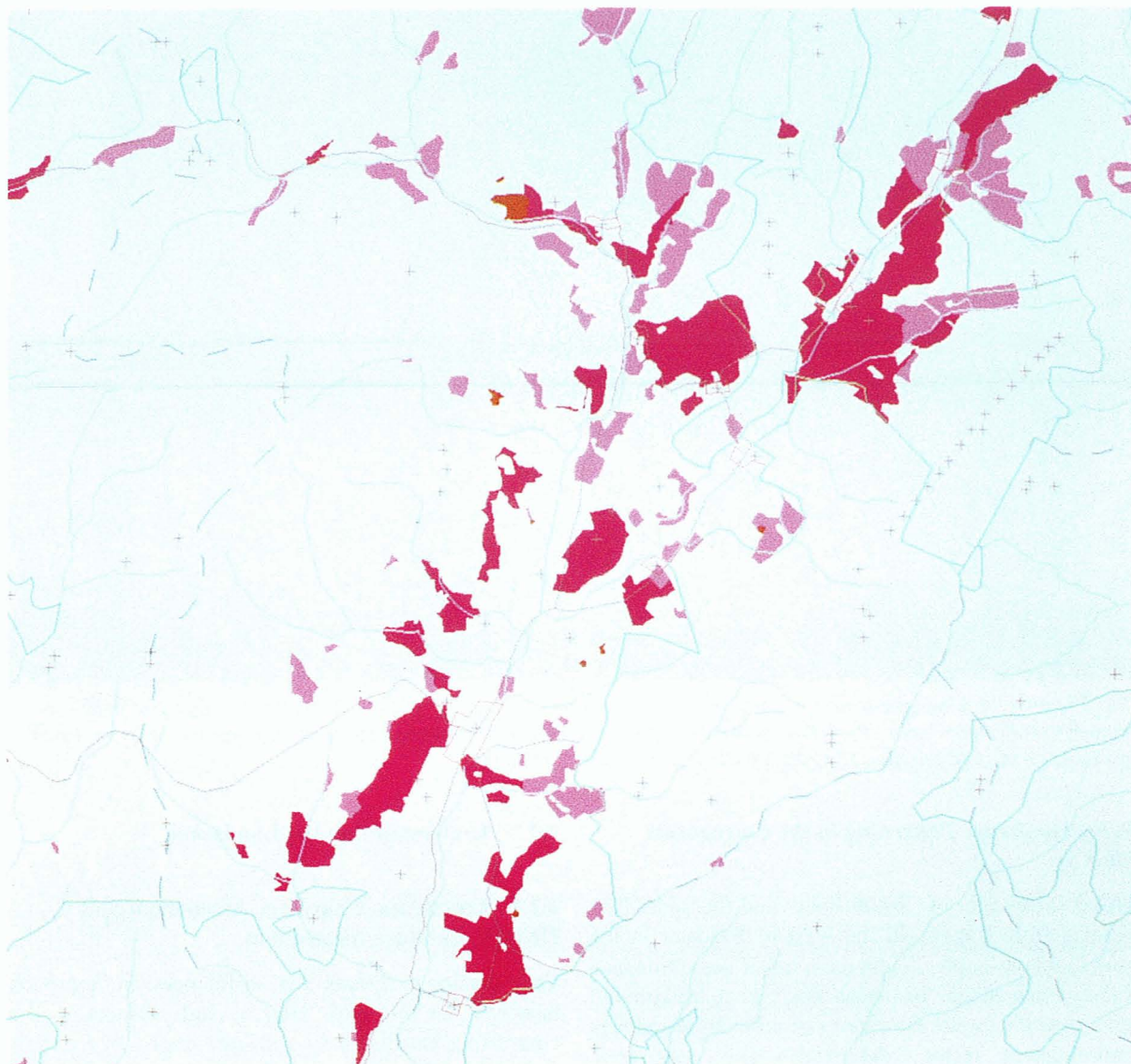
afforestation, which has led to the loss of considerable areas of relict landscapes.

Liddesdale - Current Landuse and Relict Areas (illus 3)

Liddesdale is an area of marginal agriculture. The higher ground is predominantly rough pasture, some of it drained for grazing or managed for grouse shooting, while the favoured areas of low ground are more intensively farmed and are characterised by C18 and C19 rectilinear fields. Newcastleton is an example of an Improvement Period planned village, and it is surrounded by a grid of small fields associated with, but not attached to, the houses in the village. Afforestation has made a major impact on the east side

of the valley, and the area under trees is still expanding (see illus 8). Extensive prehistoric and pre-improvement relict landscapes survive within the unforested rough pastures (hatched on map). The more closely hatched areas are palimpsests of more than one period of Relict Landuse.

In outline, but not in detail, the area is representative of many parts of southern Scotland. It is a landscape that has undergone numerous phases of settlement and agricultural expansion and contraction from the prehistoric period to the present day. During much of the medieval period it lay within a hunting forest, and the impact of this can be seen in the detail of the medieval and later settlement pattern (see also illus 4 and 8).



Illus 4 Map of Liddesdale, Borders, illustrating the Relict Landuse Types which predate the Improvements, summarized by Period. These Relict Landuse Types are listed by colour on the fold-out illus 15 (under Period Summary) at the back of report. Scale:1:150,000.

4.1.2 Chronological depth: Liddesdale and Speyside

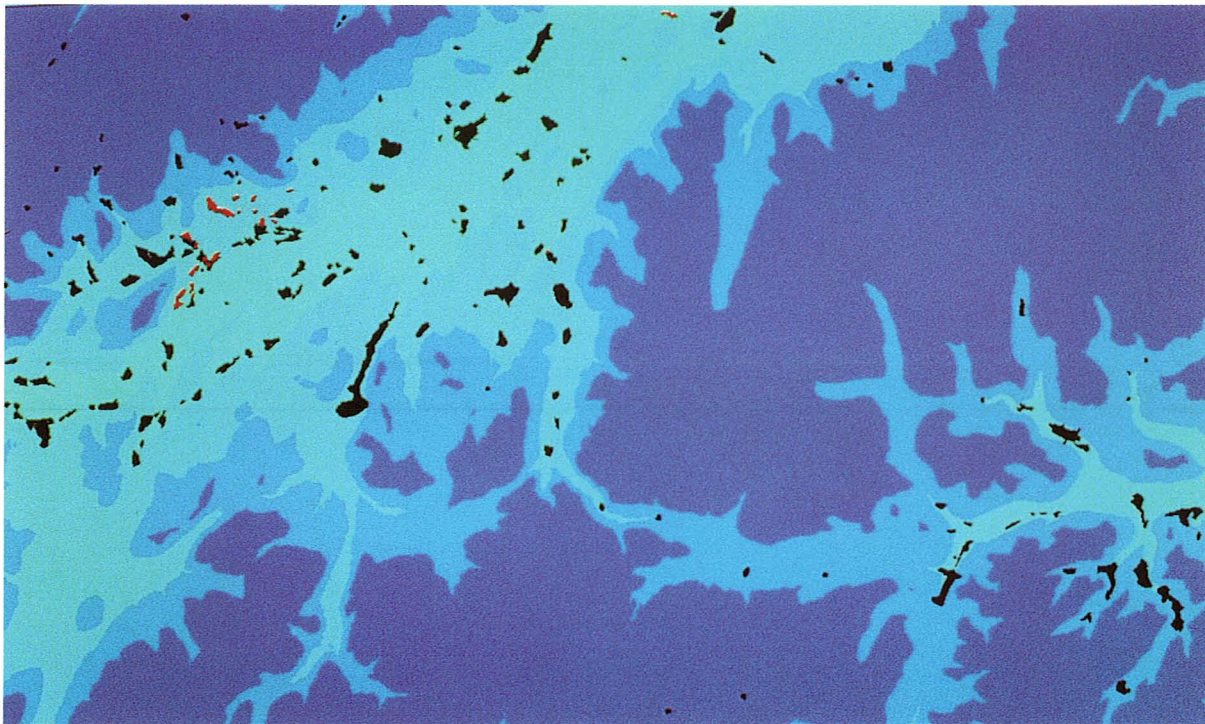
The relict landscapes that survive in Scotland vary in nature and period from area to area, and there is little doubt that, were HLA mapping to be undertaken throughout Scotland, distinctive regional patterns would emerge. The pilot study showed that HLA mapping is particularly well suited to identifying and displaying areas of relict landscape, and this section illustrates the range of types seen in Liddesdale and in the Cairngorms.

Relict Landscapes in Liddesdale (illus 4)

The assessment of Liddesdale described above (illus 3) has demonstrated the survival of extensive and complex relict landscapes, indicating a long sequence of occupation. By selecting specific fields and setting

them on the OS background, a digest of the information shown on illus 3 can be produced which reveals the extent of three major relict landscape types (illus 4), ie field-systems dating to the prehistoric, medieval and post-medieval periods. These represent the surviving fragments of what were once more extensive systems of archaeologically significant cultivation remains, which are now threatened by the spread of commercial forestry.

The map (illus 4) demonstrates the potential for the GIS to be used to highlight important archaeological landscapes, to assess their extent and spatial relationships. It is also useful for identifying which landscapes have chronological depth which might be embedded within today's landscape. This demonstrates the value of HLA as the basis for managing this important cultural resource.



Illus 5 Map of the Kingussie-Braemar transect in the Cairngorm's study area, with the Relict areas of Landuse shown in relation to the contour data. Prehistoric Landuse Types are red and post-medieval are black. The contour data are listed by colour on the fold-out illus 15 at the back of report. Scale: 1:400,000.

