

Historic Land-use Assessment of Scotland, 1996-2015



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Contents of the Report

The report is divided into an introduction and four chapters, with Chapter Two being sub-divided into two parts. These chapters, listed below, are designed to support the Historic Environment Scotland publication *A History of Scotland's Landscape* by Fiona Watson and Piers Dixon.

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Areas depicted on the maps of Scotland that are under 10ha will not be easily visible at A4, but features as small as this will appear on the electronic version if the reader uses the magnification function up to 250 percent.



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THE ORIGINS OF THE HISTORIC LAND-USE ASSESSMENT (HLA)

The approach taken by the Historic Land-use Assessment (HLA) of Scotland originates in the seminal work of W. G. Hoskins in developing an understanding of the British landscape through an observation of its man-made features, which he published in 1955 as *The Making of the English Landscape*.¹ This outlined the key periods and elements in the structural development of the landscape that encapsulated the way in which a landscape could change so dramatically over time. Emulating Hoskins, Millman's *Making of the Scottish Landscape*, published in 1975, does the same for Scotland's landscape.² This was the work of a historical geographer and stands alongside that of others like Parry and Slater's *Making of the Scottish Countryside*.³ More than 30 years on, Historic Environment Scotland have published *A History of Scotland's Landscapes* by Fiona Watson with Piers Dixon, which adds to this literature by describing the changing landscape of Scotland from early prehistory to modern times through the medium of surviving fragments in the present landscape, based on the work of the Historic Land-use Assessment project (1996–2015) and accounts by contemporary authors.⁴ This report provides statistics and typological descriptions of the components of the landscape, past and present, and characterisations of the ten regions into which the landscape may be divided on this basis.

The archaeological community was slower than geographers to develop its thinking about the landscape. From 1979 the new journal *Landscape History* published by the Society for Landscape Studies was the fruit of a groundswell of opinion that, as well as individual sites, the history of the landscape needed to be researched and its results published. The increased use of aerial photography and new technology with electronic distance measurers in the 1980s enabled more efficient field work in mapping and recording archaeological features of the landscape. However, a change in thinking was

required to take this further: the field knowledge and understanding acquired by members of the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS), combined with the application of new technology – geographical information systems (GIS) – in the 1990s, led to new possibilities that are reflected in its archaeological publications.⁵ At a stroke the recording of archaeological features against the backdrop of the modern landscape could be extended to an examination of the origins of the whole landscape, treating old and new alike as worthy of record.

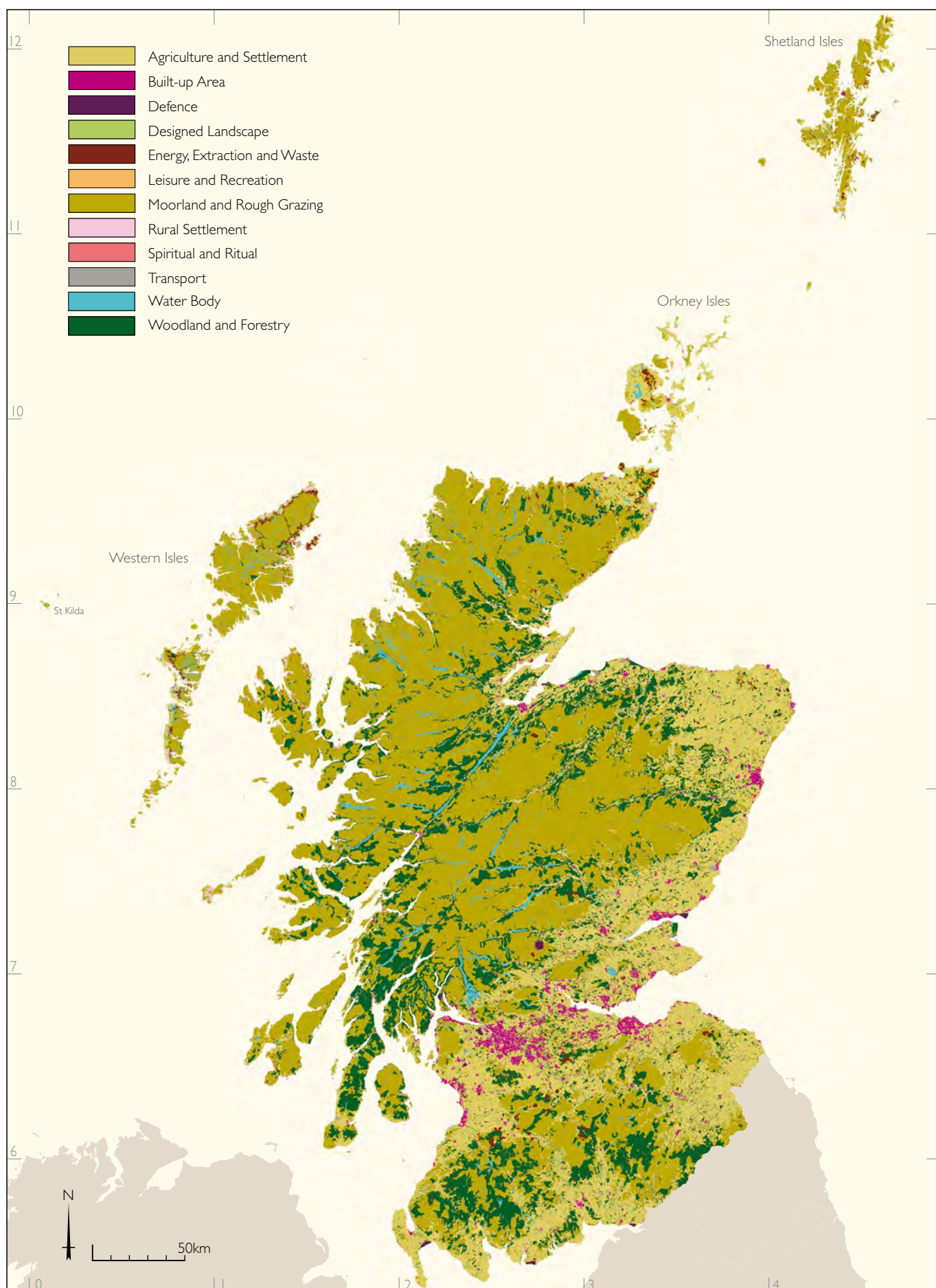
The developing thinking in RCAHMS about the archaeology of the landscape was also part of a wider move in the 1980s to appreciate the landscape as a whole for its cultural value. Government agencies like the Countryside Commission, in conjunction with English Heritage and County Councils, began to seek ways of protecting what they saw as the valuable cultural and historical assets of the countryside, such as designed landscapes. The Register of Historic Parks and Gardens of Special Historic Interest in England in 1983 was a product of this and a similar register was produced in Scotland by the Countryside Commission for Scotland (CCS) and Historic Scotland.⁶ Out of this consideration of the management of the landscape a broader technique, Landscape Character Assessment (LCA), was developed.⁷ This is a descriptive technique for recording landscapes, seeking to capture the elements and influences that make them distinctive. The LCA methodology established during the 1990s by the national countryside and natural heritage agencies became an important building block of land-use planning and management by assessing the quality of landscapes, acknowledging the cultural and perceptual values attached to them and identifying the main forces of change. In Scotland, a national series of LCAs was completed in the 1990s, though some of these have since been revised, and others amplified by more detailed characterisation undertaken for local planning purposes.⁸

The LCA methodology focuses on how landscapes are perceived and experienced, developing descriptions based on interpretations of the interactions between geology, landform, soils, vegetation, land use, field and settlement patterns that generate landscape character, but the technique does not fully encompass the complex range of historical influences within the landscape. Yet the way a landscape has changed through time plays a fundamental role in shaping not only what it is but also how it is understood today, and so how it has changed is relevant to how it might be managed. However, as the time-depth evident within the modern landscape was not properly reflected in the LCA process, it was similarly not properly being reflected in management strategies based on the LCA outputs.⁹

In response to this situation, the UK historic environment agencies developed their own characterisation methodologies to complement LCAs, and to add greater historical depth to the understanding of landscape. This methodology of Historic Landscape Characterisation (HLC) was initially developed in England, and particularly in Cornwall,¹⁰ but similar, though slightly different, approaches were also taken in Scotland, as HLA, and in Wales, where a Register of Historic Landscapes was produced and HLC was undertaken alongside the national LANDMAP.¹¹ The HLC approach is based on an archaeological understanding of the current landscape character and the morphology of its features. LCA and HLC are complementary techniques in that sense, and each can add substantially to the understanding and application of the other.¹² While HLC was promoted by English Heritage, the work was carried out by the County Councils; this led to some variation of methodologies, but ensured that there was local interest in the results. In Scotland, Historic Scotland and RCAHMS joined together to develop a single, consistent national approach. However, there is one key difference from the approach in England and from that in Wales: there

has been no attempt to define unitary Landscape Character Areas that combine a range of character types in a given geographical area. HLA is a land-use-based interpretation, and is also called Historic Land-use Assessment rather than Historic Landscape Characterisation. While the origin of this labelling was largely political in avoiding confusion with LCA, it also raises the issue of how HLA compares with geographical land-use mapping.

The HLA project divided the landscape of Scotland into 54 Historic Land-use Types that are active components of the modern landscape, and 43 archaeological Relict Types of the prehistoric, medieval and modern periods that are fossilised within them. These are grouped into twelve Historic Land-use Categories using land-use headings that are generally recognisable to geographers (Map 1) and are compatible to some extent with those in the National Land Use Database published in 2007.¹³ However, the historical dimension of land use is not included in the National Land Use Database, in which archaeological sites are included only as an aspect of Recreation. The HLA approach taken is different because it focuses on the period of origin of land uses as well as function. For example, Designed Landscapes, a recognised Land-use Category in HLA, are not recognised as National Land Uses, but are instead broken down into the constituent parts – woodland, pasture, dwellings and gardens. Furthermore, there is no Vacant or Derelict Land-use group in the HLA interpretation, since the historic land use does not in effect change if a use was abandoned until a new land use is established. This highlights that one of the essential elements of this assessment is its focus on change and the impact of past land use on the present: thus the mapping of relict archaeological remains wherever they may be seen. This is an archaeological approach, viewing changing land use as stratigraphy in the landscape; each phase of land use leaving its mark on the landscape, or being overlain and obscured by new land uses.



Map 1 Historic Land-use Assessment by Category, reflecting the Highland-Lowland divide which dominates the landscape of Scotland. GVO06891.

THE EVOLUTION AND METHODOLOGY OF HLA

The Historic Land-use Assessment of Scotland was undertaken as a joint project between Historic Scotland and RCAHMS (both now merged into Historic Environment Scotland). Its purpose was to establish a national map-based digital data-set depicting the historical origins of land use in Scotland that would enhance understanding of the historic dimension of the landscape and aid its protection and management, both in its own right and alongside LCA. In addition, the HLA was intended to provide a spatial framework for historic environment data and facilitate comparison with a range of other types of data relating to the landscape, enabling considerations of the historic landscape to be embedded in wider strategies for land-use change and landscape management. The project began with a pilot study in 1996–8 and national coverage was completed in 2015, compiled by a team varying in size from two to six.¹⁴

HLA data provides a systematic and rigorous means of analysing the landscape to identify elements that survive from past activities and are recognisable in the patterns of modern land use. In effect, HLA is a GIS-based map that depicts the historical origin of land-use patterns, describing them by period, form and function (Fig 1). The HLA methodology is mainly desk-based and analyses a comprehensive range of sources to identify and interpret historic land uses. The key sources are historical and current Ordnance Survey (OS) maps; the National Record of the Historic Environment,¹⁵ local authority Historic Environment Records, and vertical and oblique aerial photography. Data held by the Forestry Commission;

MLURI (Macaulay Land Use Research Institute – now the James Hutton Institute); Scottish Natural Heritage and other organisations was also consulted wherever relevant.¹⁶

The HLA map was compiled at 1:25,000. At that scale, 100m is 4mm across, meaning that the minimum practical recording unit is one hectare (1ha). Following interpretation of the sources and the digital mapping of the extent of individual types, component parts of the data were double-checked and edited to ensure consistency, and selected field-checking was undertaken to authenticate the desk-based work.

Each polygon records the modern land use. Any discernible archaeological landscapes greater than the 1ha cut-off are recorded within the modern land-use polygons. However, smaller sites can be overlaid on the HLA map by importing them from Canmore, or other historic environment records, in a GIS to create a comprehensive overview of the historic landscape.

The methodology has evolved over time. The original methodology and results of the pilot project were published in a research report in 1999,¹⁷ but changes were later introduced at various times to accommodate deeper understanding of the data and new data sources: some types were combined in order to avoid detailed distinctions that were not useful in practice; new types were added that were identified as data analysis progressed over time and across Scotland; and new digital maps and imagery were used that became available over the life of the project.¹⁸

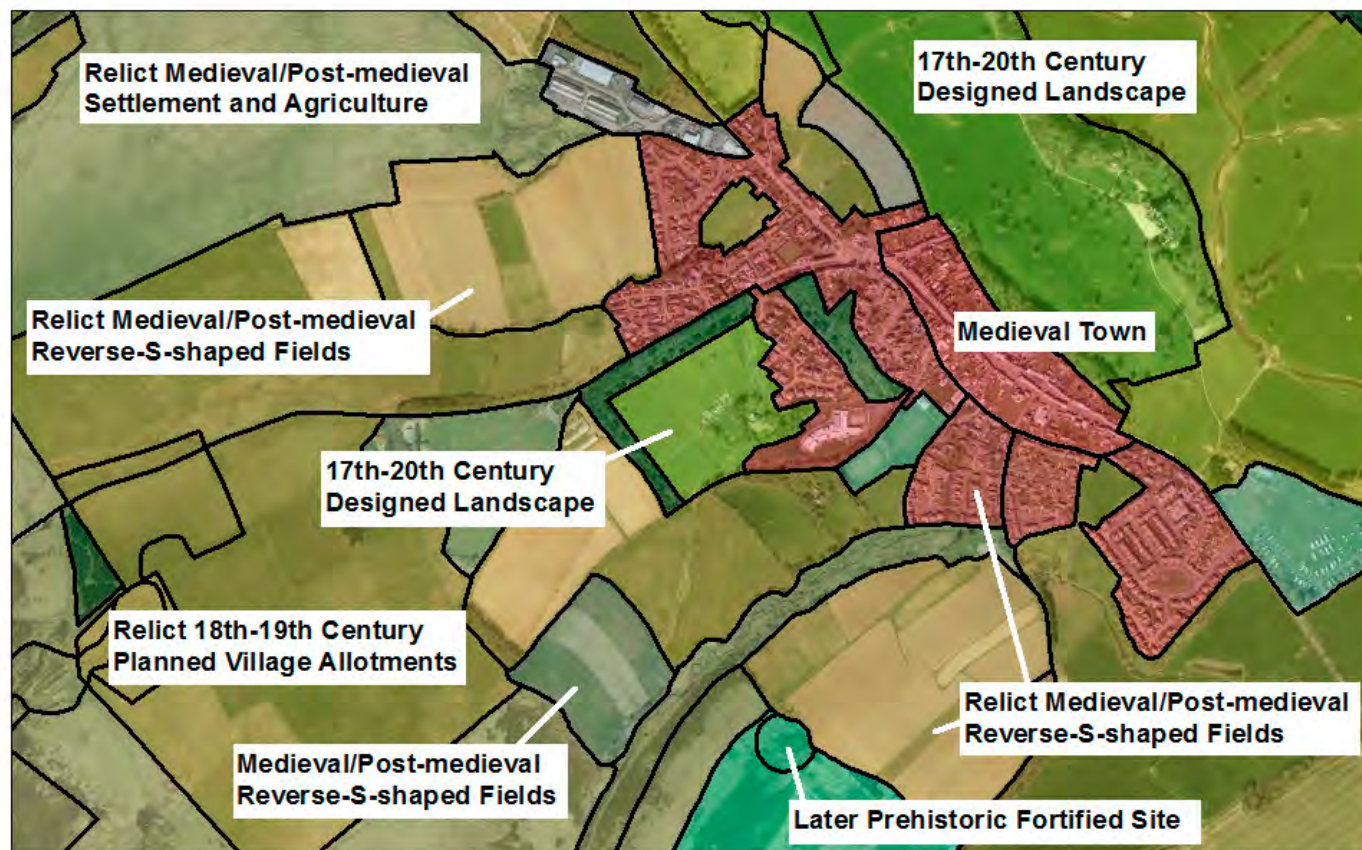


Fig 1 An example of HLA interpretation of the landscape around the burgh of Lauder, Scottish Borders. DP247971.

While the aim was always to produce a national map, at times the project focused on specific areas to help address strategic management issues, with the results being published to raise awareness of the historic dimension of the landscape and to aid decision-making. This approach led to reports being produced for the areas of Loch Lomond and the Trossachs and the Cairngorms when they were under consideration for national-park status, with the HLA data subsequently being used by the park authorities to inform their strategies for landscape management.¹⁹ HLA was also undertaken to assist the development of management strategies for national scenic areas (NSAs), focusing on the three pilot areas on the Solway coast, and in Wester Ross; and for SNH's special qualities assessment of NSAs.²⁰ Similarly, it was used to help understand the landscape context of the newly inscribed Antonine Wall World Heritage Site. For each of these areas, HLA raised awareness of their historical development and the degree of archaeological survival within them, and informed deliberations about their landscape management.

This report offers an insight into what we have learned from HLA about today's landscape of Scotland. HLA has provided a wealth of new information about the historical development of Scotland's landscape and about the origin of its modern land uses. It has added to our understanding of the variety, complexity and time-depth of the historic landscape and has created an accessible digital record for it. The HLA data itself is available through the dedicated HLAmap website,²¹ where the digital map can be explored directly or the data downloaded for use in GIS platforms.²² The website contains a detailed explanation of the Historic Land-use Types and provides case studies to help the user understand the data and its potential uses in research and for decision-making. We hope that this volume and the resources available via the HLAmap website will help stimulate interest in Scotland's changing landscape and encourage further research.