Relict Landscape Patterning in the Cairngorms (illus 5)

Illus 5 shows part of Strath Spey and the upper Dee running from Laggan in the west to Braemar in the east. In this example, height data, rather than Ordnance Survey map detail, has been used as a background against which to plot the extents of prehistoric and pre-improvement relict landscapes. The prehistoric remains comprise hut-circles and their accompanying field-systems, while the pre-improvement landscapes include townships, farmsteads, field-systems and shieling grounds.

The examination of these two adjacent valley systems allows comparison of the differing survival of the Relict Landuse Types. As in Liddesdale (illus 4), there is a close correlation between the locations of the prehistoric and the pre-improvement relict landscapes, while their fragmentary nature is again apparent. This fragmentary survival in the rough pasture is due to the continuous agricultural exploitation of the better ground on the valley bottoms, which has left the evidence of earlier remains on the margins. There are clear differences between the two areas: the absence of prehistoric settlement in Deeside is notable and contrasts with the spread of hut-circles on the north side of the Spey valley. The scatter of high level shielings at the north-west corner of the map contrasts with the generally lower-lying shieling grounds along the Dee and its tributaries.

4.2 Understanding the Landscape

4.2.1 Landscape Character Assessment and Historic Landuse Assessment

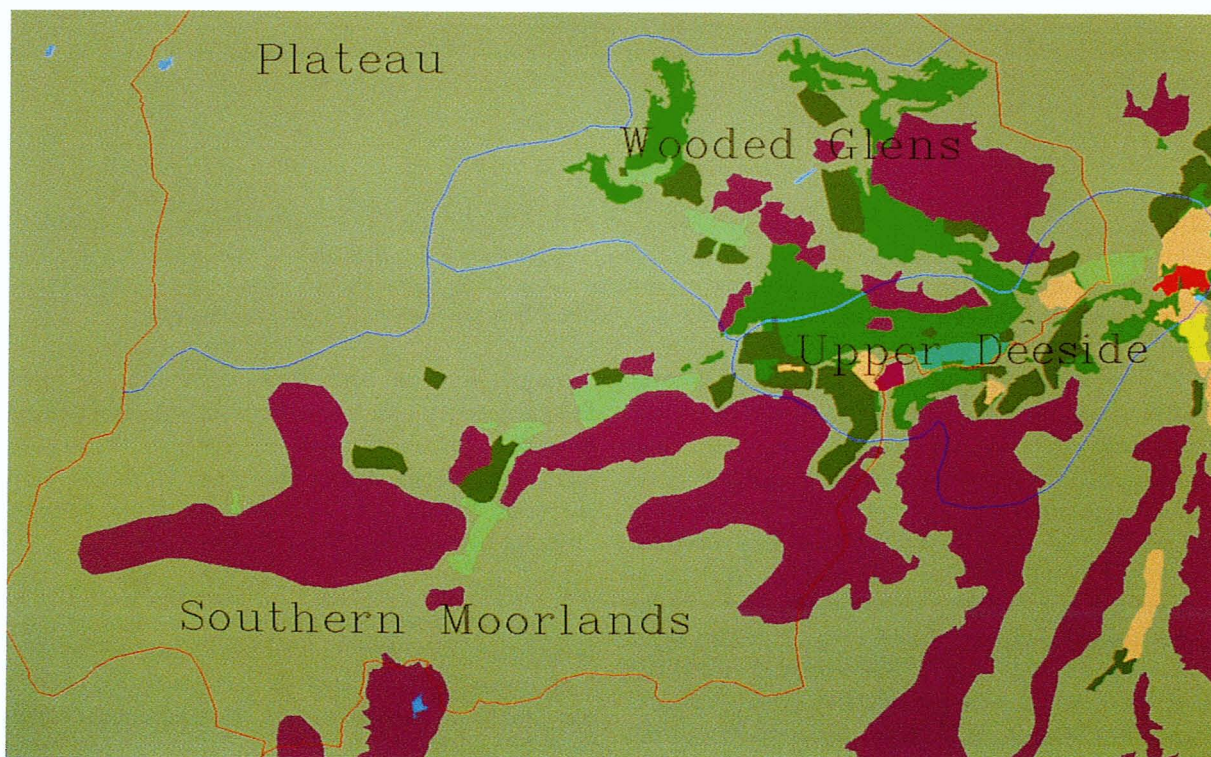
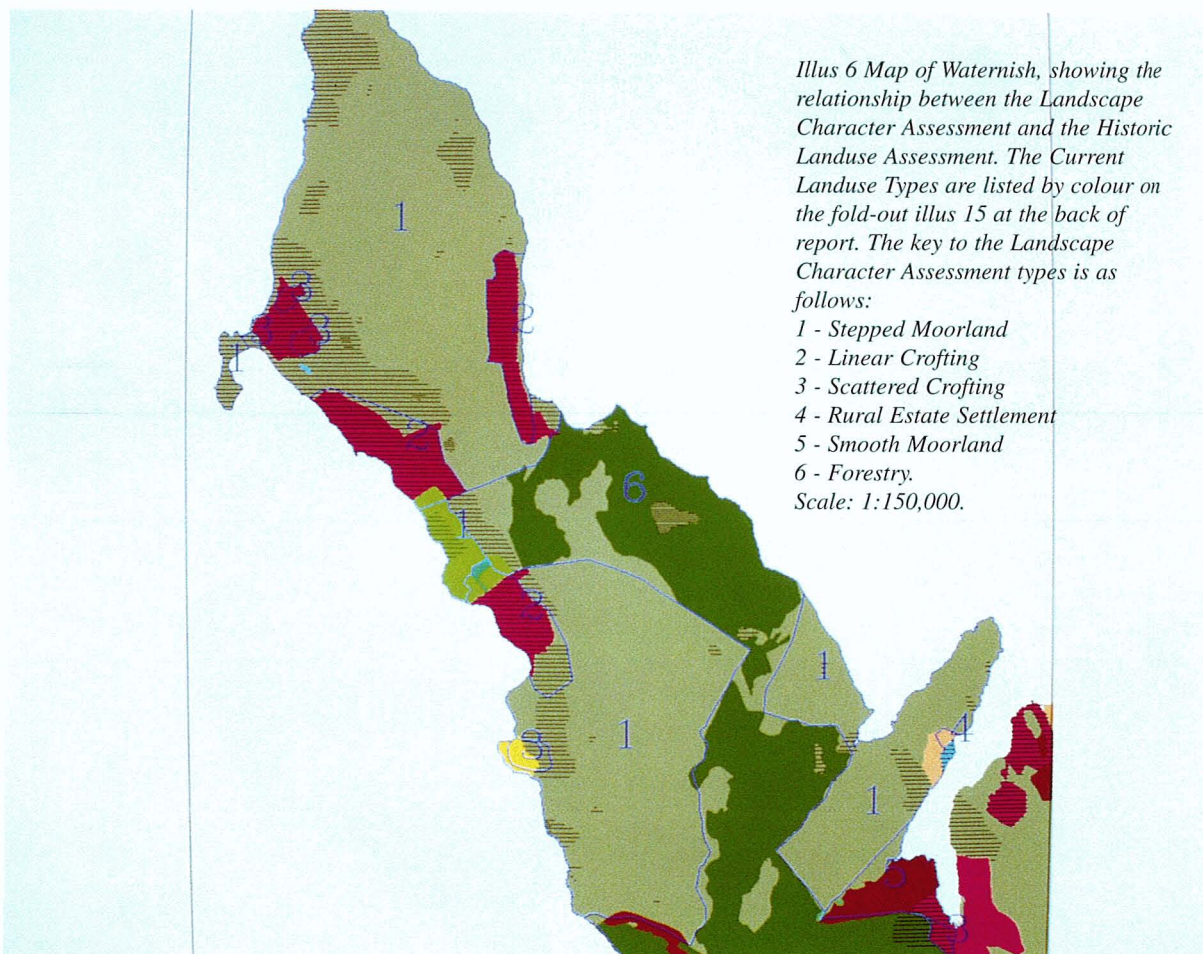
This section explores the differences in approach between LCAs and HLAs, and compares the contrasting results in two sample areas. In the first case, Waternish, there is some agreement between the two approaches, but in the second, part of the Mar Lodge Estate, the two methodologies have produced significantly different maps.