ENDNOTES

- 1 Hoskins, W. G., 1955, *The Making of the English Landscape*. Hodder and Stoughton: London.
- 2 Millman, R. N., 1975, *The Making of the Scottish Landscape*. Batsford: London.
- 3 Parry, M. L. and Slater, T. (eds), 1980, *The Making of the Scottish Countryside*. Crook Helm: London.
- 4 Watson, F. with Dixon, P., 2018, *A History of Scotland's Landscapes*. Historic Environment Scotland: Edinburgh.
- 5 RCAHMS, 1990, *North-east Perth: An Archaeological Landscape*. HMSO: Edinburgh; RCAHMS, 2007, *In the Shadow of Bennachie: A Field Archaeology of Donside*. Society of Antiquaries Monograph: Edinburgh. *North-east Perth* predates the introduction of GIS and *Donside* postdates it.
- 6 Historic England: Registered Parks and Gardens, <https://historicengland.org.uk/listing/what-is-designation/registered-parks-and-gardens/> [accessed March 2018]; Historic Environment Scotland: Gardens and Designed Landscapes, <https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/gardens-and-designed-landscapes/> [accessed March 2018].
- 7 Countryside Commission, 1993, *Landscape Assessment Guidance*. CCP 423, Countryside Commission: Cheltenham.
- 8 SNH Commissioned Report 29: *Overview of Scotland's national programme of Landscape Character Assessment*, <https://www.nature.scot/snh-commissioned-report-29-overview-scotlands-national-programme-landscape-character-assessment> [accessed March 2018].
- 9 Fairclough, G., Lambrick, G. and McNab, A. (eds), 1999, *Yesterday's World, Tomorrow's Landscape*, English Heritage: London.
- 10 Herring, P., 1998, *Cornwall's Historic Landscape: Presenting a method of Historic Landscape Character Assessment*. Cornwall County Council and English Heritage: Truro.
- 11 Cadw, CCW and ICOMOS UK, 1998, *Register of Landscapes of Outstanding Historic Interest in Wales*; Cadw, CCW and ICOMOS UK, 2001, *Register of Landscapes of Special Historic Interest in Wales*; LANDMAP, Natural Resources Wales, <http://landmap-maps.naturalresources.wales/> [accessed March 2018].
- 12 Fairclough, G. and Macinnes, L., 2003, *Understanding Historic Landscape Character, Topic Paper 5*. The Countryside Agency and Scottish Natural Heritage.
- 13 *National Land Use Database: National Land Use Classification*, <https://www.gov.uk/government/statistics/national-land-use-database-land-use-and-land-cover-classification> [accessed March 2018].
- 14 The team has variously included Lynn Dyson Bruce, Caragh O'Neill, Karen Clarke, Cole Henley, Helen Brown, Mel Conway, Siobhan McConnachie, Jonathan Dowling, Sine Hood, Allan Kilpatrick, Steven Orr, Chris Nelson, Oliver O'Grady, Stephen Digney, Hannah Smith, Kirsty Millican, Richard Craig and Billy Macrae under the management of Piers Dixon, Mike Middleton, Lesley Macinnes, Sarah Govan, Richard Hingley, Jack Stevenson and Robin Turner. Graphics for the report were prepared by Georgina Brown and Tahra Duncan-Clark; aerial photographs largely taken by Robert Adam and Dave Cowley; proof read by Laura Kincaid; and designed by Mitch Cosgrove.
- 15 Canmore, <https://canmore.org.uk/> [accessed March 2018].
- 16 Historic Scotland and RCAHMS, 2012, *Historic Land-use Assessment: Sources*, <http://hmap.org.uk/sites/default/files/HLA%20Sources.pdf> [accessed March 2018].
- 17 Dixon, P., Dyson Bruce, L., Hingley, R. and Stevenson, J. B., 1999, *Historic Land-use Assessment (HLA): Development and Potential of a Technique for Assessing Historic Land-use Patterns*. RCAHMS and Historic Scotland: Edinburgh.
- 18 Historic Scotland and RCAHMS, 2013, *Historic Land-use Assessment: Type Definitions*, <http://hmap.org.uk/sites/default/files/TypeDefinitions.pdf> [accessed March 2018].
- 19 Boyle, S. and Macinnes, L., 2000, *The Historic Landscape of Loch Lomond and the Trossachs*. RCAHMS and Historic Scotland: Edinburgh; Cowley, D. and Govan, S., 2001, *The Historic Landscape of the Cairngorms*. RCAHMS and Historic Scotland: Edinburgh.
- 20 RCAHMS and Historic Scotland, 2003, *The Historic Land-use Assessment of Wester Ross*. RCAHMS and Historic Scotland: Edinburgh; RCAHMS and HS, 2003, *The Historic Land-use Assessment of the Solway Coast National Scenic Areas*. RCAHMS and Historic Scotland: Edinburgh; Scottish Natural Heritage, 2010, *The Special Qualities of the National Scenic Areas*. SNH Commissioned Report No.374, <https://www.nature.scot/snh-commissioned-report-374-special-qualities-national-scenic-areas> [accessed March 2018].
- 21 <http://hmap.org.uk/> [accessed March 2018].
- 22 <http://hmap.org.uk/content/data-download> [accessed March 2018].

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Chapter One: PAST LANDSCAPES



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PAST LANDSCAPES

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INTRODUCTION

The appreciation of the surviving landscapes from different periods of human habitation across Scotland and the interpretation of land-use changes that have taken place over time have been hugely improved through the HLA project. The elements that have been recorded from the prehistoric, Roman, medieval and post-medieval periods in this exercise represent the survivors of once widespread features. Their limited extent now reflects the destruction of evidence from the past through subsequent developments and land-use change. In particular, technological changes in agriculture have been instrumental in changing the landscape forever at key periods; firstly with the Neolithic revolution of agriculture and the clearance of woodland for cultivation, which increased in intensity in later prehistory; secondly with the medieval introduction of the mouldboard plough, which brought the ability

to plough much greater areas of land; and finally with the agricultural revolution that to a large extent created the landscape with which we are familiar today. These key stages in development progressively impacted on what had gone before, erasing many traces of the past in the process. Nevertheless, relict landscapes have survived from earlier periods and provide a rich source of evidence for understanding Scotland's past.

This chapter examines the range of landscapes that once existed across Scotland. It explores how some bear witness to human occupation of c6000 to 4500 years ago, while others are characterised by much more recent land use of the last 1000 years or so. It outlines where different periods of land use are generally to be found and highlights specific examples.

Section One:

WHERE ARE THE VISIBLE TRACES OF THE PAST?

Scotland's Changing Prehistoric Landscape

The landscapes of Scotland changed considerably during prehistoric times (c9500 BC–AD 500), after the glaciers that scoured the north of Britain disappeared over 10,000 years ago. The profiles of mountains and hills have changed little, though they are now clothed in vegetation rather than ice. But many coastal edges and river valleys have been transformed since temperatures rose. For example, the relative rise in sea level resulted in the inundation

of considerable areas of land in the Western Isles, Orkney and elsewhere that were dry during the early prehistoric period (Fig 1). On the other hand, to the south-west around Oban in Argyll the land has risen relative to the sea following the disappearance of the ice, creating a distinctive storm beach c10m above sea level (Fig 2). More regional fluctuations in post-Neolithic sea levels also altered the landscape, such as around the upper Forth, though many such inundations were temporary rather than permanent. In addition, significant events of alluvial deposition infilled upland valleys and braided rivers, thereby altering water courses, sometimes dramatically.¹



Fig 1 The pale blue area is an example of a submerged landscape at Mill Bay, Hoy, Orkney. The various small dark patches may be archaeological remains, including possible fish traps. DPO66524.



Fig 2 Killean, Kintyre, Argyll. The raised beach clothed with gorse and other shrubs forms a strip of rough grazing in the middle of rectilinear fields of the 18th and 19th century. The raised beach is often the location for Mesolithic settlements. DPI08552.

Arguably, however, the main change was to the detail of the landscape. The warming climate that led to the loss of ice also enabled soil development. This was rapidly followed by colonisation by hardy plants and then by herbs and shrubs. Eventually trees followed, with birch and hazel widespread by c8050 BC. Scots pine took hold in the north and gradually oak spread too, to southern Scotland by c7550 BC and northwards to Aberdeenshire, the Great Glen and Skye by c4850 BC. The open landscape had been naturally transformed to one that supported a mosaic of woodland over both lowlands and uplands to a height of around 500m, alongside the slow accumulation of blanket peat in some parts of the north Highlands. Within this tree cover, open areas provided a varied habitat for plants and animals. Natural events like fire and wind-throw changed the environment locally, as did browsing animals. Human activity, firstly through hunter-gathering and later through farming, also had an impact on these landscapes.²

By the beginning of the Bronze Age, c2200–1900 BC, the blanket peat of the north and west was out-competing the trees, with Scots pine decreasing significantly across the Highlands. Open dry heath and grasslands then predominated. Elsewhere, however, subsistence farmers were enlarging clearings in the woods. But many such openings do not seem to have been permanent and there is evidence of natural tree regeneration throughout the Neolithic and Bronze Ages. A shifting pattern of canopy cover, age structure and large clearings must have characterised these woodlands. It is likely that both climatic and anthropogenic factors will have driven these developments, but that neither dominated.³

However, during the Iron Age all this changed. By c500 BC there is clear palaeo-environmental evidence for extensive, permanent woodland decline. Various drivers may have contributed to this, for example a cooler and wetter climate, an increasing population (perhaps as many as 0.5 million by this time), and improved technologies and societal developments. The outcome was that by c350 BC there had been a dramatic deforestation across the country. The resulting pattern of arable and pastoral subsistence farming was to be maintained for over 700 years.⁴

Landscapes were continually being modified thereafter, with woodlands coming and going to a certain extent, and farmland expanding and contracting due to changes in population and socio-economic requirements. Nevertheless, it was the prehistoric period that saw the greatest alterations in the natural environment, driven by changes in climate and the changing nature of human impact.

Large-scale Man-made Changes in Prehistory

Throughout the prehistoric period sufficient land was cleared of trees, or kept open, to enable subsistence farming as well as to ensure the appropriate settings for ceremonial or burial sites and fortified places. In a few areas, like Shetland, patches of early prehistoric evidence have survived the environmental change that resulted in blanket peat growth and subsequent land uses. In other places, like Orkney, parts of Caithness, Kilmartin Glen in Argyll, and just south of the Dee in Aberdeenshire, where modern land-use change has been considerable, features from this period still exist around the margins of arable land. Those that have survived were built of stone rather than timber. This is a significant reason why so little evidence is extant across lowland parts of the country – wooden structures decay rapidly and are easily destroyed.⁵

Notwithstanding the differing lifespans of materials, later prehistoric landscapes are more widespread than earlier prehistoric ones. This presumably reflects an increasing population bringing a greater area of land into pasture and cultivation. The location of some of these prehistoric farms on the margins of subsequent agriculture has led to their survival. It is therefore mainly beyond today's intensively improved agricultural and industrial landscapes that there is upstanding evidence of past settlement and land use: particularly in parts of the Highlands and Islands north of the Highland Boundary Fault, and in the uplands of the Borders, Dumfriesshire and Galloway. Nevertheless, even in the fertile Lowlands there are some quite extensive prehistoric rural features surviving under the plough-soil and recorded by aerial photography.⁶

The surviving elements of these prehistoric landscapes include cairnfields, areas of cord rig cultivation, field systems and the remains of circular buildings (Figs 3 & 4), as well as substantial stone burial cairns or earthen mounds, cursuses (long ceremonial enclosures), stone circles and henges (circular ceremonial earthworks). Hilltops and rises are often crowned with the remains of fortified or enclosed settlements delineated by earthen or stone ramparts, ditches or palisade trenches.



Fig 3 The heather and grass at the Ord, Lairg, Highland, is pockmarked with the remains of prehistoric settlement and cultivation, including clearance cairns and hut circles. DP080261.

Over four thousand years of agricultural land use saw continual variation in the extent and detail of rural land use across the country: woodland clearance, habitation and ploughing of at least some of the ground, abandonment, natural regeneration or re-use, resulting in clearance of abandoned features. For a brief period the pattern was altered by the military needs of the Roman Empire: although Scotland was only briefly brought under its power, landscape-scale changes were wrought that still exist today. Roman roads from Carlisle and Corbridge north to the Firths of Forth and Clyde, with their associated forts, still underlie part of today's road system, while the Antonine Wall and the distribution of marching camps and forts along the Highland Boundary Fault are impressive reminders of a brief period of Roman military might.⁷

Despite the impact of the Roman period, subsistence farming continued in both upland and lowland areas, although the survival of later first millennium AD relict landscapes is largely restricted to the upland fringes of areas like north-east Perthshire and at places like Garbeg, around Loch Ness. But again there were changes in detail across the country. The numerous prehistoric fortified sites on hilltops and ridges that had such visual dominance in the landscape began to be abandoned, although some were re-used. In their place a lesser number of enclosed royal and monastic settlements became important foci within the countryside, for agricultural production as well as the control of high-value goods.⁸

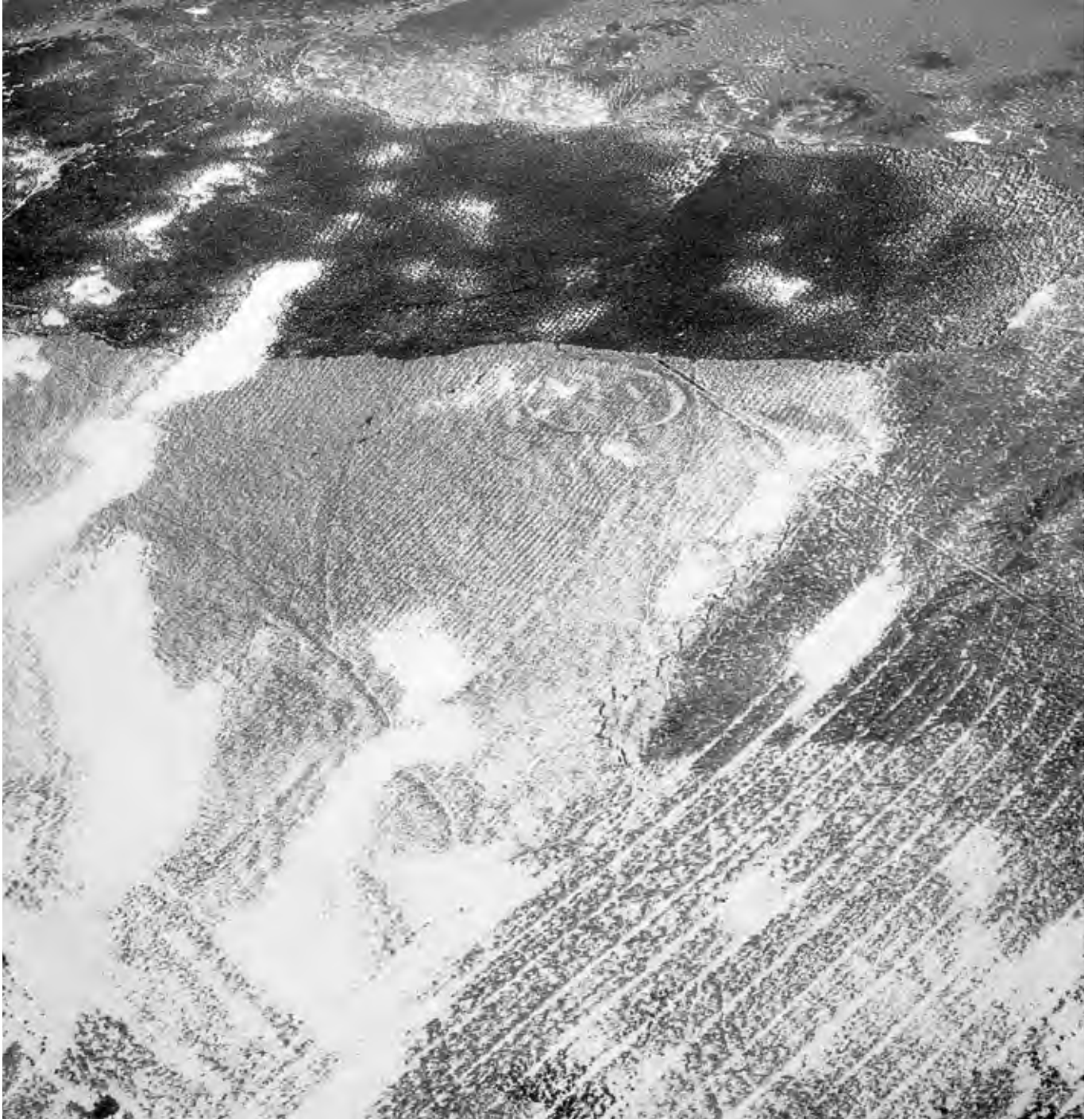


Fig 4 Orchard Rig, Scottish Borders. Narrow prehistoric cord rig that overlies a palisaded settlement lies next to broad medieval/post-medieval ridge and furrow. SC864056.

Large-scale Man-made Changes: the Medieval Period

To a certain extent the geography of the 12th to 16th centuries was driven by the economics of the royal household. The medieval period ushered in the building of numerous castles – earth and timber motte and baileys – and abbeys across the fertile lower-lying lands. Medieval burghs and villages developed as centres for craftsmen, and markets which could be taxed were scattered regularly across the Lowlands. Many have survived within today's urban centres, like Tain, Fraserburgh, Haddington and Dumfries, but their initial creation must have resulted in major changes in the countryside. The tracks radiating from these newly established centres were new courses through a landscape that had previously seen comparatively little development of formal communication routes, other than in the Roman period.⁹

Although subsistence farming was the mainstay for most of the population throughout this period, there were land uses directly associated with the kings, barons and religious houses; some of these land uses still feature in places today. Hunting 'forests' of woodland and pasture, with occasional patches of farmed land, once covered specific areas of the country.¹⁰ Even today the remains of this land use characterises Liddesdale in Roxburghshire, where obvious man-made boundaries enclose areas of open countryside – the 'assarts' that protected small medieval farms that were once within the range of the deer forest. Similar in form are the clear linear boundaries which once defined the medieval 'deer parks' at the mouths of the Angus glens. These kept the deer within their open woodland, upland range and though they are no longer in use they remain a specific feature of these landscapes. Extensive sheep grazings were also established, providing income for monasteries and the aristocracy, whose abbeys and castles pepper the Lowlands, particularly along the Tweed and across East Lothian and the Banff and Moray coastal plain.

However, much more wide-ranging is the evidence for medieval and post-medieval farming, most visible as ridge and furrow (Fig 5). Much has vanished due to the subsequent onslaught of agricultural improvements, industrialisation and urbanisation across the Lowlands. Even in less altered landscapes, farms have disappeared because structural elements were of turf, clay and timber rather than stone. Nevertheless, there are still swathes of the country where they have survived. Like prehistoric features, these survive mainly on the margins of later farmland and in largely deforested environments. On occasion prehistoric and medieval/post-medieval features can be found together, though more frequently the latter have subsumed or destroyed the former.

The Inner and Outer Hebrides, as well as the north and west of the country, are renowned for evidence of medieval/post-medieval agriculture, as considerable areas of farmed land were subsequently cleared or abandoned to make way for sheep pasture. These features also characterise parts of the upland glens, valleys and hillsides of the east and south of Scotland, as, for example, Southdean in the Scottish Borders. The areas that have survived are generally sited in what is today marginal farmland, coniferous or deciduous plantations and hill ground. Summer shieling grounds can stretch high into the uplands, with green patches in the heather moorland providing strong visual markers, as for example at Gleann Taitneach in the Highlands. Lower down, as on Waternish, Isle of Skye, there are extensive remains of 18th century townships and groups of farm buildings with traces of buildings and yards, grain-drying kilns, head dykes and areas of spade-dug ridge and furrow.¹¹ Aerial photography has revealed even more of this period hidden beneath the plough-soil of today's large arable fields of lowland areas (Fig 21). Of particular note is the visible extent of the ploughed open fields of this period, a feature that is reflected in the reverse-S shaped fields of today's landscape; those at West Cornton, close to Stirling, are still visible in the modern field pattern (Fig 6).



Fig 5 The remains of rig on the flood plain of the River Brora, Highland; every inch of level ground in the valley bottom has been cultivated. The settlements are on the terraces above the haugh land. DP080219.

The landscapes of medieval/post-medieval rural Scotland made a distinctive impact upon today's landscape. The deforested countryside was characterised by numerous dispersed townships, or small hamlets, with their open strip fields and access to grazing across the uplands, and small and large street villages across the Lowlands, with their massive ridged strips, as depicted in a series of images by John Slezer in his *Theatrum Scotiae* in 1696 (Fig 7). The development of medieval burghs and villages around royal castles and religious establishments visually changed Scotland's landscapes, creating

significant lowland foci within an otherwise agricultural environment. The setting aside of certain upland and lowland areas for hunting forests and deer parks made further significant impacts on the landscape, particularly as they restricted access to their resources, and in the case of some royal parks, like Holyrood and Stirling, lay close to centres of population.

This pattern of land use was irrevocably changed by the agricultural revolution, industrialisation, urbanisation and the modern intensification of land use.



Fig 6 Reverse-S-shaped fields (Chapter Two: Part One, pages 26–28) may be seen in the foreground at Cornton Vale, Stirling. SC579457.



Fig 7 Ridge and furrow depicted by Slezer in the hinterland of Inverness. SC101803.

Section Two:

SURVIVING EXAMPLES OF PAST LAND USE

This section describes Relict Land-use Types that have survived as archaeological fossils in the modern landscape and contribute to our understanding of the development of the Scottish landscape. Each Land-use Type is presented with a distribution map of the landscape areas of the type and a graphic depicting the proportions of modern land uses in which this Land-use Type is found in a pie chart and the regional distribution in a bar chart. The regions referred to in this bar chart are those described in the introduction to Chapter Three and depicted in Map 2 of that chapter.

Early Prehistoric Ritual and Funerary Site

(MAP 1 & FIG 9)

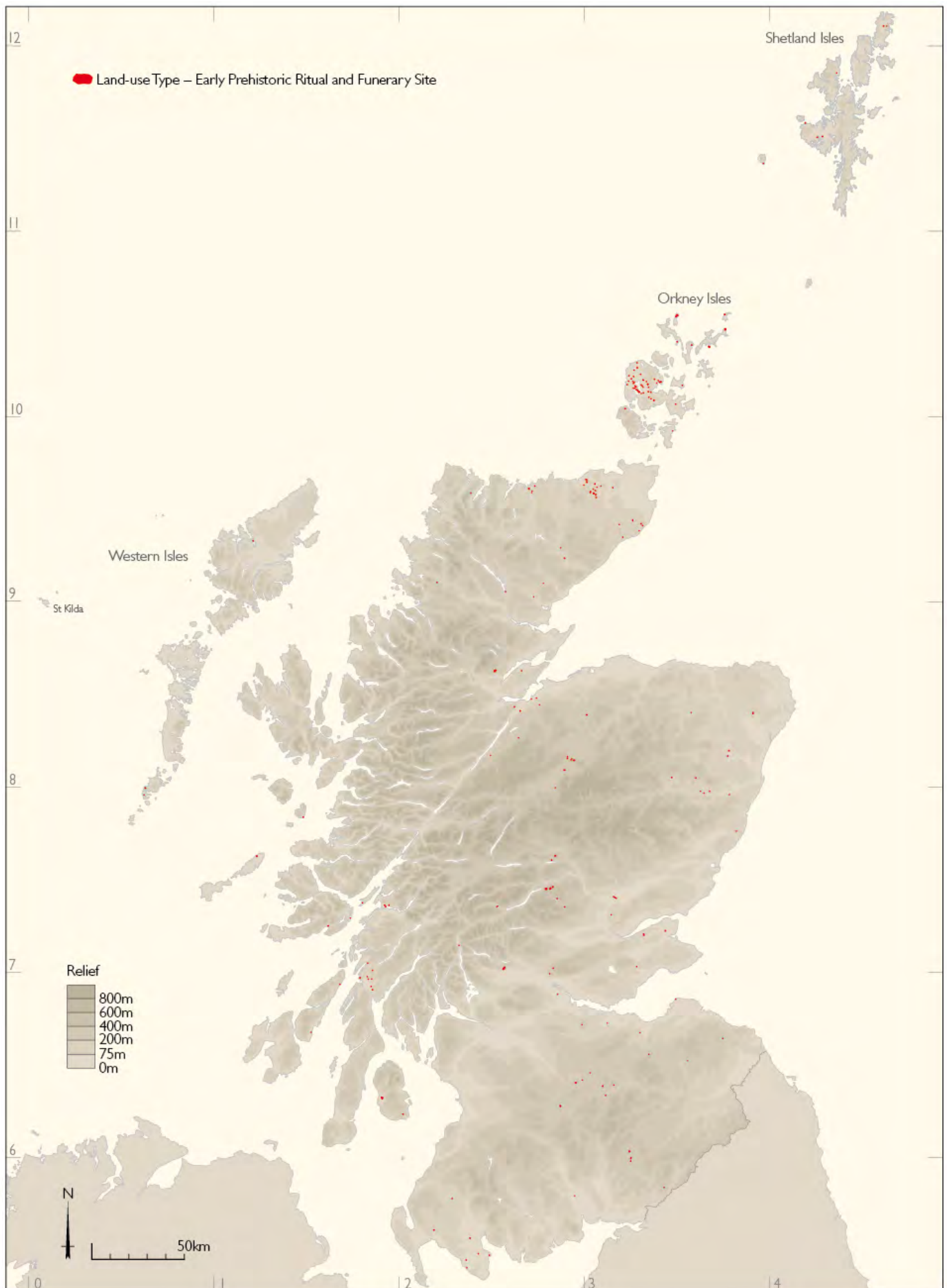
Henges, Stone Circles and Standing Stones
by Angela Gannon

Large circular enclosures, known as henges, were constructed across Britain, in both stone and timber, characterised by a bank and internal ditch. These are found from the north, such as the Ring of Brodgar in Orkney, to the south of Britain, such as Stonehenge, Wiltshire, and date from c3000 BC. Their internal stone circle is often the most visible part. Although stone circles occur throughout Scotland, with concentrations in the north-east, with the distinctive recumbent stone circles of Aberdeenshire, and in Perthshire, few stone circles are extensive enough as landscape features to appear on the HLA map, though large characteristic monuments like Callanish in the Western Isles are included (Fig 8). The purpose and function of these monuments reflects not only the engineering skills but also the beliefs of those who built them, a subject of much debate.¹²

At the time of their construction, the climate was warmer and the sea level much lower, and the peat which was to inundate large areas of the landscape had not begun to form. The abandonment of the stone monuments around 800 BC coincides with wetter climatic conditions and the onset of peat growth, heralding a long and slow process that enveloped the land, protecting some sites and masking others. Indeed, during the later prehistoric and the medieval periods these sites were settled and cultivated with spade-dug and plough-made rigs, and often modified as a result. In the case of Callanish, it was only with the cutting of peat for fuel in 1857 that the stones came to public notice.



Fig 8 The Early Prehistoric Ritual Site at Callanish, Isle of Lewis, once largely subsumed in peat, is surrounded by lazy-bed rig and the grass-covered remains of post-medieval blackhouses. The interpretation centre occupies the foreground and the white houses and fences of the crofts the background. DP110880.



Map 1 Distribution of Early Prehistoric Ritual and Funerary Site areas. Note the Orkney, Caithness concentration. This includes henges, stone circles and cursus monuments. GVO06842.

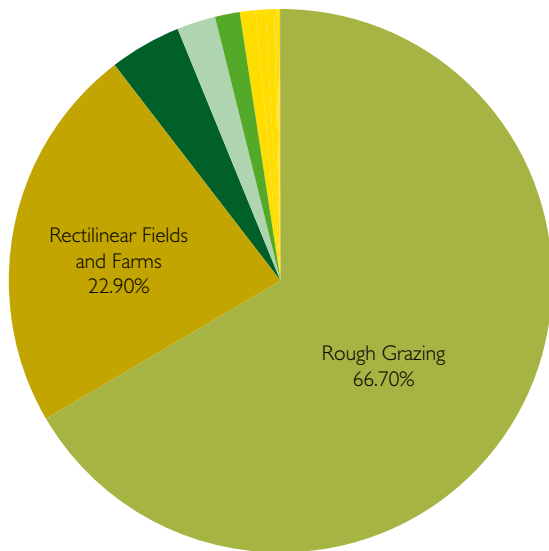
Callanish is at the heart of a group of standing stones, stone settings and stone circles that reveal this as an important focus of ceremonial and ritual activity. There are another six stone circles and seven standing stones within a 5km radius around Loch Roag on the Isle of Lewis. The circles show considerable variety of form. Several are set on crag-and-tail outcrops for maximum visual effect. That at Cnoc Fillibhir Bheag is a double ring of stones, the outer ring composed of eight erect and five now prostrate stones, and the inner ring of four erect stones. Another double ring of stones at Na Dromannan, which overlooks Callanish from a ridge

to the east-north-east, was curiously recorded in 1928 as a 'destroyed stone circle'. Excavation confirmed the presence of an outer ring of seventeen stones and an inner ring of five, and revealed that the stones had been quarried on site and set upright with packing stones directly on the bedrock.¹³

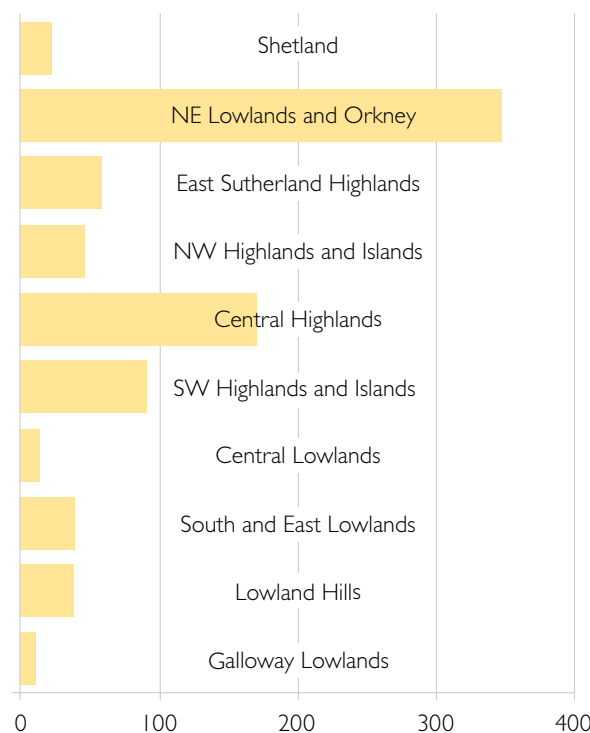
The spectacular and enigmatic stone setting at Callanish occupies a crag-and-tail ridge at the south edge of the crofting township overlooking Loch Roag on the west coast of Lewis (Fig 8). Visible from a considerable distance, it forms a striking silhouette when viewed against the skyline to the east and west.¹⁴

Fig 9 Land use and regional distribution. GVO06897.

- Plantation 4.25%
- Recreation Area 2.29%
- Managed Woodland 1.47%
- Others, less than 1%: Planned Rectilinear Fields and Farms, Traditional Peat Cutting, Designed Landscape, Golf Course, Smallholdings, Medieval/Post-medieval Curvilinear-shaped Fields, Crofting Township, Urban Area



Current Land-use Type of land that has been interpreted as Early Prehistoric Ritual and Funerary



Area (ha) – by region – of land that has been interpreted as Early Prehistoric Ritual and Funerary

Cursus Monuments by Kirsty Millican

Cursus monuments are ceremonial sites of Neolithic date, comprising long enclosures defined either by post-holes which would have supported large upright timber posts (timber cursus monuments) or by banks and ditches (earthwork cursus monuments). Now predominantly plough levelled, they are recorded mainly as cropmarks through aerial photography. As a consequence, few survive as upstanding features in the modern landscape, and they are mainly recorded by the HLA as part of the Cropmark Prehistoric and Undated Settlement and Agriculture Land-use Type, or, where upstanding elements survive, as Early Prehistoric Ritual and Funerary sites (c4000-1500 BC), such as the Cleaven Dyke in Perthshire. Nevertheless, they form a distinctive and important element of the prehistoric period within Scotland, the Neolithic in particular, providing evidence of the use of the landscape for ritual activity on a monumental scale by some of the earliest farmers in Scotland.

In total 51 cursus monuments have been recorded in Scotland. Of these, 29 are defined by post-pits that would have supported large timber posts, while the rest are of ditch and bank construction. A number have been excavated, providing the dating evidence for this largely cropmark corpus of sites and indicating that the two forms of cursus monument are also of slightly different date. Timber cursus monuments are an Early Neolithic monumental form, with dates largely falling within the first half of the fourth millennium BC (c4000-3500 BC), while those of earthwork construction are slightly later in date, constructed within the second half of the 4th millennium BC. On the whole these are large

monuments, some measuring several hundred metres in length – the timber cursus at Milton, Angus, for example, is around 470m long. Others appear to have been of relatively more modest dimensions; for example, the timber cursus monuments at Kirkmabreck North, Dumfries and Galloway, and Douglasmuir, Angus measure 60m and 65m in length respectively. Earthwork cursus monuments are generally of more massive dimensions to those built of timber, though there is considerable variability (Fig 10). Not all have been recorded to their full extent; the lengthy nature of cursus monuments means that they may extend across fields of varying sensitivity to cropmarking, and consequently the full lengths of some of these monuments have not always been recorded. Nevertheless, even those of lesser dimension were large constructions requiring substantial investments of time and resources to build, and they reflect the early alteration of the landscape by Neolithic communities.

As most cursus monuments have been recorded as cropmarks, their distribution largely reflects the cropmark-producing areas of Scotland – the drier arable farming areas to the east and south of the country, areas predominantly of modern Rectilinear Fields. Without further evidence it is difficult to be certain if this is a true reflection of their distribution. Nevertheless, the currently available evidence indicates that they are a phenomenon of lowland Scotland, recorded within modern arable fields, often on gravel terraces overlooking rivers. Many have been recorded within complexes of cropmark features of varying dates and thereby represent just one element in the long-term use of the landscape in these locations.¹⁵



Fig 10 At 3km, the Cleaven Dyke near Blairgowrie in Perthshire is a cursus of tremendous length. Its bank is visible in the clearing and the lines of the ditches to either side as cropmarks in the field in the foreground. The scale of the site indicates that the landscape was open enough or was opened up to enable this monument to be built. DPO10864.

Early Prehistoric Settlement and Agriculture

(MAP 2 & FIG 12)

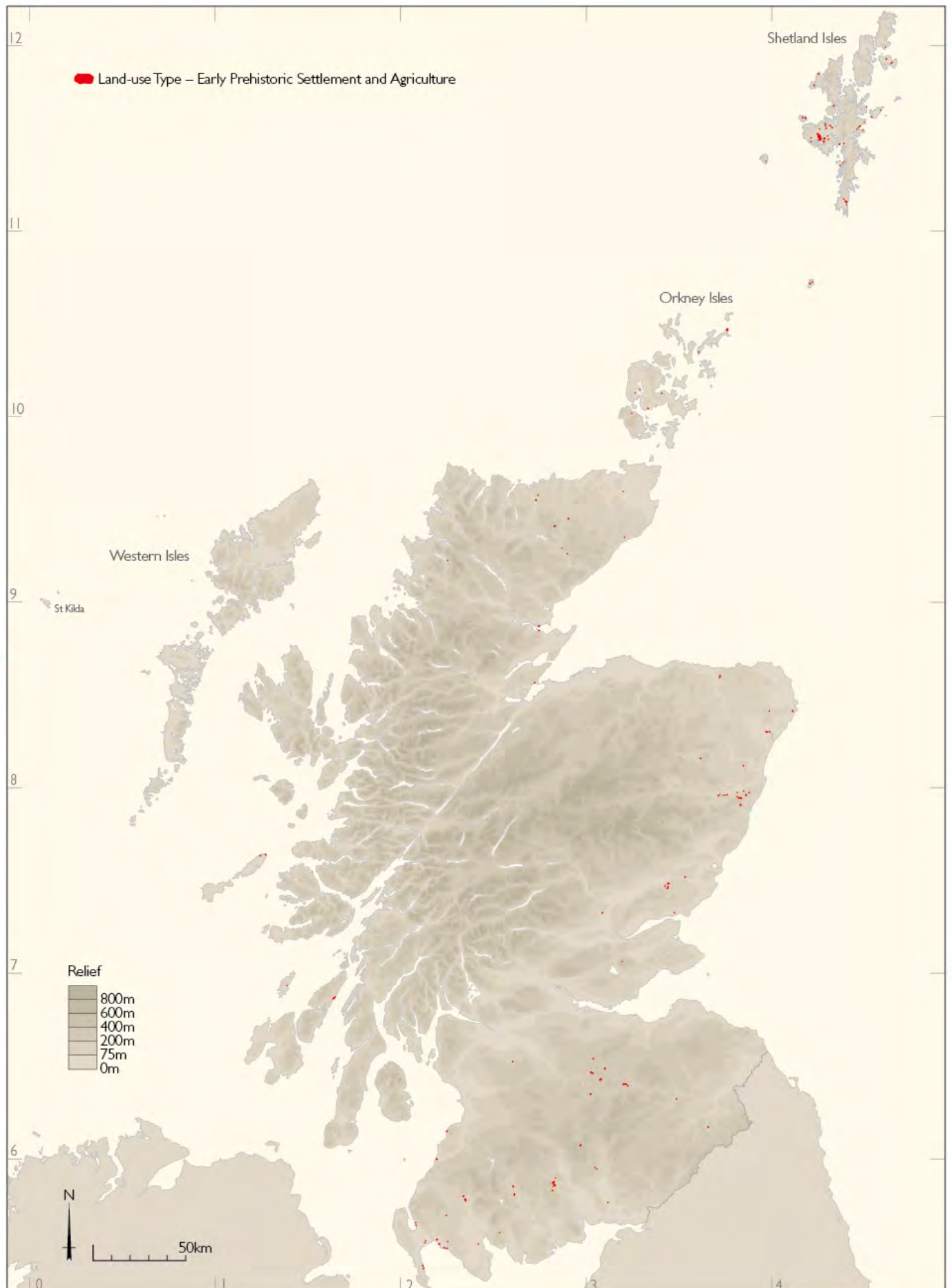
Neolithic Settlements in Shetland by Dave Cowley

Today, the vast majority of the land mass where early prehistoric monuments and landscapes are to be found is moorland and rough grazing, and this represents an extensive source of potential survival of evidence. Shetland's location, at the northern extremity of Scotland, has had a profound impact on its climate and environment, with consequent strong influence on its cultural landscapes, providing an especially good context for the survival of early prehistoric settlement remains (Fig 11). Modern and historic settlement is largely limited to favoured coastal locations, and intensive land use is similarly constrained to very small areas.