Waternish, Skye LCA and HLA (illus 6)

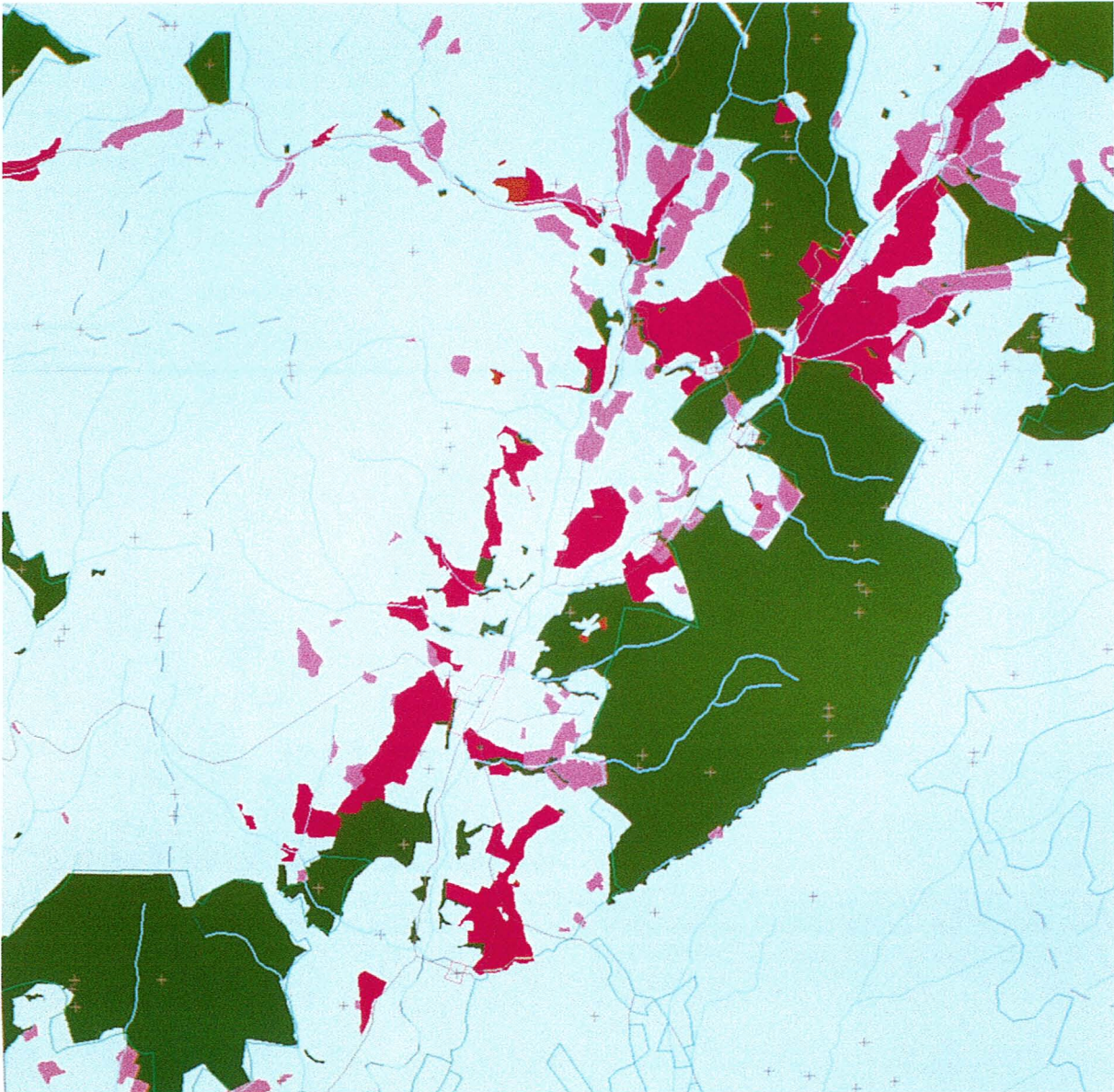
On the Waternish peninsula there is a degree of overall co-incidence between the areas mapped using the LCA methodology and the areas of the Current Landuse Types mapped by the HLA method. The minor differences between the two maps concern details which probably result from differences in the mode and scale of data capture. The HLA map, however, highlights Relict Landuse Types - the extensive relict pre-crofting landscapes which survive around the fringes of the peninsula - which do not show on the LCA map.

Mar Lodge Estate (illus 7)

The close correlation between the LCA and the HLA's pattern of Current Landuse Types surveys that can be



Illus 7 Map of Mar Lodge Estate, comparing the Landscape Character Assessment with Historic Landuse Assessment. The Current Landuse Types are listed by colour on the fold-out illus 15 at the back of report. The Landscape Character Assessment types are identified on the illustration. Scale: 1:200,000.



Illus 8 Map of Liddesdale illustrating the Relict Landuse Types, with the Current Landuse areas of commercial forestry. The Relict Landuse Types are summarized by Period and are listed by colour on the fold-out illus 15 (under period Summary) at the back of report. The dark green areas are those of forestry derived from the relevant Current Landuse Types. Scale: 1:150,000.

seen in the Waternish study is not repeated on the Mar Lodge Estate. Here, the differences produced by the two methodologies are contrasted, with the complexities in the cultural landscape, particularly on the lower ground, not apparent in the broader-brush approach of the LCA survey. This can be understood through a comparison of the complex pattern of Current Landuse Types derived from the HLA with the rather more broad-brush Landscape Character Types derived from the LCA. For example, the LCA category of Wooded Glens includes the HLA Landuse Types for Commercial Forestry, Managed Woodland, Deer Lawn and Rough Pasture.

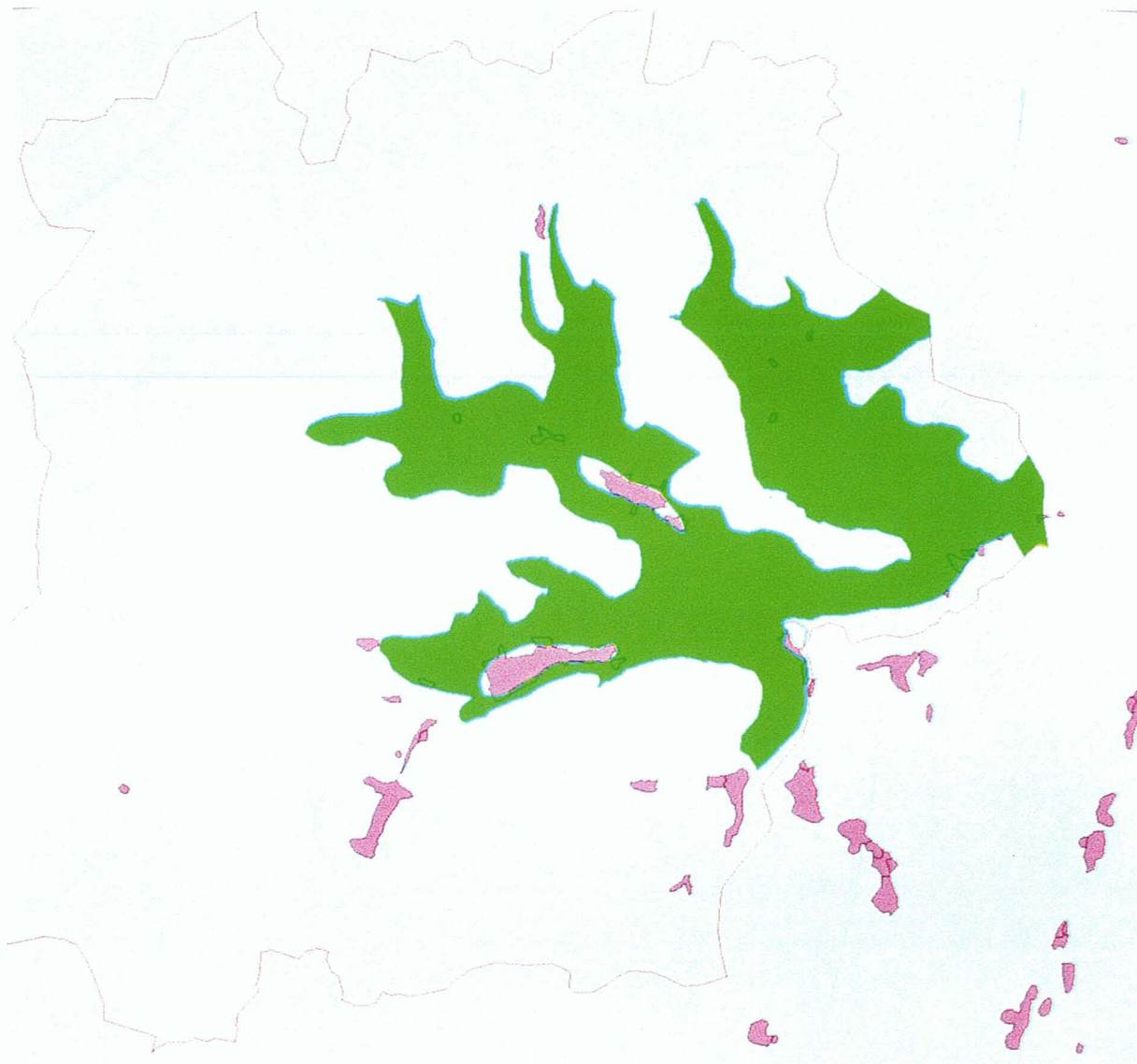
4.3 Managing Landscape Change

HLA mapping has a role to play in the creation of landscape management plans. It can be used, in

conjunction with site data from the National Monuments Record and local Sites and Monuments Records which will often be vital in considering landscape management. HLA can also be used alongside LCAs and the two approaches provide differing but complementary results.

The expansion of commercial forestry and the regeneration of native woodlands are a major concern to archaeologists, and the first pair of maps (illus 8-9) look at two applications of HLA mapping that address the problems associated with the extension of two types of woodland.

The third map in this section (illus 10) shows the application of HLA mapping to the control of visitor pressure at Mar Lodge, while the final map (illus 11) focuses on strategic planning.



Illus 9 Map of Mar Lodge Estate, showing the areas of forest regeneration, with the Relict Landuse Types. The Relict Landuse Type are summarized by Period and are listed by colour (under Period Summary) on the fold-out illus 15 at the back of report. The light green areas are those of forestry regeneration derived from the LCA of the Mar Lodge Estate. Scale: 1:200,000.

4.3.1 Forestry

Liddesdale - Commercial Afforestation Schemes (illus 8)

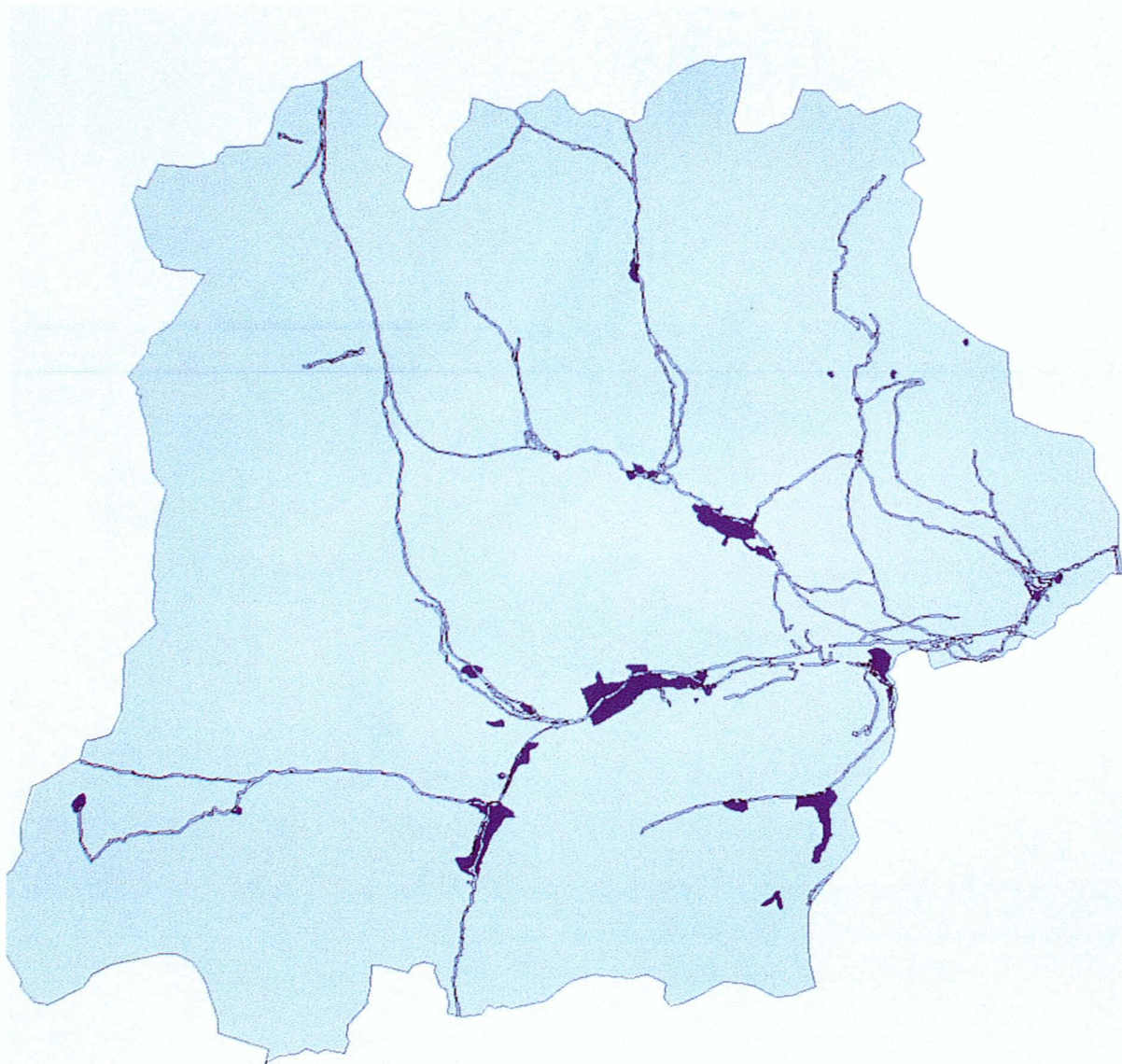
In this case study HLA data is used to assess the potential of the relict landscapes and assess the extent of any impact caused by existing plantings; this could be used to guide felling and future planting plans. The HLA survey of Liddesdale identified extensive areas of surviving relict landscapes (as described above, see illus 3 and 4), and it is clear that afforestation during the course of the present century has had an impact on large areas of relict landscape that had remained open ground until the beginning of the century.

The HLA survey provides vital information about the extent and significance of the surviving relict

landscapes in Liddesdale which will help to inform the plans for the future expansion of forestry in the valley and for the management of the existing plantations.

Mar Lodge Estate - Natural Forest Regeneration (illus 9)

In this study HLA Relict Landuse data is plotted against the planned extent of the proposed expansion of native pine woods in the valleys of the Dee and Lui. As originally planned, the forest was to have included the valley floors, but RCAHMS survey showed that these contained some of the most significant relict pre-improvement landscapes on the estate. The relevant parts of the valley floors have now been excluded from the reafforestation scheme to ensure the survival of these remains.



Illus 10 Map of Mar Lodge Estate showing the areas of Relict Landuse, potentially under threat from access and visitor pressure. All the Relict Landuse Types are all marked in blue. Paths and routes of access are marked in black. Scale: 1:200,000.

4.3.2. Managing visitor pressure

Mar Lodge Estate - Integrated Management (illus 10)

The Mar Lodge Estate has recently been acquired by the NTS, and will now receive a higher national and international profile. As a result visitor pressure may increase (walkers, mountaineers, cyclists and pony trekkers).

The existing network of paths and routeways cross abandoned townships and shielings at a number of points, with direct impact on the archaeology. Visitors occasionally damage monuments, for example by removing or adding stone, and building camp fires.

It is important that these pressures are minimised by greater educational input to make the walker more aware of the archaeological resource and to promote its

understanding and survival. HLA can be used effectively in this process. Similarly, holistic management and appropriate monitoring procedures within the estate itself should be initiated to allow the future survival of these relict areas, for example by rabbit and deer control, careful muirburn, river management, woodland management, and through the education of not only the visitor but also of the local people and estate workers.

4.3.3 Landscape and Local Planning - Strategic Planning

The Antonine Wall and its Landscape Setting (illus 11)

An HLA survey was conducted of the eastern half of the Antonine Wall to assess the setting of the



Illus 11 Map of the Antonine Wall shown within its setting of Current Landuse. The Current Landuse Types are listed by colour on the fold-out illus 15 at the back of report. The course of the Antonine Wall is shown in black. Scale: 1:150,000.

monument. The Wall is a monument of major importance; it is one of the most complex and best preserved of all the Roman frontier systems, and is one of Scotland's premier archaeological monuments (Hanson and Maxwell 1983). However, it also runs through a heavily developed area, which includes a variety of Current Landuse Types - urban, industrial, extractive, road, rail, canals, intensively farmed agricultural land etc. Continuing development pressures exist which threaten the integrity of the monument. All surviving sections of the Wall are protected under the Ancient Monuments and Archaeological Areas Act 1979, and the HLA shows that the presence of the Wall has protected a narrow corridor of land across much of this developed area. This corridor includes monuments in public ownership which are used for a variety of recreational purposes and which provide an important community asset.

The HLA survey also adds to an appreciation of the setting of the Wall. A strategy exists to protect the landscape immediately adjacent to the Wall (the 'amenity' or 'setting' of the Wall; see Skinner 1973). This strategy has not, however, been fully effective in preventing encroachment by various forms of development. Houses and factories exist within the immediate context of the Wall along most of its course but these are inappropriate for the setting of such an important monument. The HLA survey indicates several locations in which the Wall sits within an open landscape (see Current Landuse Types representing C18-C19 field-systems and open ground on illus 11). This highlights the enhanced importance that should be given to the areas in which the setting of the Wall is not too severely affected by housing or quarrying.

4.4 Monitoring Landscape Change

In addition to its potential role in managing landscape change the HLAs carried out in the Pilot Study will

provide a snapshot of the condition of the landscape in the 1990s. This will be of particular value in the future, when it will be possible to assess the current state of the landscape and assess the nature of landscape change through time by using the current HLA as a benchmark. This will help with an understanding of how the historic landscape is changing and will also highlight diminishing resources in terms of both Current and Relict Landuse Types. Archaeologists are already using First Edition Ordnance Survey maps (Dixon 1995) and vertical aerial photographs to monitor changes in the landscape and HLA will be a useful additional tool in the future.