The remains of this earlier prehistoric settlement and land use enjoy very different levels of visibility in the contemporary landscape. In the rough grazing moorland of inland areas of Shetland, many of the agglomerated field plots and clusters of houses lie in locations that are relatively well drained and have relatively lush grass-dominated vegetation. They have thus remained a magnet for grazing animals and subsequent activity in a self-perpetuating cycle, and are frequently visible from a distance as a verdant green patch in an otherwise brown landscape. There are frequently plantigrubs and folds in these same locations, taking advantage of the improved soils, lush vegetation and ready supply of building stone represented by the earlier prehistoric remains. There is also patchy evidence for similar remains within the areas of predominately post-medieval settlement and land use, reflecting the relatively low impact of subsequent activity on these earlier features. The prehistoric landscapes of Shetland are remarkable evidence of the earliest agricultural societies, surviving in extenso because of the patterns of later land use and settlement.



Fig 11 Scord of Brouster; Neolithic/Early Bronze Age settlement and field system (the sinuous stone dyke) on West Mainland, Shetland. SC336214.

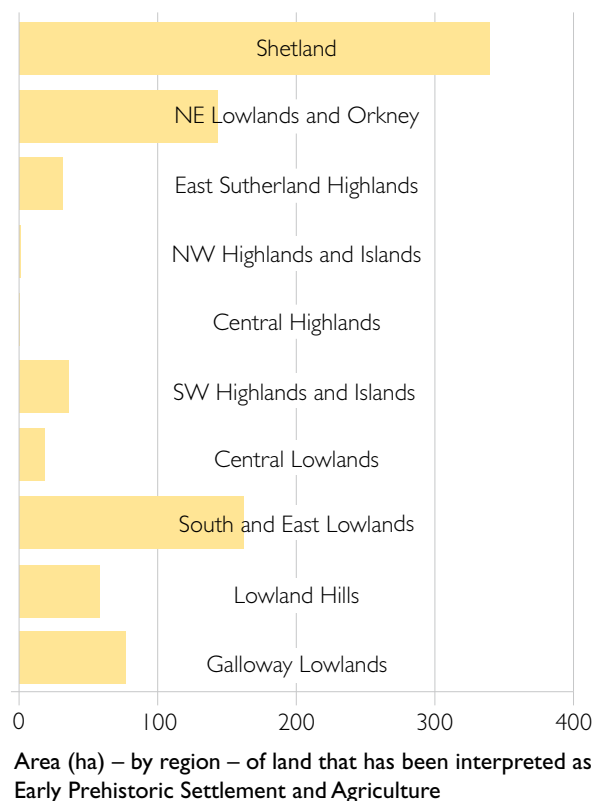
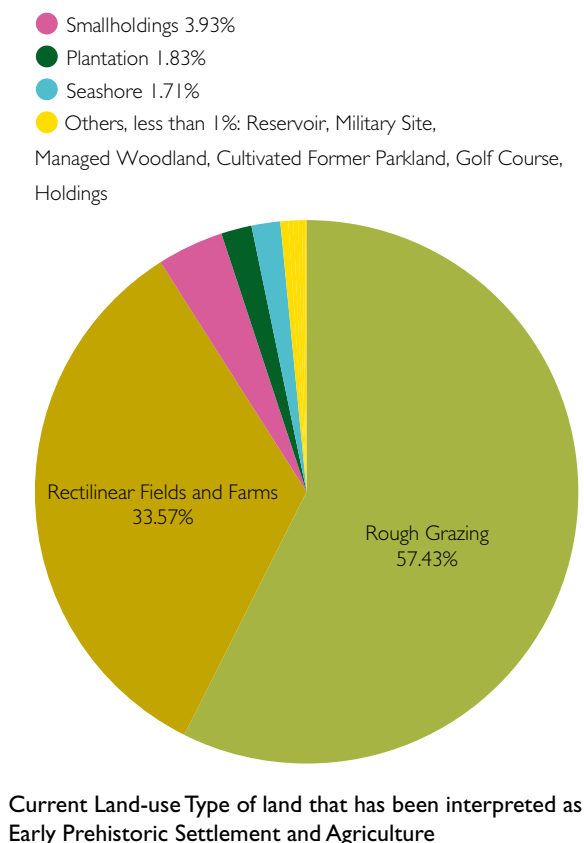


Map 2 Distribution of Early Prehistoric Settlement and Agriculture areas with a notable concentration in Shetland. GVO06843.

Archaeological survey and limited excavations have demonstrated that extensive remains of prehistoric structures, including cairns, houses and field boundaries, survive in Shetland’s unimproved ground and that in places such remains are subsumed in extensive blanket peat development. The presence of chambered cairns, the excavations of a few domestic structures and the landscape context and relationships with blanket peat have prompted suggestions that many of these remains are Neolithic in date, though given the character of the dating evidence a broad Neolithic to Bronze Age date is more appropriate. Recent field survey has established

that in addition to the well-known agglomerations of sub-circular plots, assumed to be fields, there are boundary systems extending over hundreds of metres, or even kilometres, that demarcate large areas of ground. These clearly predate at least some of the blanket peat development, and there is a good case for arguing that they are Neolithic and Bronze Age in date: they are thus a unique survival in Scotland of extensive land-use evidence for the earliest agricultural societies, together with the agglomerated field plots. The combination of agglomerated small plots and extensive area boundaries suggests a mixed arable and stock land-use system.¹⁶

Fig 12 Land use and regional distribution. GV006898.



Later Prehistoric Settlement and Agriculture

(MAP 3 & FIG 16)

Prehistoric Cultivation by Dave Cowley

It is rare to be able to identify the remains of prehistoric cultivated field surfaces in the contemporary landscape. Generally prehistoric cultivation is inferred from the presence of features such as clearance cairns, field boundaries and lynchets, or it is recognised from palaeo-environmental evidence contained in ancient soil, such as pollen rain, or in excavations as ard marks, which are the narrow gullies cut into the subsoil by the action of the point of a plough with no mould board, as for example at Killearnan, Lairg in Sutherland.

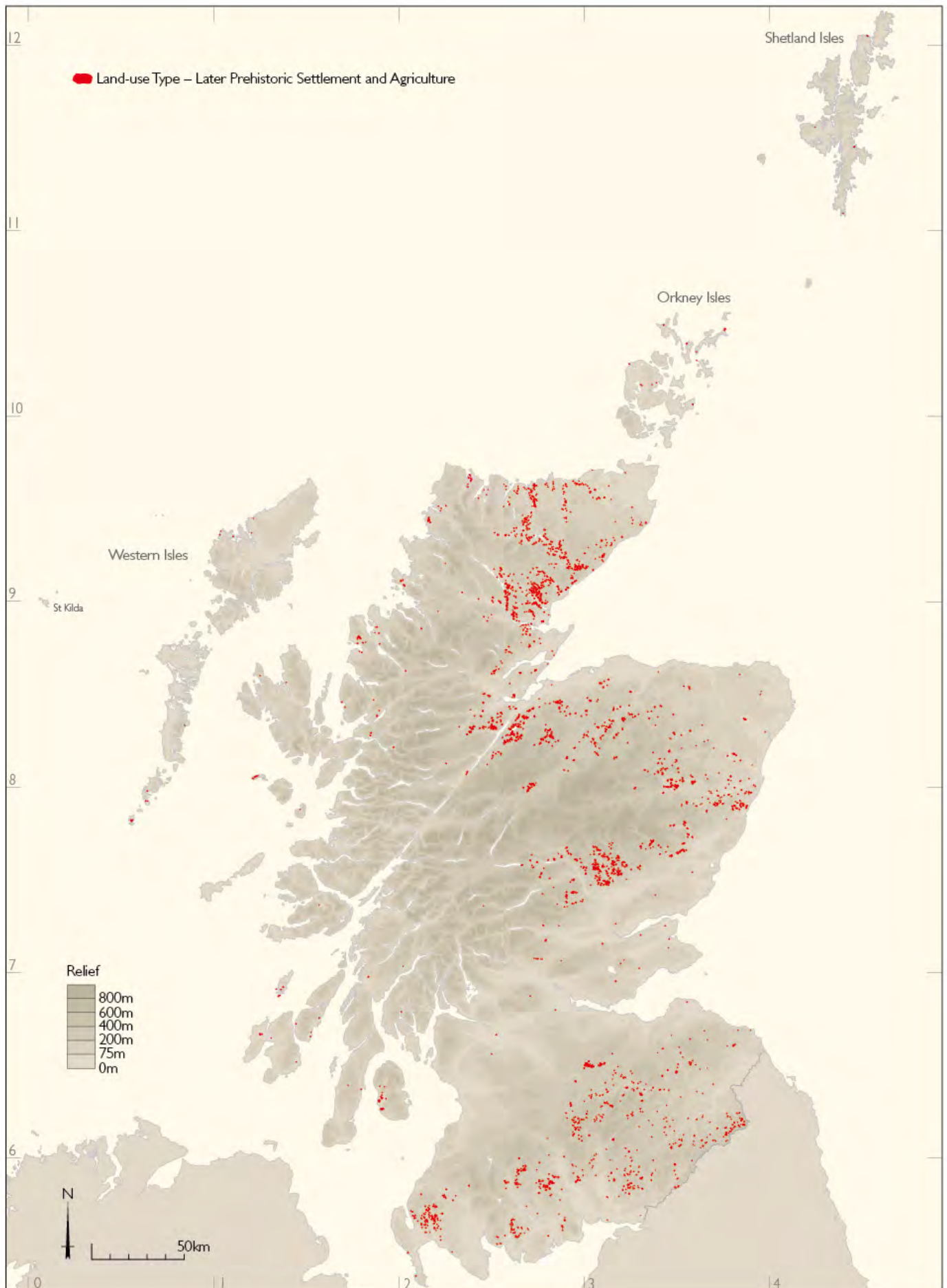
The reworking of formerly cultivated ground is a consistent pattern throughout the prehistoric and historic periods, and there is widespread overprinting by medieval and later rig cultivation. Cord rig can be an exception to this: a form of cultivation remains surviving on the surface as furrows spaced between 1.2m and 2m apart, usually with a slight raised bed between them. The processes that created the cord

rig are debated, with both ploughing and spade-dug processes being suggested. In practice the creation of the rigs and furrows was probably through a combination of such activities, using an ard to break up the soil and mix it, and spades to mound up and maintain raised beds. Cord rig is assumed to predate the advent of the mouldboard plough, an innovation that makes the building of cultivation ridges efficient and without which it is necessary to use a hoe or spade.

Cord rig was first discovered as the corrugated surface of a cultivated soil under the Roman fort at Rudchester in Northumberland, and subsequently a large number of examples have been found both from the air and on the ground, concentrating in the upland areas of Northumberland and southern Scotland. Elsewhere a thinner scatter of locations have been identified in excavations, or from field work in north-east Perthshire, generally where surface peat has been burnt off. While Rudchester indicated a pre-Roman context, evidence from North Mains in Perthshire indicates a date as far back as the second millennium BC, while dates from the onset of peat growth and field evidence from Denmark suggest the form of cultivation extends into the mid- or later first millennium AD on the continent.



Fig 13 Cord rig cultivation at Hut Knowe, Scottish Borders. DP154938.



Map 3 Distribution of Later Prehistoric Settlement and Agriculture areas surviving mainly on the edge of the upland zone. GVO06844.

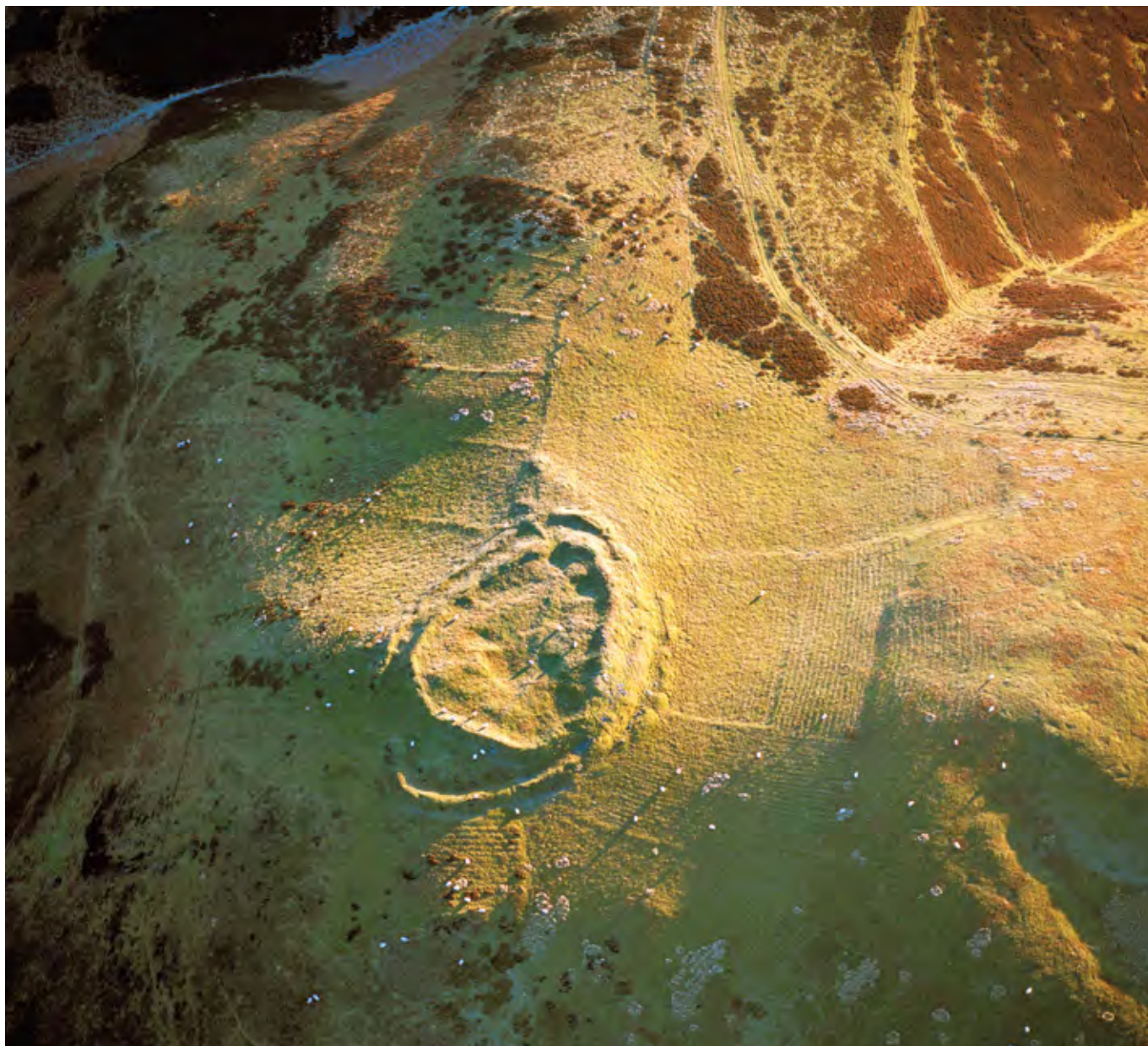


Fig 14 Aerial view of the rectangular fields of cord rig around the Iron Age settlement at Hut Knowe, Scottish Borders. DP249911.

Remarkable survivals like the settlement, field system and extensive cord rig at Hut Knowe on the Scottish side of the Cheviots suggest an Iron Age date (Figs 13 & 14). As well as the corrugated surfaces of the cord rig, field observation has identified 'smoothed areas' surrounding the cord rig, indicating that the setting of the rigs was an element of a cultivation practice which also involved the levelling of raised beds and possibly the resetting of the rigs. Such areas can most easily be identified where they are juxtaposed with the corrugated surfaces.

The corrugated field surfaces of cord rig are important because they represent incredibly rare earthwork survivals of an ephemeral and transitory farming practice, perhaps representing a single year of activity in an agricultural cycle. It survives in small nooks and crannies of the landscape that have not been reworked since, usually in areas where the surface remains of Iron Age timber houses also survive.¹⁷

Round Houses and Hut Circles by John Sherriff

The range of Scottish monuments that can be classified loosely together under the heading Later Prehistoric Settlement and Agriculture is as broad as the variety of geological, topographical and climatic conditions that so influenced the selection of their location, aspects of their design and methods of construction. All these influences, to some degree, have also affected the chances of any particular remains surviving today but also of their being visible. For example, the stone walls and floor of a hut circle built on a dry slope in the Late Bronze Age may be well preserved but are now virtually undetectable under 2m of peat. Nevertheless, though incomplete, the current evidence for settlement indicates that while the total number of people living at any

particular time in what is now Scotland within the later prehistoric period must have been considerably smaller than it is today, they inhabited wider areas of the landscape. In fact, during the totality of the period in question they probably occupied, even if it might have been temporarily or sporadically, any and all locations that offered sufficient resources to support them. As a result, evidence for settlement from the Middle Bronze Age through to the end of the Iron Age is encountered not only across the richer, generally low-lying, soils of the country, where remains of settlements rarely survive in the form of upstanding monuments, but also in the higher and more remote areas where there are extensive landscapes that have largely escaped the destructive consequences of modern agriculture. Indeed, in north-east Perthshire they may be found up to 550m above sea level.