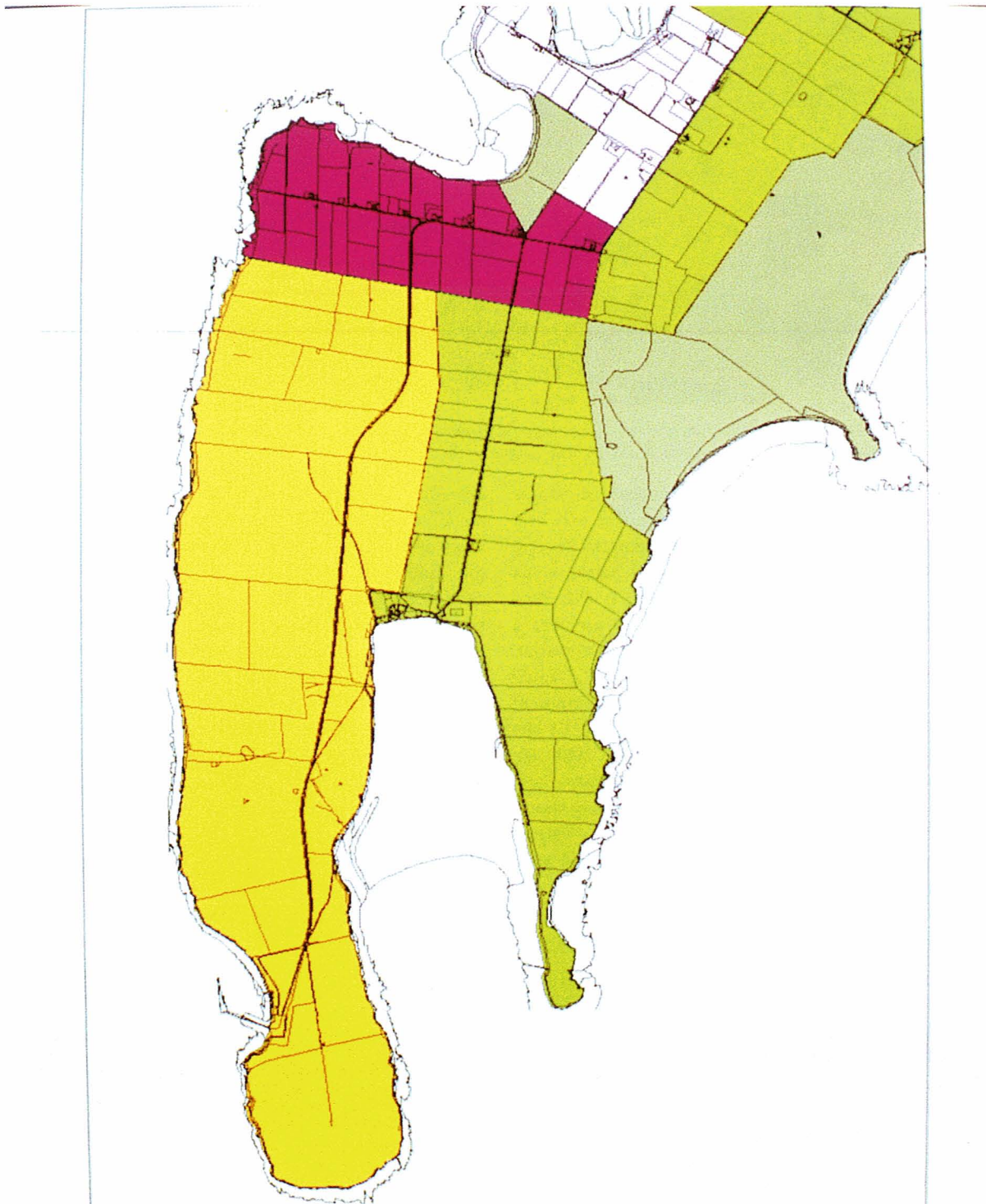
4.5 Archaeological Management

Cultural resource managers often contribute to farm management through agri-environmental schemes (for instance Environmentally Sensitive Areas and Countryside Premium Scheme). In order to input into these schemes in a more effective manner, cultural heritage managers require more information on the landuse setting of the resources that they seek to have managed. This knowledge will help to provide a more coherent and informed framework for decision-making.

This section contains two case studies of Orkney - a detailed study of an area of the island of Sanday and a general study of the prehistoric resource of a large part of the Mainland - both designed to look at different aspects of HLA and archaeological resource management.

Sanday - Stove Farm Study: the nature of the field-systems (illus 12)

The fields of the farm of Stove, which lies at the south-western tip of Sanday, comprise a number of elements, including C18-C19 planned rectilinear fields, an area



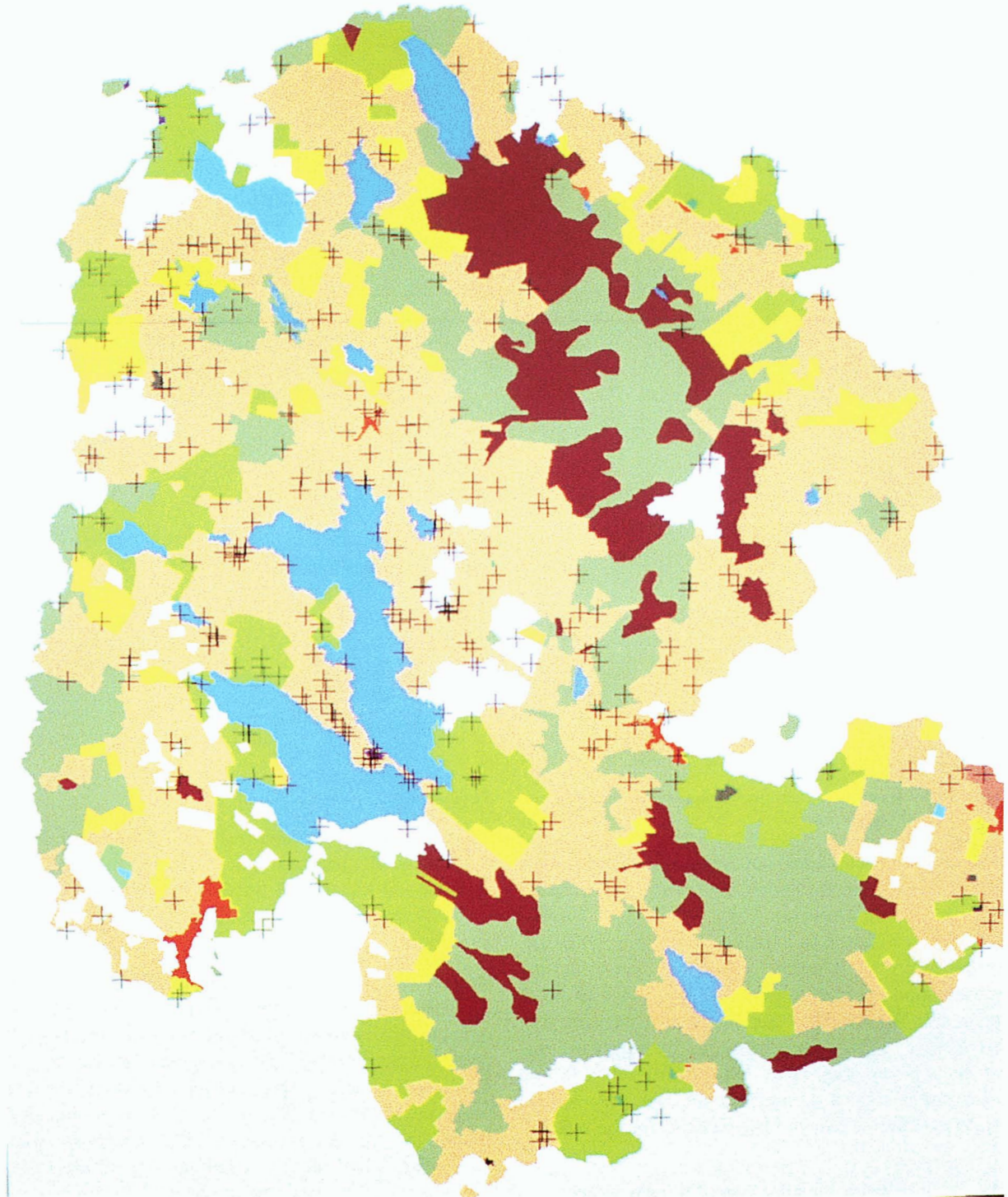
Illus 12 Map of Stove Farm, Sanday (Orkney), illustrating Current Landuse with the Scottish Buildings Survey, enabling a more in-depth understanding of this farm and its field systems. The Current Landuse Types are listed by colour on the fold-out illus 15 at the back of report. Scale: 1:30,000.

of post-1945 intake, crofts or cottars holdings, and rough pasture. To the north of the farm, and included on illus 12, there is a group of small-holdings, as well as further C18-C19 planned fields.

The results of HLA were enhanced in this case by the historical and architectural findings of the Scottish

Farm Buildings Survey (RCAHMS 1998). This has also worked on Stove Farm, thereby presenting a more rounded picture of the development of the farm than could have been achieved by either project in isolation.

The collection and assessment of this type of evidence will allow an assessment to be made of the relative