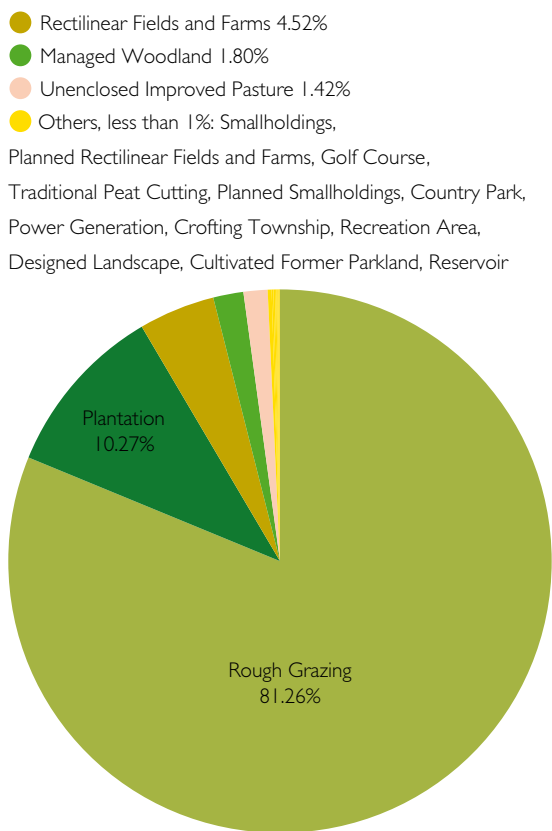
Fig 15 Hut circle at Loch Vatachan, Wester Ross, Highland, revealed by burn-off. SC919550.



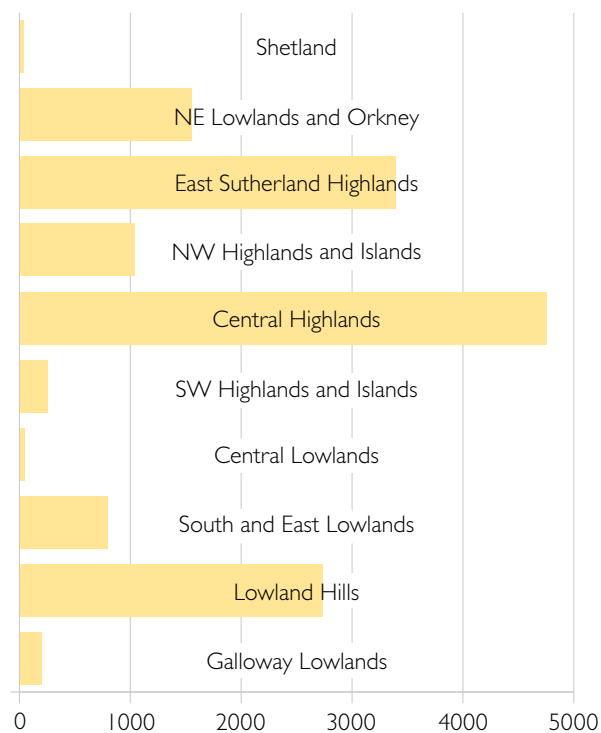
However, the picture represented by these surviving prehistoric landscapes is not a uniform one. For instance, the numerous and often extensive remains of Bronze Age hut circles in the north and north-east of the country are predominantly visible within moorland landscapes largely free of deep peat (Fig 17). This contrasts markedly with much wetter west of the country (Fig 15), where many of the hut circles now lie beneath a deposit of peat so deep that the position of some is only identifiable because of the presence of a shallow hollow in the surface of the peat. There is also a remarkable contrast between the entirely timber-built round houses perched on platforms dug into steep-sided hills in the Southern Uplands, such as Hurl Burn in Lanarkshire, and the broadly contemporary thick-walled, wheel-house structures built on the coastal areas of the Northern and Western Isles, as at Jarlshof in Shetland.

In addition to the extensive deposits of deep peat across much of Scotland which preserve, but also obscure, the surviving remains of later prehistoric settlements and field systems, consideration must also be given to the potential for such remains to survive in other contexts. That the marine shell-derived machair on the coasts of the Northern and Western Isles, the Inner Hebrides and parts of the mainland west coast contains remarkable remains of the Bronze Age and the Iron Age is well documented: less well known is the potential for the mineral-based wind-blown sand deposits on the mainland east coast to hold and ultimately yield evidence of similar date.¹⁸

Fig 16 Land use and regional distribution. GV006899.



Current Land-use Type of land that has been interpreted as Later Prehistoric Settlement and Agriculture



Area (ha) – by region – of land that has been interpreted as Later Prehistoric Settlement and Agriculture



Fig 17 Clearance cairns and field boundaries in this rough pasture are associated with two large round houses, Strone Hill, Perthshire. DP22887.

Later Prehistoric Fortified Site

(MAP 4 & FIG 19)

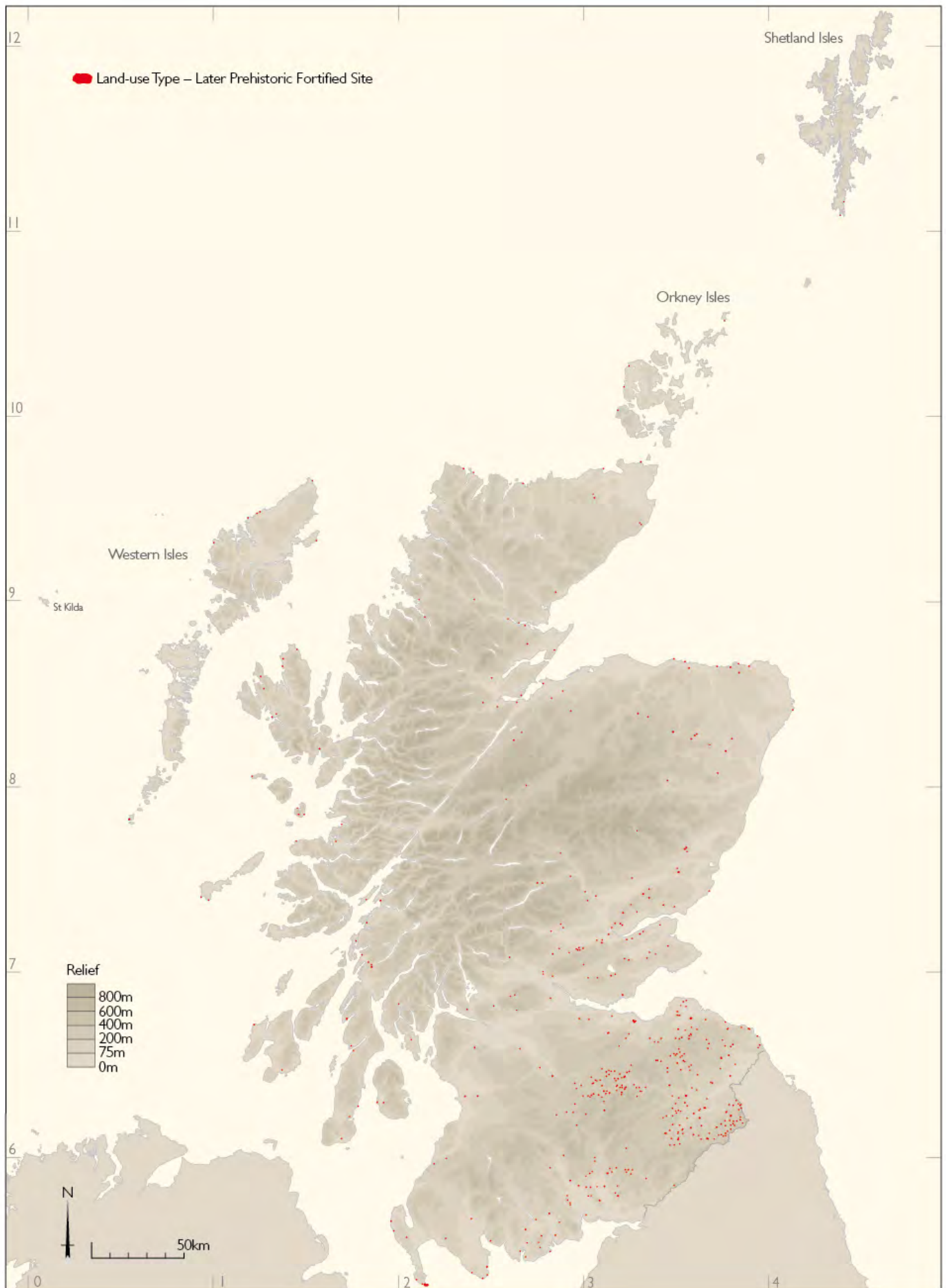
Iron Age Forts by John Sherriff

Later prehistoric forts can be found across the length and breadth of Scotland, except for high mountainous areas. However, the density of this distribution is simply a reflection of the fact that they were likely to be constructed, or reconstructed, at any time throughout both the first millennium BC and the first millennium AD. Forts include an extensive diversity of site types which were constructed in a wide range

of topographical locations. Of those sites that are still visible as earthworks, all have suffered from the natural processes of degradation through time, and a very high percentage have been affected by quarrying, either of the natural stone, gravel or sand on which the sites stand or of the material from which their defences were constructed. Moreover, the state of preservation of any particular upstanding site can range from those with ramparts that have been reduced to features barely a few centimetres high to those with stone walls represented by heaps of rubble up to 4m high, as may be seen at White Caterthun in Angus.

Fig 18 The excavated ditches and round houses of the Iron Age fort and settlement at Broxmouth, East Lothian, revealed by a cropmark and now destroyed to extract limestone for cement. SC576744.



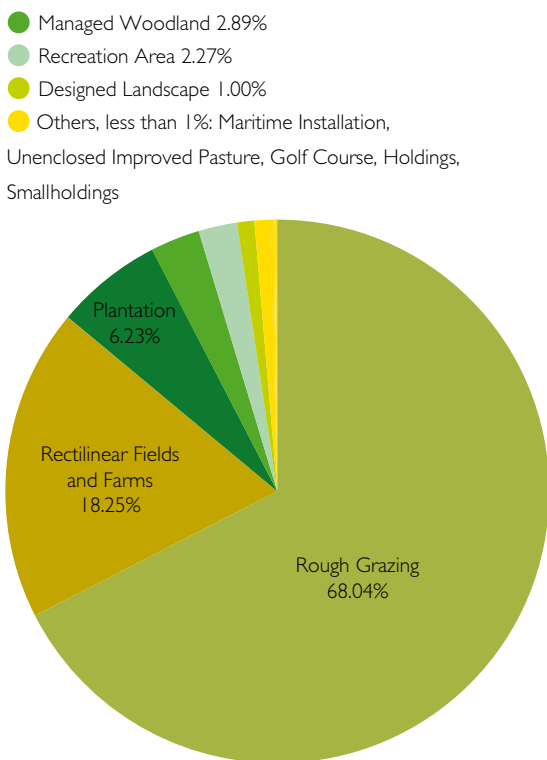


Map 4 Distribution of Later Prehistoric Fortified Site areas, showing a distinct bias to the south-east. GVO06845.

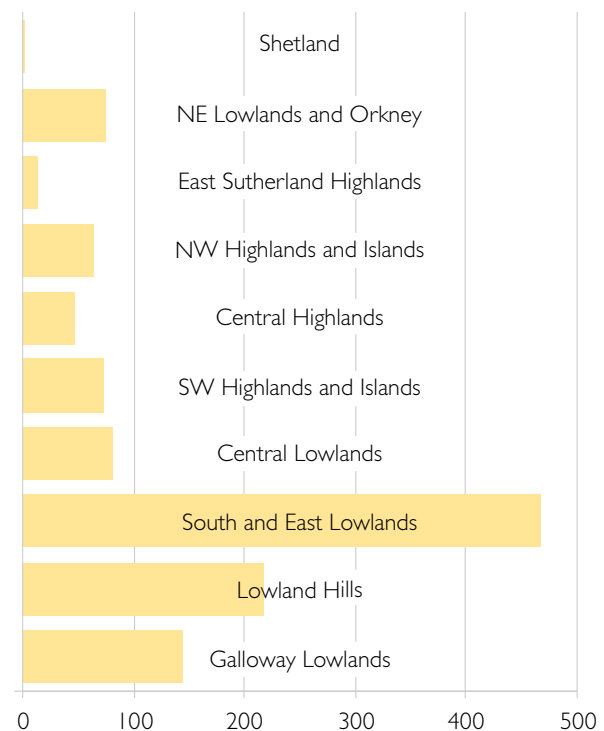
Forts of this period are places that have been modified by the provision of strong, artificial defences such as high and thick stone walls or earthen ramparts and ditches, or a combination of these. From the summits of hills to the edge of sea-cliffs, they were built in locations where naturally defensive attributes, such as steep or precipitous slopes, lent themselves to being modified by the addition of artificial lines of defence. The majority of forts appear to be situated on or close to land that was capable of supporting agricultural communities. That they were built across the whole of what is currently the arable zone is confirmed not only by those forts which are still visible on isolated 'islands' of rough pasture within the modern cultivated landscape, but also by the numerous sites recorded as cropmarks on aerial photographs. However, some forts occupy locations so remote from ground that has ever been cultivated, for example Ben Griam Beg in Sutherland (Chapter Three, Fig 19), that they may have served a distinct function.

Excavation of forts that have been reduced to cropmarks, such as Broxmouth in East Lothian (Fig 18), has demonstrated that even sites that have been ploughed for many years can still retain a remarkable degree of preservation. However, it is those sites now lying on more marginal land which offer the greatest potential for learning about and understanding them. Forts that have been only slightly cultivated, perhaps in the medieval period, may preserve buried features but exhibit poorly preserved surface remains. But it is forts which have never suffered the effects of cultivation which offer opportunities for analysis and interpretation without resorting to excavation. A site that perfectly typifies this is Castle Law, Forgandenny, in Perthshire where recent survey has demonstrated clear relationships between at least four phases of defence and periods of unenclosed settlement.¹⁹

Fig 19 Land use and regional distribution. GV006900.



Current Land-use Type of land that has been interpreted as Later Prehistoric Fortified Site



Area (ha) – by region – of land that has been interpreted as Later Prehistoric Fortified Site

Prehistoric and Undated Settlement and Agriculture – Cropmark

(MAP 5 & FIG 22)

The Lowland Landscape in Prehistory by Dave Cowley

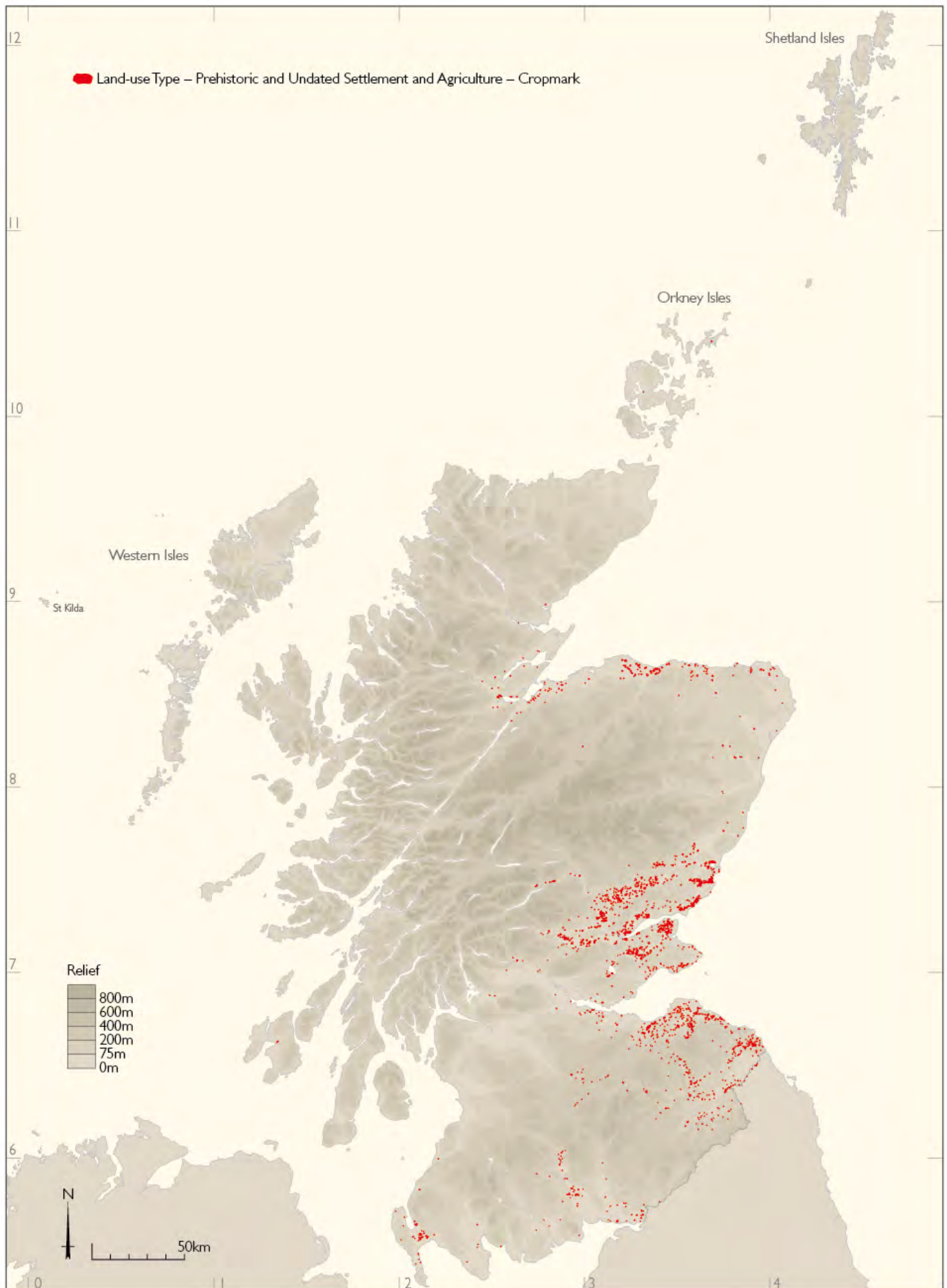
Most areas of lowland Scotland are farmland that has been repeatedly ploughed for agriculture, the product of the wholesale recasting of the landscape in the 18th century and later. The impact of cultivation over preceding centuries in these areas has largely removed visible traces of earlier settlement and land use, which is generally limited to the survival of earthworks on rocky or otherwise intractable ground, or through incorporation into plantations and other landscape design features. Cropmarking, or differential vegetation cover, is one of the main

sources of insights into medieval and prehistoric land use and settlement landscapes in the Lowlands.

This source of evidence about past landscapes is concentrated into areas that are favourable to development of cropmarks – that is predominately arable, with well-drained soils on sand and gravel, and lower rainfall. All these factors combine to produce differential crop stress that reveals variations in the depth of the topsoil, and thereby buried evidence of ditches and pits, and, more rarely, metalled surfaces and walls. Most of the evidence has been collected piecemeal over the last 70 years through targeted reconnaissance. It is distributed predominately along the east coast from Inverness to Berwick, with pockets of evidence extending inland along the major rivers, along the river valleys and some lowland parts of the south-west, and other discrete pockets such as the middle reaches of the Clyde.



Fig 20 Cropmarks of horseshoe-shaped pits mark prehistoric houses, overlain by medieval reverse-S-shaped rig at Southfield, Leuchars, Fife. SC1029402.



Map 5 Distribution of Prehistoric and Undated Settlement and Agriculture - Cropmark areas. Concentrated in farmland of the lowland zone. GVO06846.

The cumulative cropmark record provides fundamental, if selective, evidence for many periods, in particular the Neolithic (see above – Cursus Monuments) and Roman (see below – The Antonine Wall). More generally it provides evidence across the lowland landscape for settlement, agriculture and land divisions of prehistoric and later periods. For prehistoric settlement, regional variation is evident in the varying emphasis on enclosed and unenclosed settlements along the eastern seaboard; for example, enclosed settlements predominate in East Lothian. The patterns of occupation that are revealed indicate palimpsests where people have returned repeatedly to the same locale, often at intervals separated by considerable gaps, for example at Southfield, Leuchars, in Fife (Fig 20). In other cases, single periods of occupation or, more rarely,

the potential for long-lived occupation are evident. Together, this suggests that the prehistoric and perhaps early medieval lowland settlement pattern formed a patchwork of settlement foci, characterised by repeated reoccupation of older foci and episodic establishment of settlement in new locations. More difficult to detect are the same episodic patterns of land use, probably in a mosaic of shifting arable and established pasture and woodland.

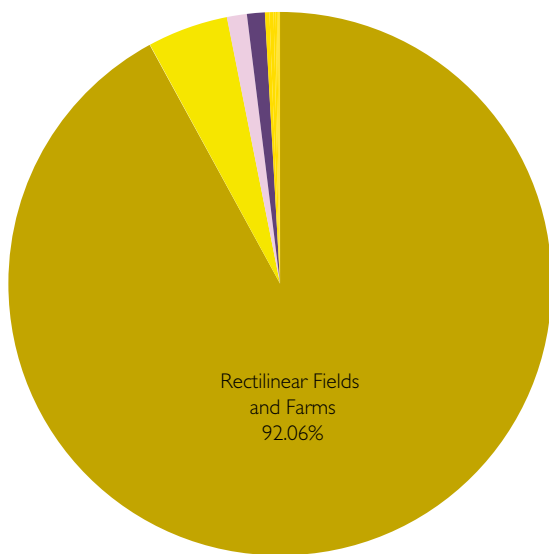
Prehistoric land division in East Lothian is evidenced by pit-defined boundaries, but elsewhere categorical evidence of land use is difficult to identify, though many photographs record distinctive small crescentic cropmarks that have formed over tree-throws, indicating the presence of former woodland (Fig 21).²⁰



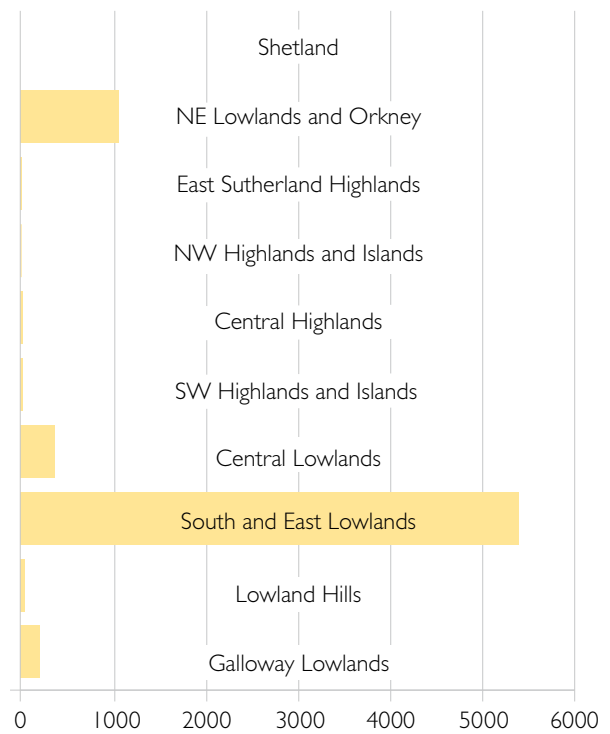
Fig 21 Tree-throw cropmarks, visible as short linear and D-shaped features, and enclosed settlement at East Galdenoch, Dumfries and Galloway. SC587127.

Fig 22 Land use and regional distribution. GVO06901.

- Cultivated Former Parkland 4.81%
- Holdings 1.17%
- Planned Rectilinear Fields and Farms 1.07%
- Others, less than 1%: Golf Course, Rough Grazing, Recreation Area, Planned Village Allotments, Plantation, Industrial-scale Farming Unit, Designed Landscape, Smallholdings



Current Land-use Type of land that has been interpreted as Prehistoric and Undated Settlement and Agriculture – Cropmark



Area (ha) – by region – of land that has been interpreted as Prehistoric and Undated Settlement and Agriculture – Cropmark

Roman Military Site

(MAP 6 & FIG 24)

The Antonine Wall by Rebecca Jones

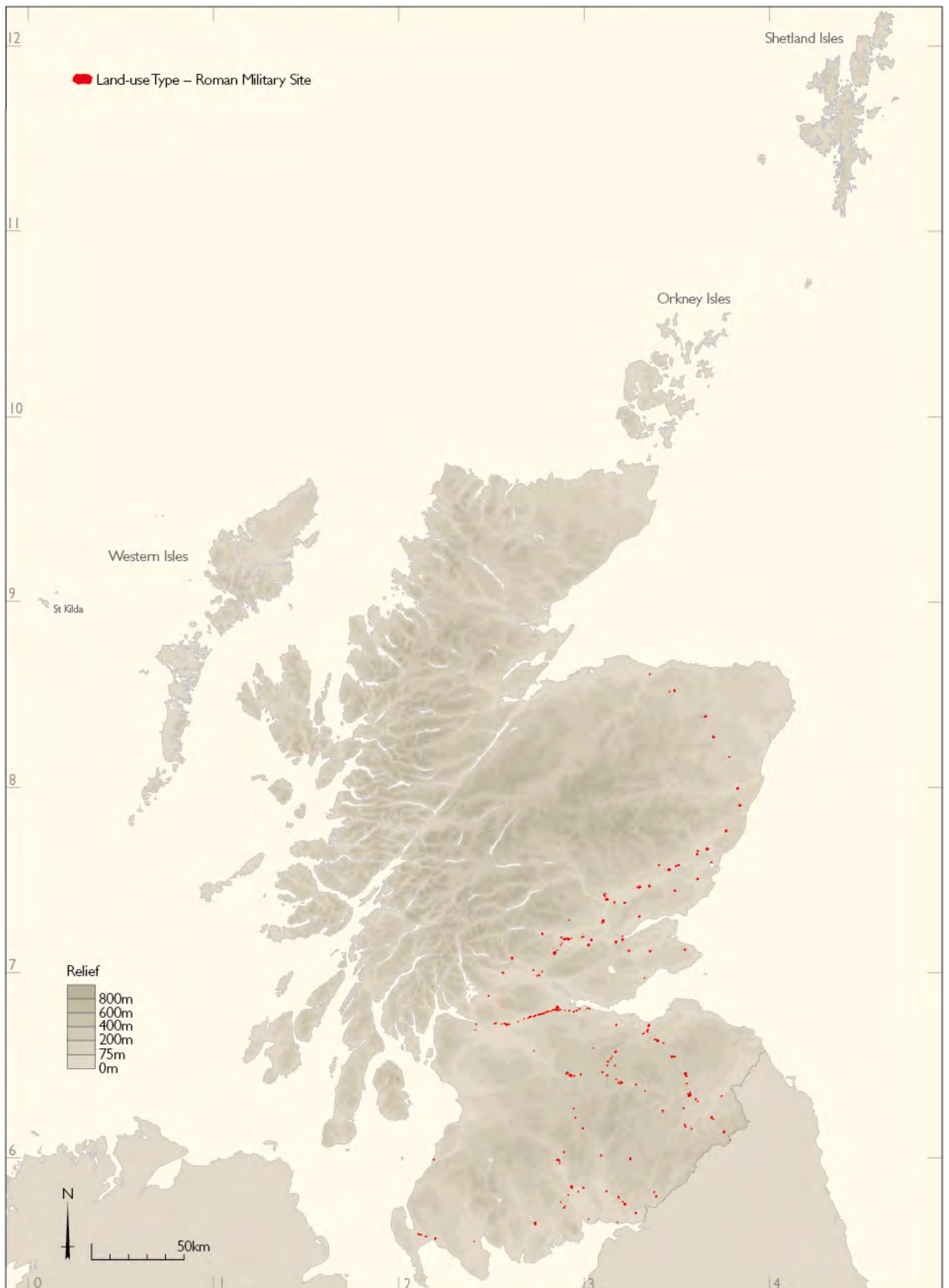
Of all Roman sites in Scotland the Antonine Wall has left the most extensive impact on the modern landscape. Constructed in the AD 140s by Roman soldiers on the instructions of the Emperor Antoninus Pius, it was a linear frontier barrier, built of turf on a stone footing with a large ditch to the north. Accompanied by forts, fortlets and other features, and running for 60km between the northern shore of the Clyde and the southern shore of the Firth of Forth, it cuts a swathe across central Scotland, an area which has seen a significant amount of development in the intervening two millennia: agricultural improvements; industrial activity; the growth of villages, towns and cities; and the construction of railways, canals and roads. Yet, it remains a significant landscape feature for large swathes of its length, with around a third still visible

in some shape or form, whether as subtle earthwork features or with the ditch of the Wall still prominent. Elsewhere, parts of the wall and its accompanying structures are visible as cropmarks from the air.

Perhaps one of the surprising features about the Wall is that it has not dominated the later landscape layout except in a few areas where the ground is now utilised as rough grazing, such as at Croy Hill, Dunbartonshire (Fig 23), or as recreational areas such as Bar Hill, Dunbartonshire, and Kinneil, West Lothian. Occasionally field boundaries and roads follow its route, most notably Grahamsdyke Road in Bo'ness, West Lothian. Yet in the areas where the Wall is either ploughed flat (therefore revealed as cropmarks) or only visible as a slight feature (usually the dip of the ditch), it is clear that modern agriculture and industry have been the most notable activities to affect the Wall (including the planned village at Allandale), as well as the growth of towns such as Falkirk and the city of Glasgow. Indeed, a possible Roman temple of Arthur's O'on was destroyed in 1743 to provide stone for the mill dam of the Carron ironworks.

Fig 23 The Antonine Wall at Croy Hill, North Lanarkshire, cut by a railway line in the foreground. SC337340.





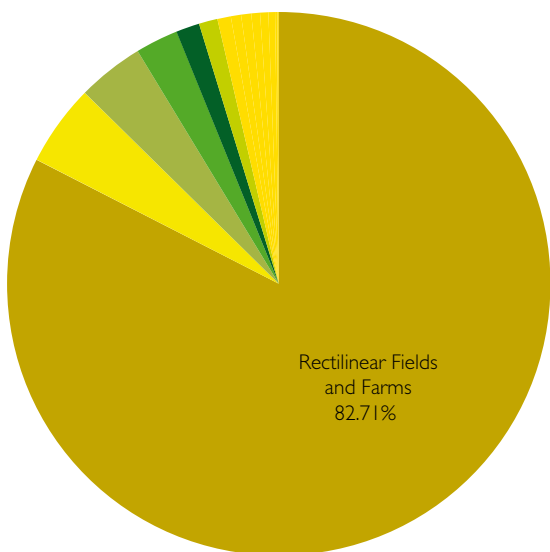
Map 6 Distribution of Roman Military Site areas is focused on the south and east of Scotland and does not penetrate the Highlands. GVO06847.

At Kirkintilloch, the medieval Kirkintilloch Peel and town sit on top of the Roman fort. New Kilpatrick cemetery in Bearsden is built across the Wall, but two stretches of its stone base have been left open for visitors to see. Elsewhere, the Wall has been variously included in the designed landscape of Callendar Park,

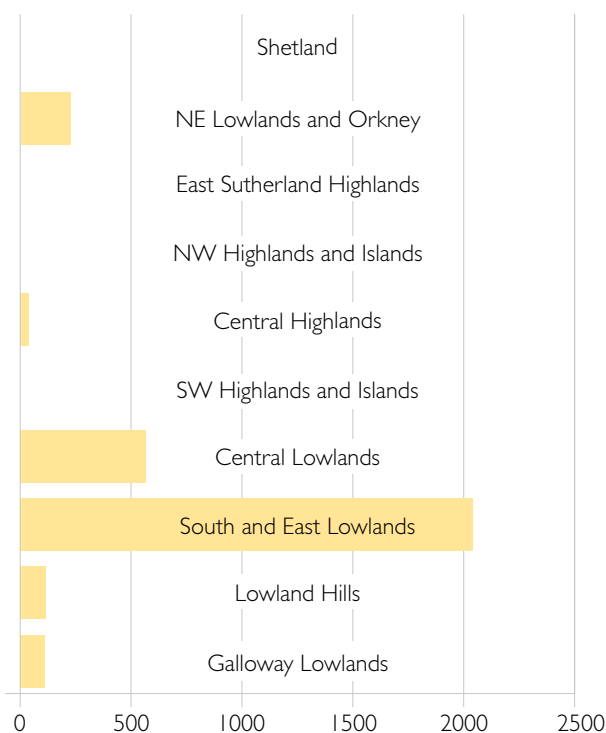
Falkirk, an airfield in Cumbernauld, a ski slope at Polmonthill, Stirlingshire, and numerous golf courses. It is most easily seen in managed woodlands, as at Watling Lodge, where the ditch is best preserved, and a section of the Military Way that goes behind the wall is detectable at Seabegs Wood, Stirlingshire.²¹

Fig 24 Land use and regional distribution. GVO06902.

- Cultivated Former Parkland 4.80%
- Rough Grazing 3.91%
- Managed Woodland 2.52%
- Plantation 1.38%
- Designed Landscape 1.09%
- Others, less than 1%: Planned Rectilinear Fields and Farms, Recreation Area, Holdings, Golf Course, Smallholdings, Urban Area, Country Park, Industrial or Commercial Area



Current Land-use Type of land that has been interpreted as Roman Military Site



Area (ha) – by region – of land that has been interpreted as Roman Military Site

Forts and Roads, with Dere Street Case Study by Adam Welfare

Although a network of Roman roads covers most of Britain, it only extends through south-east and south central Scotland to the Forth–Clyde isthmus. Beyond this, one road alone, representing the most northerly in the Empire, runs for at least another 113km north-eastwards to a point near Kirriemuir in Angus. While the network might have been even more wide-ranging had the Romans conquered and sought to hold more of the country, the roads traverse almost every sort of terrain, some running through lush river valleys and over high passes, such as Dere Street, while others take the most direct line towards their intended destinations. Routes were chosen astutely, and the roads were often built so well that they were used for centuries thereafter, whether by kings seeking battle, or by peasants driving geese to a fair, as on Dere Street. Moreover, even after almost two millennia, long sections still underpin the modern network, such as parts of the A68 north of Jedburgh.

Roads were part of the Roman military infrastructure necessary to hold territory secured through treaty or force of arms. They formed the vital link between forts, fortlets, watchtowers and camping grounds clustered at key points along the way. The more permanent of these held the garrisons that patrolled and guarded the newly won country, and these were ultimately connected to the great legionary fortresses that commanded strategic locations.

A road can be difficult to date and this is usually achieved only by reference to the installations along its line, although sometimes these might have been constructed before the network reached them. However, the system in Scotland expanded as territory was gained and so it spread rapidly northwards from the mid-late 70s AD.

Not every road was built the same way, but the more important were provided with solid foundations of stone, over which smaller cobbles were laid, before the whole was dressed with a surface of gravel. Brushwood matting might be set down where boggy ground was to be crossed, while small burns were culverted and streams or rivers bridged. Without regular maintenance the roads became increasingly neglected in the centuries that followed. In some places, the old Roman work has all but disappeared, while fords are now situated where watercourses were bridged. In those areas where they do not underpin the present network or where they have not been destroyed by agricultural improvement, they can still sometimes be traced as a trackway or as a drove road like that at Whitton Edge, Scottish Borders. Elsewhere, they may be preserved as a faint linear swelling as at Woden Law in the Scottish Borders, or as cropmarks visible only from the air (Fig 26). But even where whole sections are now lost due to the subsequent evolution of the countryside, the ghosts of the old roads may still survive as field or property boundaries, albeit sometimes recalled only in the faded words of a charter or in the pale lines of an estate map. Significantly, no network of metalled roads on such a scale was constructed again until the military roads of the Hanoverian government in the 18th century.²²

Dere Street Case Study

Early medieval charters indicate that ‘Dere Street’ was the contemporary name given to the Roman road that passed north through the Anglo-Saxon Kingdom of Deira into southern Scotland and then on towards Strathmore. The Romans developed this route incrementally into a major element of the military infrastructure, to facilitate the movement of troops and supplies from about AD 71. Thereafter, it continued to be used as the main highway into eastern Scotland for centuries (Fig 25), but some sections were eventually abandoned as the use of the landscape evolved. Even where lost, the road’s general course can still be traced by the incidence of Roman military installations (albeit often only detectable as cropmarks) or through its influence upon later developments.