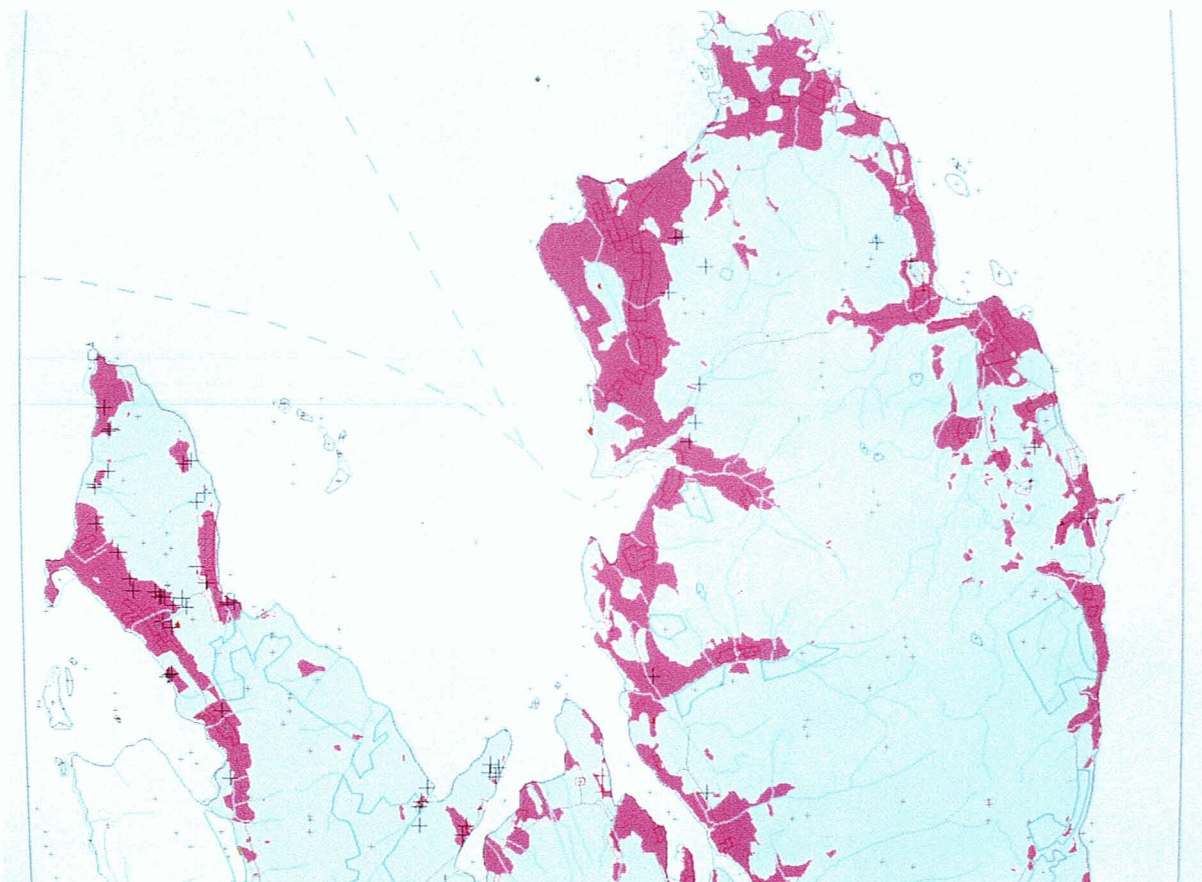


Illus 13 Map of Mainland, Orkney illustrating the correlation of Prehistoric monuments (black crosses), with certain types of Current Landuse. The Current Landuse Types are listed by colour on the fold-out illus 15 at the back of report. Prehistoric monuments include the following classes: cists, cairns, brochs and mounds. Scale: 1:200,000.

significance of various parts of the landscape. In particular, the HLA allows different field patterns to be identified and, therefore, more readily evaluated according to the current criteria. Decisions about landscape change, such as the removal or restoration of dykes, can be informed as a result of this enhanced appreciation of the time-depth visible in the modern landscape although further work is required in order to assess the significance of differing Current Landuse Types and Relict Landuse Types over Scotland.

Mainland, Orkney: Site Management (illus 13)

The HLA survey of Mainland Orkney has identified a wide range of Current Landuse Types which appear to have influenced monument survival and possibly condition (See Appendix B Table 1 for details). Prehistoric sites (cairns, mounds, brochs and cists) seem to be found predominantly in areas of C18-C19 field-systems (C18-C19 rectilinear fields and planned fields) and smallholdings, while rough pasture, and



Illus 14 Map of Waternish and Trotternish, Skye with hut-circles (black crosses) illustrating the correlation with the pre-Improvement areas of Relict Landuse (in pink). Scale: 1:250,000.

post-WW II intakes are the least favoured for the recovery of sites.

The main concentration of prehistoric monuments clearly lies within the agricultural centre of the island and around the coastal fringe (illus 13). Further research is required to explain this pattern; while the relationship of Current Landuse Types to the preservation of ancient monuments is likely to be of great significance other factors are also relevant. The HLA survey alerts cultural resource managers to some of the factors that have led to the survival and recognition of these monuments and may help with an understanding of how to manage them for the future.

4.6 Informing Archaeological Survey Work

Although HLA surveys are not designed as predictive archaeological models, they can help in the assessment of the archaeological potential of an area. Therefore they can be used as an aid to selecting areas that would most benefit from ground survey, and may help in predicting the type and range of monuments that might be found. This may also help in the future with the zoning of different areas of landscape with regard to the potential for the survival of archaeological monuments. This topic requires further research but the Skye Pilot Area provides a case study of the potential of the technique.

Skye - Waternish/Trotternish (Illus 14)

The HLA survey of Trotternish can be used to address two archaeological questions: firstly, the possible survival and location of pre-improvement settlement; secondly, the most likely locations for the discovery of hut-circles.

Ground survey in the adjacent peninsula of Waternish (RCAHMS 1993) has shown that there are extensive remains of pre-crofting settlements on the lower-lying coastal fringes. The identification in the HLA survey of Trotternish of areas of pre-crofting cultivation remains suggests that, as on Waternish, these areas are also likely to include traces of the buildings that accompanied the fields. In a similar vein, field survey on Waternish recovered the remains of numerous hut-circles on the fringes of the pre-crofting enclosures and these fringe areas represent locations in which visible evidence for later prehistoric settlement has survived later landuse. Similar conditions exist on Trotternish where a small number of hut-circles are known in comparable fringe locations. Intensive archaeological survey has not been undertaken in Trotternish and it is probable that more hut-circles will be found in this area in the same type of location during future work. Therefore, if future survey is planned for Trotternish, HLA analysis would provide a good starting point.

5. CONCLUSION

HLA is valuable for inputting cultural heritage information into landscape assessment for a variety of purposes. A national coverage would be an advantage as it would provide a picture of variations in historic Landuse Types on which a full assessment of the value of differing Relict and Current Landuse Types across Scotland could be based. The technique has potential for the following agencies and groups.

5.1 Historic Scotland

From the point of view of monument conservation, the technique has a number of potential values. For instance, HLA could provide a national and regional setting for a number of the activities which are core to Historic Scotland. A national coverage would provide a context for scheduling, scheduled monument casework and the management of monuments.

A national HLA would provide a context for decisions relating to the scheduling of ancient monuments under the Ancient Monuments and Archaeological Areas Act 1979. By defining Landuse Types, HLA can indicate where monuments are likely to survive. Compare for instance the survival of hut-circles on the margin of the pre-crofting enclosure systems in Waternish and Trotternish (see 4.6) and the absence of prehistoric settlement from the Dee, in contrast to the Spey (see 4.1.2). These considerations can be used to prioritise Historic Scotland's scheduling programme.

It is important to protect monuments of national importance within an appropriate setting (NPPG5, section 17) and HLA should assist with the assessment of the setting of monuments. This has been addressed with regard to the Antonine Wall (see 4.3.3), but similar considerations will be relevant to the protection of the setting of other scheduled ancient monuments in Scotland.

Archaeological monuments also require management, and the case studies of Sanday and Mainland Orkney (see 4.5) demonstrate the potential value of HLA in this regard. HLA has the potential to provide an understanding of patterns of monument survival and current conditions which can then be fed back into the policy for the management of individual monuments through the use of Grants to Owners, Management Agreement payments (Historic Scotland 1997) and agri-environment schemes.

5.2 RCAHMS

For the Royal Commission, the HLA has a number of potential values. For instance it should help with: the selection of areas for the ALS survey and other forms of survey (see 4.1.2 and 4.6); and the technique also provides a quick summary of the extent of various Relict Landuse Types for which a national coverage of detailed archaeological survey does not yet exist (see case study of Waternish and Trotternish in 4.6) and thus helps to enhance the information held in the RCAHMS database.

5.3 Cultural Resource and Land Managers

A national HLA would be of considerable use to cultural resource and land managers in general with regard to the planning of future developments, and input into landscape planning. The information provided by HLA requires assessment in each individual case. For example, with regard to the Waternish and Trotternish case study (section 4.6.) an assessment of the information allows the definition of two relevant areas of relict landscape - pre-crofting areas of settlement and cultivation and areas with a high potential for the survival of prehistoric settlement. This information can be fed into both the planning of archaeological survey work and discussion of land management for the area.

With regard to land management, both the Current and the Relict Landuse Types have a role. First, HLA has potential in terms of the imputing of built heritage information into the discussion of the location of major developments such as road-building and opencast mining. The assessment of the value of the Current and Relict Landuse Types in a particular area which is subject to a development proposal will allow the built heritage interests to be taken on board along with the other landscape interests which are included within the Landscape Character Assessments which have been undertaken.

Second, HLA has considerable potential for use in forestry planning. The Relict areas of Liddesdale (see 4.3.1) include rare evidence for medieval landuse, while the abandoned townships of the Dee and Lui Valleys in Cairngorm (see 4.3.1) are also of considerable importance. In both cases the Relict evidence collected through HLA can help in the

development of a strategy for future forestry planting. In more general terms, the collection of evidence for Relict Landuse Types across Scotland and the assessment of this information in terms of value would provide a major help with the zonation of areas for future forestry planting and regeneration.

HLA should be used to input built heritage interests into landscape management. By describing the Current Landuse Types within which archaeological monuments survive it should help to assess the character of the resource and the landuse practices necessary for these monuments to continue to survive (see 4.5 Orkney Mainland study and 4.6 Watternish and Trotternish). Such a general study across Scotland would feed back into the strategy for the management of individual monuments through Grants and agri-environment payments.

In addition the Current Landuse Types are important in their own right for landscape management. For instance, the various form of land boundaries (hedges, fences and stone dykes) are an important element in the character of the landscape and these are mapped by HLA. Further work is required to assess the value of differing Current Landuse Types across the varying landscapes of Scotland but this information should also feed into the provisions of agri-environmental schemes (see 4.5 Sanday study).

5.4 The Public

Finally, HLA should have a role in informing the public about the landscapes that they live within or visit across Scotland. HLA incorporates an understanding of the historical development of local landscapes across Scotland which should help to inform people of their historical context. HLA should help archaeologists and historians to communicate these aspects of the history of landscape in Scotland to a wide audience.

5.5 The Future – A National Coverage?

Historic Scotland and RCAHMS are collaborating to develop a HLA for the proposed National Park in Loch Lomond and the Trossachs, as well as the Cairngorm Partnership area, also a contender for National Park status. The purpose of this exercise is to enable the cultural landscape to be integrated into broader discussions of the management of the landscape of the proposed National Parks. At the same time the exercise will provide a further evaluation of the technique of HLA. We are also working with other partners on a number of additional HLA projects. It is hoped that these will dove-tail together to form full national coverage.

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APPENDIX A: Glossary of Landuse Types

Identifiable Landuse Types of 1 hectare or larger to be mapped: any smaller area is regarded at the primary mapping stage of 1:25,000 as being too small to effectively be digitised and recognised. (Small and spot sites, will not be lost but may be sought via the NMRS and Sites and Monument Record).

The notation for century differs in the lists which form Appendix A from that used in the main part of the report. This is to ensure that the list of Landuse Types remains consistent with the notation used in previous reports.

CURRENT TYPES : 1 - 99

- 1 18th-19th Century Rectilinear Fields** - arable and improved pasture field pattern with associated farms and structures, with/without drainage.
- 2 Post-WW II Prairie Fields** - post-war, large arable field system, but with Type 1 field boundaries removed.
- 3 Post-WW II New Intake** - recently defined fields with new boundary fences. For instance, new pasture fields formed in Waternish and Orkney in an area of prior rough pasture, usually on the border between arable and marginal areas.
- 4 Post-WW II Unenclosed Improved Pasture** - areas of pasture showing no evidence of enclosure but some form of improvement; for instance, clover, fertiliser, ploughing, seeding, or drainage with associated structures (pens, shielings).
- 5 Rough Pasture** - areas showing no tangible evidence of improvement, with or without head-dyke systems.
- 6 Crofting Township** - areas showing evidence of traditional enclosure pattern either in strips or dispersed, with associated structures, field boundaries etc.
- 7 Urban Area** - built up areas of housing, schools, universities, hospitals, open-air markets, churches, cathedrals and associated structures.
- 8 Medieval Burgh** - urban cores in towns and cities.
- 9 Monastery** - pre-Reformation monasteries and nunneries.
- 10 17th-19th Century Planned Village: Agricultural** - small settlement clusters built to house workers for farming activities.
- 11 Industrial and Commercial Area** - areas of factories (light and heavy), mills, markets, shopping centres (malls, town centre), harbours, ports.
- 12 Commercial Forestry** - areas of commercial timber plantations, with no reference to species composition; areas of planting, ground ripping, immature or mature stands, felled etc are treated as a single type.
- 13 Managed Moorland** - areas of moor with evidence of muirburn, usually managed in association with grouse shooting - without drainage.
- 14 Golf Links** - designed landscapes and associated structures.
- 15 Ski Area** - slopes, tows and associated structures.
- 16 Country Park** - area managed primarily for conservation/recreation purposes; for instance, Lochore Meadows and Gartmorn Dam.
- 17 Monument in Care** - areas under care/conservation management/trust; for instance Fort George and Edinburgh Castle.
- 18 18th-19th Century Policies and Parklands** - estates with designed policies, parklands, and landscaping, including associated woodlands.
- 19 Managed Woodland** - woods possibly managed for timber production by traditional means; for instance, coppicing, and relict areas of remnant 'native woodlands'.
- 20 Airfield** - commercial and military airfields and strips with associated structures.
- 21 Military Camp** - delimited areas for military use - training grounds, buildings, housing.
- 22 Reservoir** - artificial water bodies for drinking water, hydro-electric power production.
- 23 Motorway** - and associated structures, junctions, service areas.
- 24 Railway** - and associated structures, marshalling yards, stations.

- 25 Mining and Bing** - associated with any extraction industry.
- 26 Landfill** - associated with refuse, commercial and building fill.
- 27 Quarry** - all types, eg stone, mineral.
- 28 Opencast** - all types, eg coal, sand, gravel.
- 29 Peat Extraction: Commercial** - modern extraction (surface and subsurface), milling.
- 30 Peat Extraction: Traditional** - traditional spade-dug extraction.
- 31 18th-19th Century Planned Fields** - planned agricultural field-systems with a distinct rectilinear layout superimposed upon the landform.
- 32 Cemetery** - burial areas and associated structures.
- 33 Poultry Farm** - large-scale commercial poultry-farming sheds.
- 34 Restored Agricultural Land** - land backfilled or restored from open-cast or similar activity.
- 35 Recreation Area** - for instance, motor racing circuit, campsites, caravan sites and associated areas.
- 36 17th-19th Century Planned Village: Industrial** - small settlement clusters built to house workers for mining and industrial activities.
- 37 Drained Rough Pasture** - intensively drained by interconnecting drainage system - rectilinear, dendritic, curvilinear.
- 38 Drained Managed Moorland** - with drainage - interconnecting drainage system - rectilinear, dendritic, curvilinear, for grouse shooting.
- 39 18th-19th Century Allotments** - planned system of allotments with no settlement, usually allocated to households in a planned village.
- 40 18th-19th Century Smallholding** - irregular pattern of smallholdings, possibly representing crofts, or pendicles.
- 41 Post-WW I Smallholding** - rectilinear smallholdings awarded to WW I Volunteers.
- 42 Deer Lawn** - Grassland areas maintained for deer pasturage, within a hunting forested area.
- RELICT TYPES: Surviving as Upstanding Features: 100 - upwards.**
- 100 Later Prehistoric Agriculture and Settlement** - agricultural systems with associated settlement structures; for instance, hut-circles.
- 101 Pre-Improvement Agriculture and Settlement** - systems with rig and associated settlement (including head-dykes).
- 102 Stock/Sheep Enclosure** - sheep or stock enclosures, generally C17-C19.
- 103 Shielings** - group of at least 5 shielings-huts .
- 104 18th-19th Century Rectilinear Fields** - fields and farmsteads of late C18 and C19 date (Current Type 1).
- 105 Medieval Burgh** - medieval or post-medieval urban settlement (Current Type 8).
- 106 Prehistoric Fortified Site** - including hillforts, brochs etc.
- 107 Medieval Deer Park** - defined by a deer-dyke, comprising a bank and internal ditch, which may or may not be continuous.
- 108 Roman Site** - any Roman military site.
- 110 Pre-Reformation: Monastery** - for instance, Melrose Abbey.
- 111 Medieval Castle** - earthwork or stone castle, pre circa 1600.
- 112 Industrial and Commercial Area** - area of factories (light and heavy), mills, markets, shopping centres (malls, town centres), harbours, ports (Current Type 11).
- 113 Peat Extraction: Traditional** - traditional extraction methods, for instance, spade cut (Current Type 30).
- 114 Cemetery** - burial sites with associated structures (Current Type 32).
- 115 Mining Area** - disused and past surface and subsurface mineral extraction with associated spoil tips (Current Type 27 and 28).
- 116 Railway** - abandoned stations and sidings (Current Type 24).
- 117 Prehistoric Ritual and Funerary Site** - cemeteries, burial mounds, ring ditches, henges, standing stones etc.
- 118 Mesolithic Shell midden** - Mesolithic and later.
- 119 WW I - WW II Defence Site** - eg gun placements, observation posts.
- 120 Medieval/Post-Medieval Deer Traps** - walls defining a funnel-shaped area into which deer are driven to be killed.
- 121 Peat extraction: Commercial** - C19-C20 peat extraction, usually visible as ranks of rectilinear extraction scars.
- 122 18th-19th Century Policies and Parklands** - policies and parklands no longer in original use, eg reverted to farm land or other use (Current Type 18).

123 18th-19th Century Planned Fields - planned agricultural areas with a distinct layout surviving within the modern landscape (Current Type 31).

124 Crofting Township - areas showing evidence of traditional enclosure pattern either in strips or dispersed, with associated structures, field boundaries etc (Current Type 6).

125 17th-19th Century Planned Village: Industrial - small settlement clusters built to house workers for mining and industrial activities (Current Type 36).

126 Assarts - an enclosed area of settlement and agriculture which is delimited by a deer-dyke in a medieval hunting forest.

127 Turf Stripping - areas where the surface layer of turf has been removed for a variety of purposes, leaving a pattern of small rectilinear scars.

128 Airfields - WW II airfield.

129 Post WW I smallholdings - rectilinear smallholdings awarded to WW I veterans (Current Type 41).

132 Long-cist Cemetery - Early Christian burials in stone-lined cists.

134 18th-19th Century Smallholdings - irregular pattern of smallholdings, possibly representing crofts or pendicles (Current Type 40).

RELICT LANDUSE FEATURES: Surviving as non-upstanding remains: 200 - upwards.

CROPMARKS

200 Cropmarks: Prehistoric.

201 Cropmarks: Pre-Improvement Rig.

202 Cropmarks: Roman.

ARTEFACT SCATTERS

210 Finds Scatter: Prehistoric - flints, bone etc retrieved from field walking / ploughing.

211 Finds Scatter: Medieval - pottery, glass, metalwork etc retrieved from field walking/ ploughing.

212 Finds Scatter: Roman - pottery, glass, metalwork etc retrieved from field walking/ploughing.

APPENDIX B: Tables

These tables provide comparative information on Current and Relict Landuse Types in the Various areas which were covered in the Pilot Project (CLT on the tables refers to Current Landuse Type).