Dere Street enters Scotland above the north-facing scarp of the Cheviots in the Scottish Borders, where its metalling is intercut by hollow ways and later tracks. This is a zone of rough grazing and so the roadside quarries, the earthworks of the fortlet on Brownhart Law, Roxburghshire, together with those of four camps at Pennymuir, are all well preserved,

alongside earlier features that suggest the wayfare was already of some antiquity. A short section of the Anglo-Scottish Border runs parallel to it, while in the lowlands south of the River Tweed, where the road is characterised by long straight lengths, it frequently marks parish and property boundaries reaching back to medieval times, for example the parish boundary between Oxnam and Hownam, Roxburghshire (Fig 26). Fragmentary, open rig systems tell of intensive cultivation during the medieval period, but the road became an important droving route and so a long stretch was subsequently confined by walls in the 18th–19th centuries, as it passed initially through country characterised by large, geometric enclosures of pasture and into landscapes of smaller arable fields and plantations, most of which were laid off from its line. This evolution goes far to explain why every Roman site between the Cheviots and the crossing of the River Tweed at Newstead is known only from cropmarks, although sometimes an individual field boundary may recall the line of a rampart. Additionally, stone robbing of the fortlet at Cappuck and the fort at Newstead helped level more resistant elements. A minor road marks a short section between farmsteads, while a length south of St Boswells is coincident with the A68.

Fig 25 Dere Street in Roxburghshire, where it is still in use, cuts diagonally across the image. DP084758.





Fig 26 Dere Street, Roxburghshire, showing the quarry pits alongside the Roman road (some ploughed-out showing as a mark in the crop), now used as a farm track and bridle path. It still marks the boundary between Hownam and Oxnam parishes. SC396660.

After crossing the River Tweed, charters, antiquarian accounts and the cropmarks indicate that Dere Street passed up the west side of the Leader Water to the crossing of the Mountmill Burn at Oxton. However, few traces have been observed and the route has yet to be recovered in detail. Remnants of the camp at Channelkirk remain visible at Oxton, where the road, the wayside quarries and the trackways reappear on the rising ground to the north, as they re-enter a zone of rough grazing centred upon Dun Law. This area is characterised by large geometric enclosures that again have been laid off from its line. North of this hilly country, it passes back into an improved landscape

distinguished by smaller arable fields. The road is partly overlain by the A68 as it approaches Pathhead, where cropmarks denote a cluster of camps north and south of the Tyne Water, but beyond this its course is uncertain until the North Esk is reached. Passing west of the fort site at Elginhaugh, its line is denoted by the A7 through the suburbs of Edinburgh to the foot of Liberton Brae, where it becomes lost in the 18th–19th century street plan. The only clues thereafter are cropmarks of two camps at Gogar and a milestone from Ingliston, but it plainly made for the Flavian fort at Camelon, Falkirk, where it has been observed again, heading north beyond the Antonine Wall.²³

Early Medieval Settlement and Agriculture

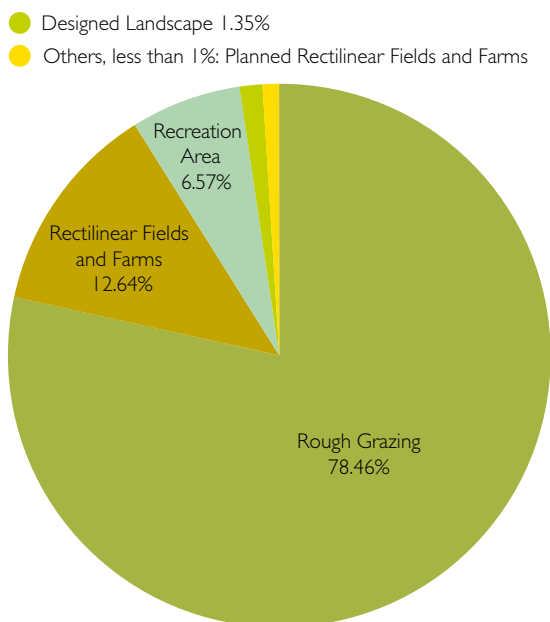
(MAP 7 & FIG 27)

Pitcarmick-buildings and Early Medieval Settlements by Piers Dixon

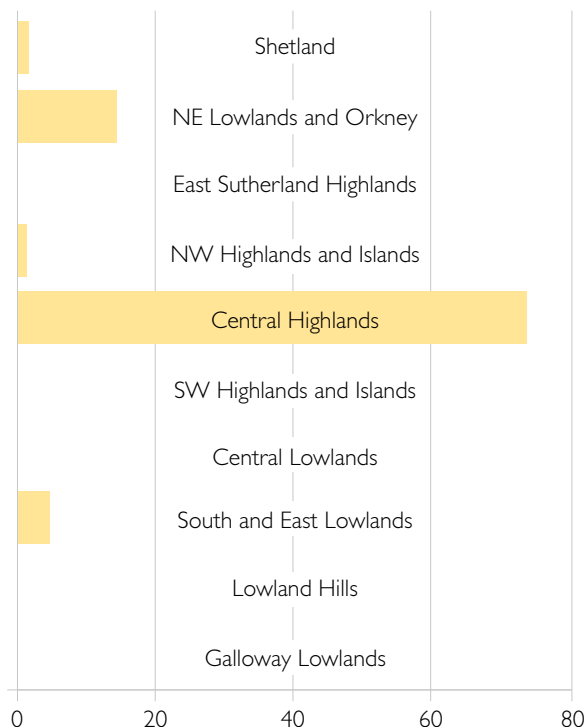
Settlements of the early medieval period in Scotland are rarely to be found due to their ephemeral nature and the small size. They also have left scant traces of their agriculture, which may be because they continued to farm in the same way as the farmers of the later prehistoric period, using small cultivation ridges called cord rig. Pictish multicellular houses in the far north were succeeded by Viking longhouses in the Northern Isles from the 9th century AD, such as Buckquoy, Orkney. However, these are only occasionally extensive enough to map in HLA, as at Brough of Birsay, Orkney.

On the mainland outside the Viking-settled areas of the north and west, the most prolific area for the preservation of settlement of the second half of the first millennium is Perthshire, where round-ended longhouses – up to c30m in length, with turf walls sub-divided into a living end and a byre end marked by a sump – are to be found in small groups amongst the later prehistoric farming landscape (Fig 28). The dramatic change in vernacular architecture appears to have occurred in the 7th century AD, perhaps due to influences from Frisia on the northern edge of Europe. Why this settlement phase in Perthshire ended by cAD 900 is not understood.²⁴ At the same time some hillforts were reoccupied, such as that at Rhynie, Aberdeenshire, which has a Pictish symbol stone just inside the entrance – a rare coincidence of settlement and symbol stone. More pronounced hillforts are more well known, like Dunsinane, Perthshire, which is associated with *Macbeth*, Dumbarton Rock in the kingdom of Strathclyde, and Burghead, Moray, and variously played a part in the development of Scotland.

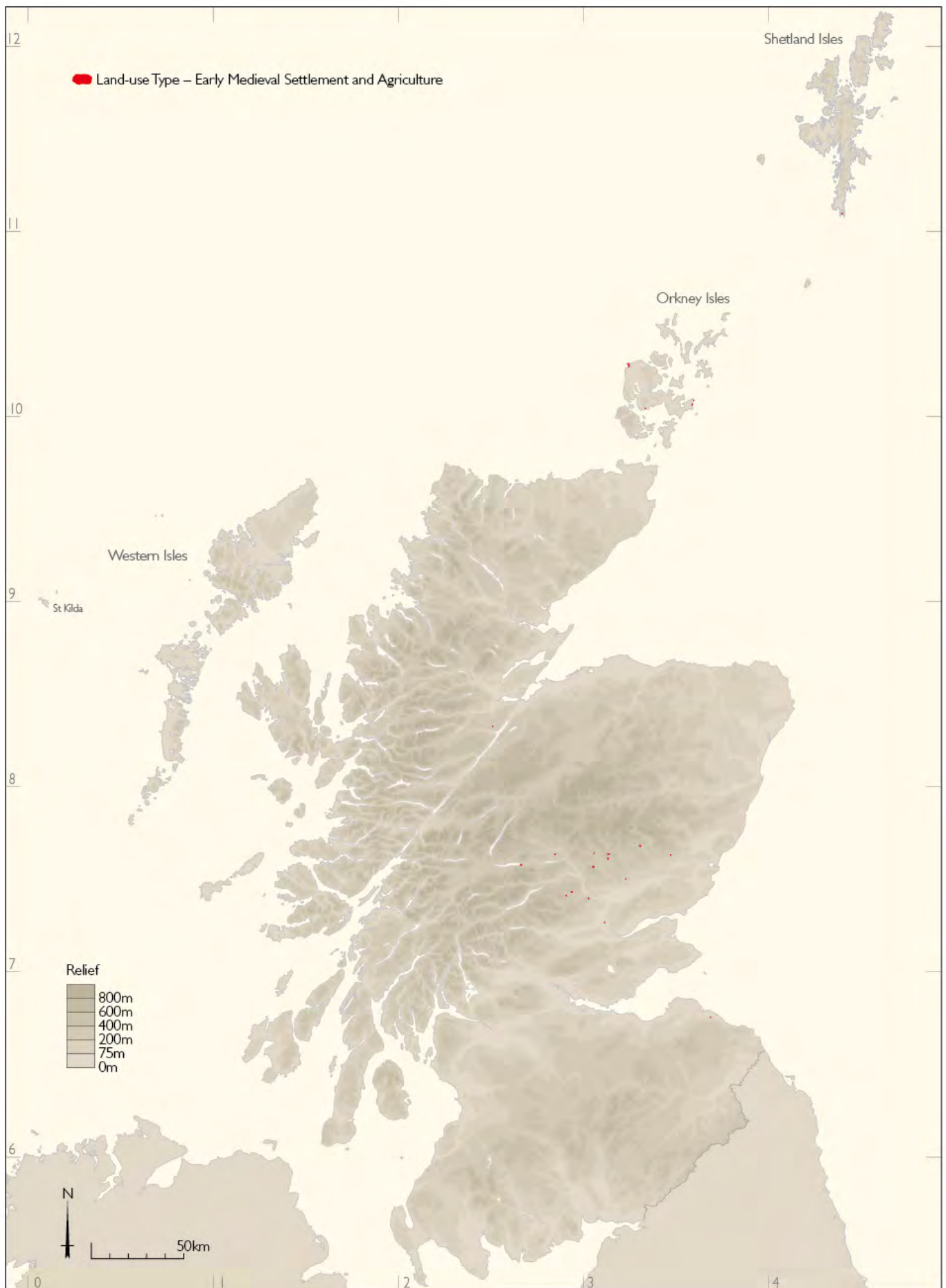
Fig 27 Land use and regional distribution. GV006903.



Current Land-use Type of land that has been interpreted as Early Medieval Settlement and Agriculture



Area (ha) – by region – of land that has been interpreted as Early Medieval Settlement and Agriculture



Map 7 Distribution of Early Medieval Settlement and Agriculture, exclusively located in the Perthshire and Angus Glens of the Central Highlands. GVO06848.



Fig 28 Three long rectangular buildings and fields of Early Medieval Settlement and Agriculture and a hut circle and cairn at Glen Cochil, Perthshire typify recurrent land use from prehistory. DPO86871.

In Anglian areas, extensive palatial settlements similar to that at Yeavering in Northumberland are known from cropmarks at Philiphaugh and Sprouston in the Scottish Borders. Outside the elite palaces, settlements in south-east Scotland were timber built,

and only show in arable fields where the floors have been cut into the ground surface, either as platforms or sunken-floored dwellings, now revealed as cropmarks in dry seasons.

Medieval Castle

(MAP 8 & FIG 30)

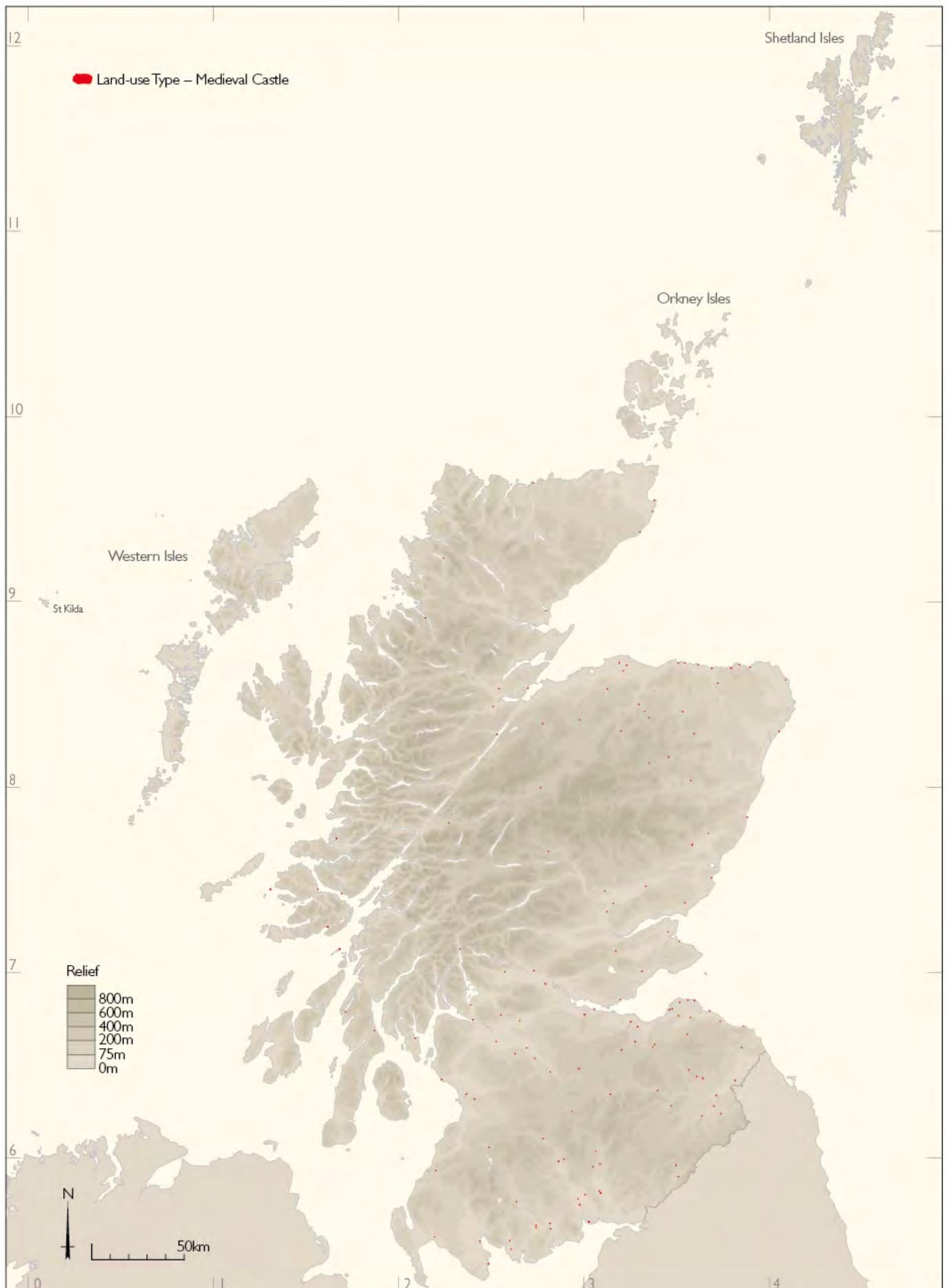
Castles and their Context by William Wyeth

From the 12th century new forms of elite structure were built – castles, increasingly interpreted as aristocratic status symbols rather than just military structures. Castles in Scotland recorded by HLA (Map 8) are often located in areas of agricultural productivity. The 13th century enclosure castles of the west-coast Highlands reflect reliance on waterways and birlinns for communication of goods, status and even ideas. Those

of the south-west (Galloway in the medieval period) probably reflect the division of land between Anglo-Norman settlers of the mid-12th century. However, the areas of Scotland settled by Norse incomers, in the far north of the country, are home to few castle sites; here power centres took a wholly different form. Where castles were manors to large farming estates, their function is more clearly administrative. Those located on hunting estates were more removed from contemporary settlement, though no less important in medieval society. Some sites not conventionally considered castles – crannogs, island dwellings, forts – appear to have late medieval occupation and enhanced status, both native and non-native.

Fig 29 The landscape of Craignethan Castle, South Lanarkshire, emphasises the martial qualities of an aristocratic residence and includes the latest in artillery defence for the early 16th century. DP144577.