Table 1 gives the differing Current Landuse Types in which various types of prehistoric monuments (selected from the NMRS) are found in Orkney.

Tables 2 to 10 show some of the Current Landuse Types which occur in the various Pilot Areas and this

allows an assessment to be made of variations in proportions across Scotland.

The tables correlate the areas within HLA of Current Landuse with the percentage of NMRS sites which fall within these areas. Thus issues relating to monument survival and landuse may be evaluated. Further investigation would be required in order to assess this information in greater detail.

1. Landuse and Prehistoric Sites (Mounds, Brochs, Cairns, Cists), for Mainland Orkney.

| Landuse Type | % cover | Mounds | Cairns | Brochs | Cists | Total | Percentage of NMRS sites |
|--|-------------|------------|-----------|-----------|------------|------------|--------------------------|
| 18th - 19th Century Rectilinear Fields | 27% | 84 | 24 | 12 | 51 | 171 | 44% |
| Designed Fields | 24% | 55 | 5 | 20 | 39 | 119 | 30% |
| Small-holdings | 5% | 11 | 4 | 3 | 9 | 27 | 7% |
| Post-WW II Intake | 5% | 7 | 2 | - | 2 | 11 | 3% |
| Rough Pasture | 21% | 17 | 8 | 4 | 10 | 39 | 10% |
| Other CLTs | 18% | 10 | 1 | 7 | 7 | 25 | 6% |
| TOTAL | 100% | 184 | 44 | 46 | 118 | 392 | 100% |

2. Distribution Landuse/Sites for Skye - Waternish ALS area

| Current Landuse Type | % Cover | Nos NMRS Sites | Percentage of NMRS sites |
|-----------------------|-------------|----------------|--------------------------|
| Crofts | 8% | 84 | 20% |
| Rough Pasture | 68% | 267 | 63% |
| Forestry | 20% | 28 | 7% |
| Other CLTs | 4% | 42 | 10% |
| TOTAL FOR AREA | 100% | 421 | 100% |

3. Distribution Landuse/Sites for Skye (Waternish and Trotternish)

| Current Landuse Type | % Cover | Nos NMRS Sites | Percentage of NMRS sites |
|----------------------|-------------|----------------|--------------------------|
| Crofts | 10% | 184 | 23% |
| Rough Pasture | 79% | 458 | 57% |
| Forestry | 7% | 45 | 6% |
| Other CLTs | 4% | 120 | 15% |
| TOTAL | 100% | 807 | 101% |

4. Distribution Landuse/Sites for Cairngorms

| Current Landuse Type | % Cover | Nos NMRS Sites | Percentage of NMRS sites |
|----------------------------|-------------|----------------|--------------------------|
| 18th - 19th Century Fields | 2% | 97 | 13% |
| Rough Pasture | 71% | 266 | 36% |
| Managed Moor | 13% | 11 | 1% |
| Managed Woodlands | 5% | 114 | 15% |
| Forestry | 6% | 41 | 6% |
| Other CLTs | 3% | 207 | 28% |
| TOTAL | 100% | 736 | 100% |

5. Distribution Landuse/Sites for Liddesdale

| Current Landuse Type | % Cover | Nos NMRS Sites | Percentage of NMRS sites |
|----------------------------|-------------|----------------|--------------------------|
| 18th - 19th Century Fields | 7% | 84 | 25% |
| Rough Pasture | 28% | 69 | 20% |
| Drained Rough Pasture | 14% | 38 | 11% |
| Forestry | 20% | 35 | 10% |
| Other CLTs | 31% | 115 | 33% |
| TOTAL FOR AREA | 100% | 341 | 100% |

6. Distribution Landuse/Sites for St Andrews Area

| Current Landuse Type | % Cover | Nos NMRS Sites | Percentage of NMRS sites |
|----------------------------|-------------|----------------|--------------------------|
| 18th - 19th Century Fields | 40% | 296 | 44% |
| Urban | 6% | 139 | 21% |
| Post WW II Prairie | 22% | 63 | 9% |
| Rough Pasture | 4% | 17 | 3% |
| Managed Woodlands | 11% | 10 | 1% |
| Forestry | 12% | 19 | 3% |
| Other CLTs | 5% | 124 | 19% |
| TOTAL | 100% | 668 | 100% |

7. Distribution Landuse/Sites for Antonine Wall

| Current Landuse Type | % Cover | Nos NMRS Sites | Percentage of NMRS sites |
|----------------------------|-------------|----------------|--------------------------|
| 18th - 19th Century Fields | 41% | 230 | 32% |
| Post-WW II Prairie | 5% | 14 | 2% |
| Planned Fields | 10% | 9 | 1% |
| Urban | 17% | 210 | 29% |
| Industrial | 2% | 22 | 3% |
| Golf Links | 2% | 14 | 2% |
| Rough Pasture | 5% | 9 | 1% |
| Managed Woodland | 3% | 38 | 5% |
| Forestry | 3% | 5 | 1% |
| Other CLTs | 12% | 140 | 24% |
| TOTAL | 100% | 729 | 100% |

8. Distribution Landuse/Sites for Cleish

| Current Landuse Type | % Cover | Nos NMRS Sites | Percentage of NMRS sites |
|----------------------------|-------------|----------------|--------------------------|
| 18th - 19th Century Fields | 55% | 201 | 37% |
| Post-WW II Prairie | 2% | 10 | 2% |
| Restored Agricultural Land | 4% | 67 | 12% |
| Urban | 4% | 64 | 12% |
| Rough Pasture | 11% | 95 | 18% |
| Forestry | 10% | 20 | 4% |
| Other CLTs | 14% | 83 | 15% |
| TOTAL | 100% | 540 | 100% |

9. Distribution Landuse/Sites for Sanday

| Current Landuse Type | % Cover | Nos NMRS Sites | Percentage of NMRS sites |
|----------------------------|-------------|----------------|--------------------------|
| 18th - 19th Century Fields | 31% | 72 | 29% |
| Post-WW II Intake | 9% | 10 | 4% |
| Planned Fields | 25% | 66 | 27% |
| Smallholdings | 13% | 45 | 18% |
| Golf Links | 2% | 1 | 0% |
| Rough Pasture | 14% | 21 | 9% |
| Other CLTs | 6% | 30 | 12% |
| TOTAL | 100% | 245 | 100% |

10. Distribution Landuse/Sites for Orkney Mainland

| Current Landuse Type | % Cover | Nos NMRS Sites | Percentage of NMRS sites |
|-----------------------------|-------------|----------------|--------------------------|
| 18th - 19th Century Fields | 27% | 319 | 37% |
| Planned Fields | 24% | 241 | 28% |
| Smallholdings | 5% | 60 | 7% |
| Post WW II Intake | 5% | 23 | 3% |
| Traditional Peat Extraction | 8% | 8 | 1% |
| Rough Pasture | 21% | 79 | 9% |
| Other CLTs | 10% | 130 | 15% |
| TOTAL | 100% | 860 | 100% |

APPENDIX C: Meta Data

The majority of the headings applied in this meta data are those derived from the Dublin Core, as described by the Archaeology Data Service (<http://ads.ahds.ac.uk/project/goodguides/gis/sect71.html#wise>, but see also Wise, AL and Miller, P 1997. Why Metadata Matters in Archaeology. In Internet Archaeology 2 [online]. Available from <http://intarch.ac.uk/journal/issue2/wise.index.html>). Any headings not used in the Dublin Core are indicated.

Title

Historic Landuse Assessment (Scotland)

Description

The product of HLA is a digital map of the extent of historic landuse character types that have left a trace on the landscape of Scotland. Every piece of ground is assessed for its Current Landuse Type and any relict elements that may be detected. Each historic landuse area is matched with a database of historic landuse types, which has up to four variables in order to cope with Relict Landuse palimpsests. The first type is the current type, with any relict types listed in the subsequent fields. The scale of the map dictates certain limitations. Any feature that is less than one hectare is too small to reproduce at this scale (see p. 3). However, where there is a group of at least three structures or buildings (five in the case of shieling-huts) covering a hectare or more in extent, it is digitised. Cropmarks and finds scatters meeting the above criteria are also included in this map.

Subject

See Glossary of Historic Landuse Character Types and Relict Landuse Types (Appendix A) for list of classified types.

Coverage

Administrative Areas:

Cleish. Fife

St Andrews. Fife

Falkirk. Stirlingshire

Newcastleton. Scottish Borders

Speyside. Upper Deeside. Aberdeenshire

Orkney Mainland West

Sanday. Orkney

Waternish and Trotternish. Isle of Skye

Period

Mesolithic to Present

Creator 1

RCAHMS. John Sinclair House. 16 Bernard Terrace. Edinburgh. EH8 9NX

Creator 2

Historic Scotland. Longmore House. Salisbury Place. Edinburgh. EH9 1SH

Publisher 1

RCAHMS

Publisher 2

Historic Scotland

Identifiers

RCAHMS Artemis GIS Dataset, 'hca' index map

Date.Accession or start date

1996

Date. Completion/Last update date

1998

Source

All Scotland Survey 1988

OS Pathfinder maps 1:25,000

RAF National Photograph Record

First edition OS 6-inch map

National Monuments Record of Scotland

Relation

OS Landline

Language

English

Resource Type

Digital map and database

Scale of data capture (not Dublin Core).

1:25,000

Format

Genamap Vector Map

Export: ArcView Shapefile

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