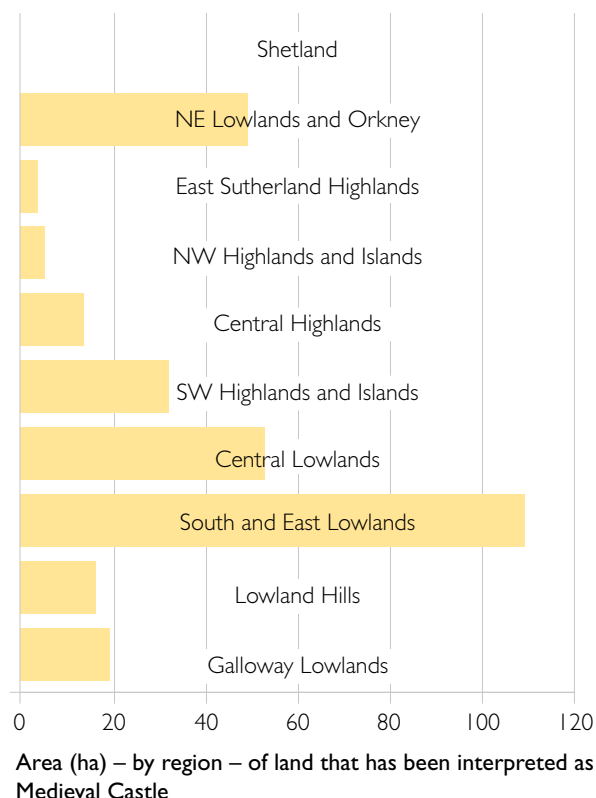
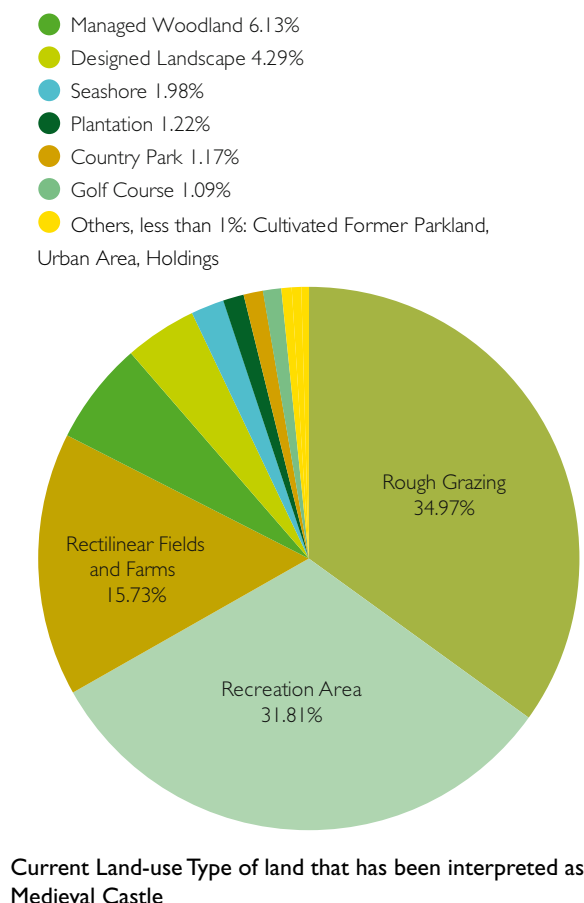


Map 8 Distribution of Medieval Castle areas, mainly focused on coastal and river valley sites. GVO06851.

Castles had legal, social, economic and ideological functions, with some yet to be recovered through research. As centres of administration, castles were crucial to justice in a local area; some in the later medieval period retained legal status, even where the castle had ceased to be occupied, with property transactions enacted at seemingly uninhabited sites (for example Bonnybridge motte, Stirlingshire). Ideologically, castles embody the lordship of their builder, emphasising martial qualities (Fig 29), social connection or aspiration (Doune Castle, Stirlingshire), exclusion or inclusion of the local area (Portencross Castle, Ayrshire), and later, learning and cultural sophistication (Crathes Castle, Aberdeenshire).

The ideology of castles is evident through designed landscapes, modified natural features and controlled access all stressing the splendour of a site. Interaction between site and landscape may be seen, with windows and balconies placed to emphasise features, whether the killing-zone of a hunting park (Hermitage Castle, Roxburghshire), the initial of the castle family name (Preston) spelt out in a P-shaped pond (Craigmillar Castle, Midlothian), or extramural chapels and mills.

Fig 30 Land use and regional distribution. GVO06906.



The relation to earlier power centres is more complex. Continuity of occupation at some of the most noted (Edinburgh, Stirling, Dumbarton) in addition to several investigated sites (Cruggleton and Dundonald in the south-west and Urquhart and Freswick in Highland) suggest their continuing value as centres of power despite changing political and ideological priorities and contexts.

Understanding the changing form of castles traditionally took a thematic approach. The concept of native versus Norman aristocrats suggested that early medieval power centres were superseded by forms of castles akin to those of England, Wales and Ireland.

Technological sophistication suggested that timber and earth were superseded, by virtue of inferiority in resilience to fire and their poor heat preservation, by stone and mortar. Parts of Scotland, such as the south-west, did indeed see a European form of castle appear where much earlier centres were abandoned (Mote of Mark), integrated (Mote of Urr) or moved (Old and [New] Caerlaverock), but the processes were more complex than merely 'upgrade'. Timber was perennial in castles, though its decline in importance reflected both changing tastes and availability. Within distinct cultural or political areas, design varied (Finlaggan, Dunollie and Dunstaffnage, in Argyll, for example) in a wider Scottish picture. Towers were superseded by enclosed courtyards, before returning later as the form of choice.²⁵

Medieval Assart

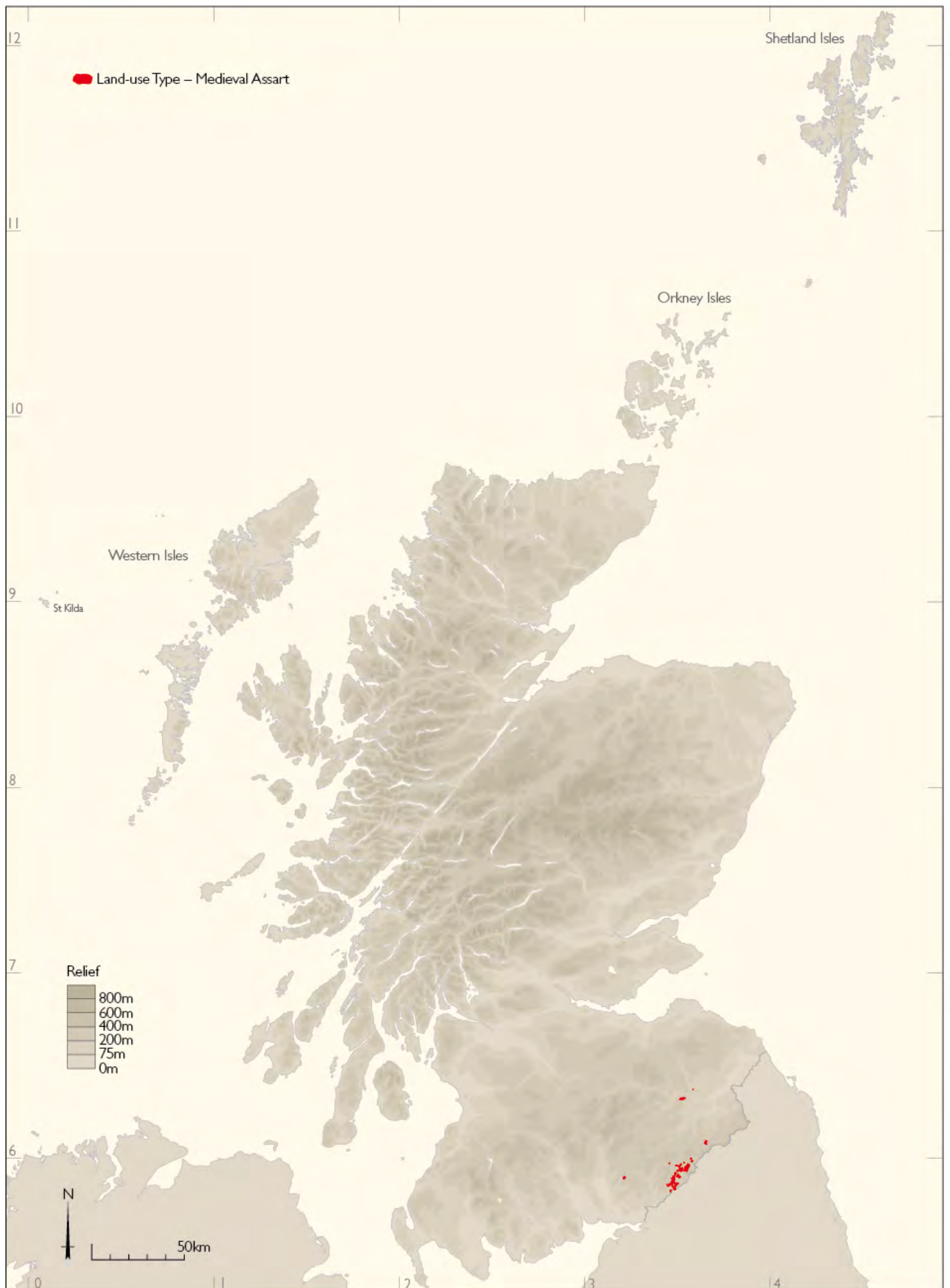
(MAP 9 & FIG 31)

Assarts and Hunting Forests by Sine Hood

In medieval Scotland the creation of vast hunting forests was one example of the increasing stability felt by the Crown in this period. The exclusive hunting rights of these forests were retained either by the Crown itself or were extended to select nobles on whose lands they lay. However, the delimiting of these areas did not exclude the agricultural exploitation of the lands within their bounds; instead it introduced the conferring of rights to carry out any such activity through the specific grant of assart. In this way the forest lands could be closely managed, allowing for a balance between the maintenance of a suitable environment for the animals that inhabited the lands and the needs of the local populations.

The creation of an assart involved converting forest areas to arable by uprooting trees or any other vegetation, resulting in permanent deforestation. In addition to laying out new arable land and building a new steading, a grant of assart might also allow for such activities as developing areas of pasture, cutting peat and turf, or gathering wood. Equally, they might detail what rights were not included. Thus the specific terms of a grant of assart meant that any activity that was carried out could be outlined to suit the individual area in each case.

Since these grants led to newly cleared ground in areas that were established as habitats for deer and boar, they required deer dykes to keep the animals from straying into crops. In upland areas these boundaries, formed by a dyke and an external ditch, may still be seen, particularly in the Southern Uplands.



Map 9 Distribution of Medieval Assart locations. Note the south Scotland focus. GV006849.

The monasteries that were founded and flourished throughout this period were among the recipients of the rights of assart. Dryburgh and Melrose Abbeys received grants of assart in the royal forest between the Gala and Leader Waters and Paisley Abbey in the Stewarts' baronial forest in Renfrewshire. The rights of assart brought much-needed new agricultural ground into production at a time when the population was increasing and the economy was beginning to change from one predominantly of subsistence. The main period of assarting, based upon the documents, is dated to the 12th and 13th centuries, but from the later medieval period landlords devised other strategies for deer management in the Lowlands with the construction of deer parks and hunting reserves within the forest,

as in upper Strath Avon in Moray. The reduction in documented assarts may also be due to the lack of extensive woodland to clear.

The best examples of assarting landscapes are in the south of Scotland, in the former baronial hunting forests of Liddesdale (Fig 32) and Annandale on the one hand, and royal forests like Jedburgh, Southdean and parts of Ettrick on the other. Here, successive intakes rise uphill in curvilinear form running from one burn to the next, often enclosing hundreds of hectares, with the ditch on the uphill side. Their size, standing up to about 1m in height, suggests the banks must have included either a paling or hedge to make a sufficient barrier to deer to prevent ingress.²⁶

Fig 31 Land use and regional distribution. GV006904.

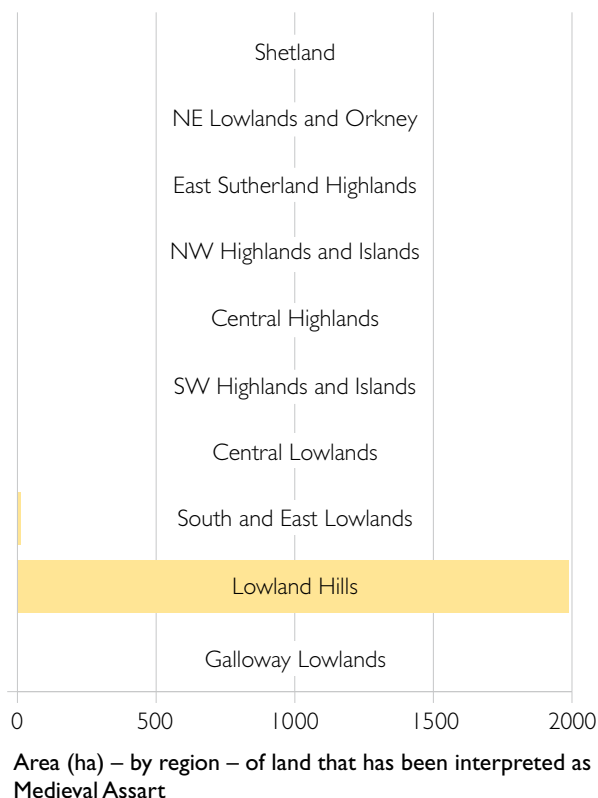
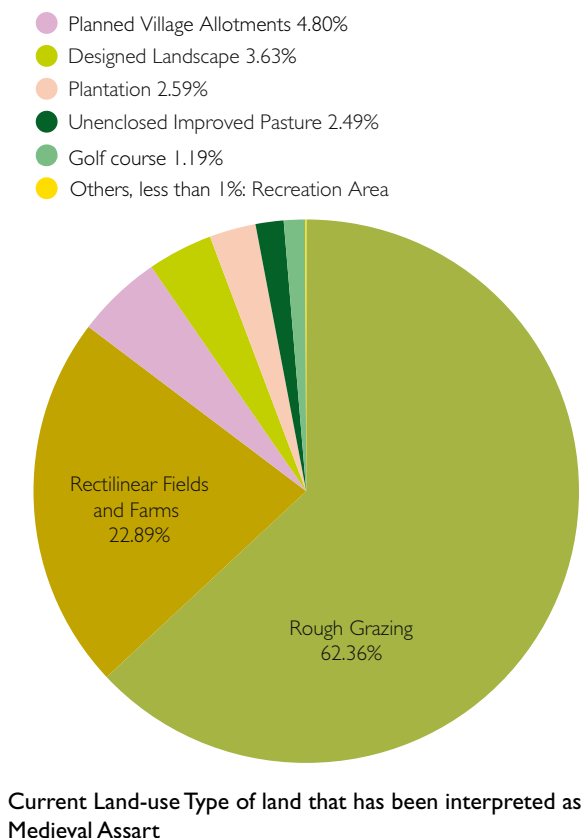




Fig 32 The curve of an assart boundary runs in an arc from the deep-cut burn (right) and around the top of some reverse-S-shaped field boundaries in the middle of the image, Ettleton Sike, Roxburghshire. SC423309.

Medieval Deer Park and Trap

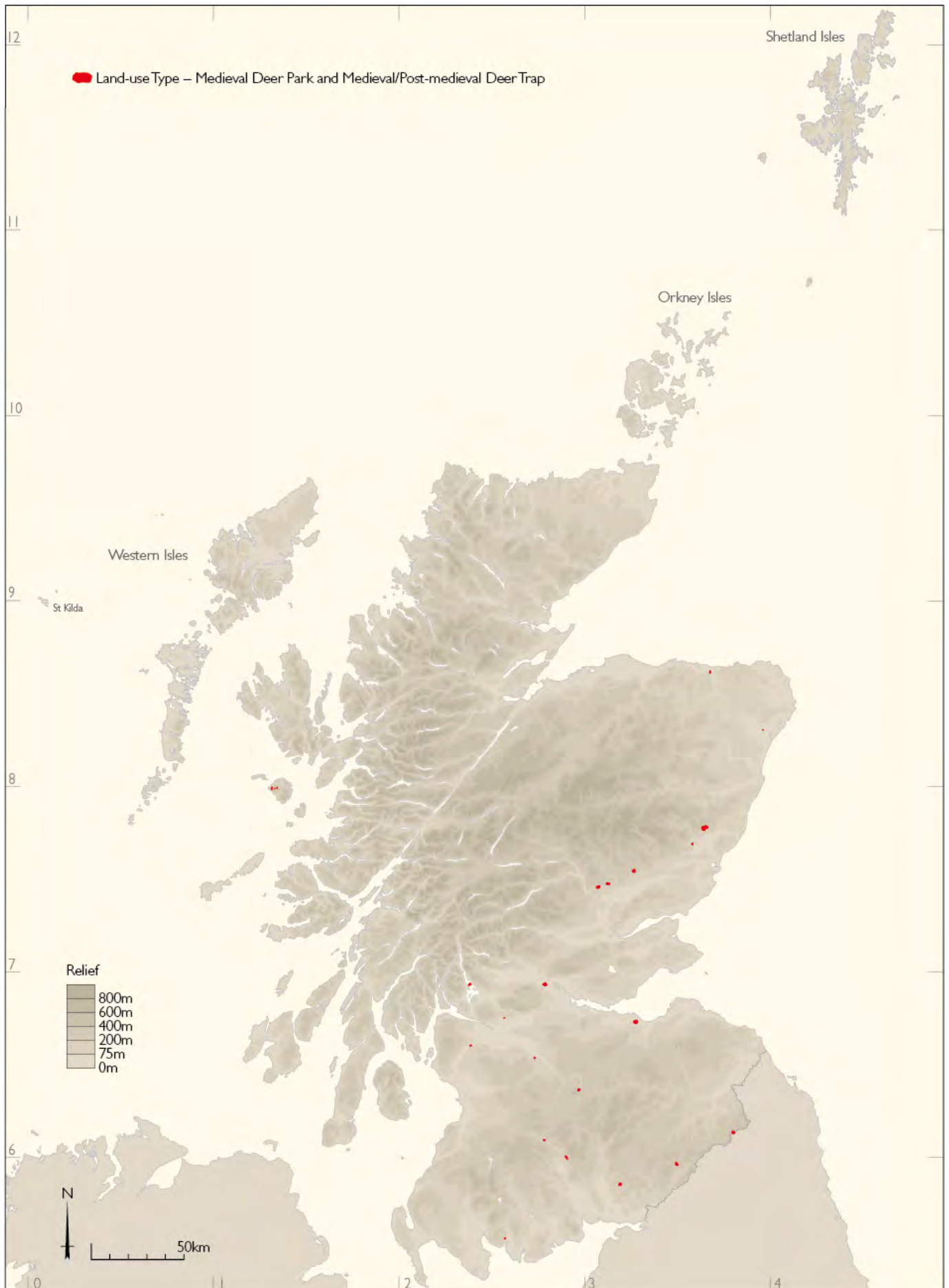
(MAP 10 & FIG 34)

Medieval parks performed multiple social and economic functions and may be seen as the forerunners of the designed landscapes of modern times. Usually situated at or near to a castle, a number of parks have been mapped, including those at Holyrood, Edinburgh (Fig 33), Kincardine, Angus,

Buzzart Dikes, Perthshire, and Hermitage (Chapter Four, Fig 20) in the Scottish Borders. Holyrood is a late medieval creation by James V from the lands of Holyrood Abbey and, like the King's Park, Stirling (see below) continued to be used into the 17th century. Only a handful of deer traps have been located, all of them in upland locations such as Peelinick, Scottish Borders (Chapter Three, Fig 29). Unlike parks, they are open on one side to allow deer to be driven in to a killing ground.



Fig 33 Holyrood Park was created for James V in 1541 and still survives as a public park. Its wall is clearly visible on the right, marked by a line of trees. SC431765.



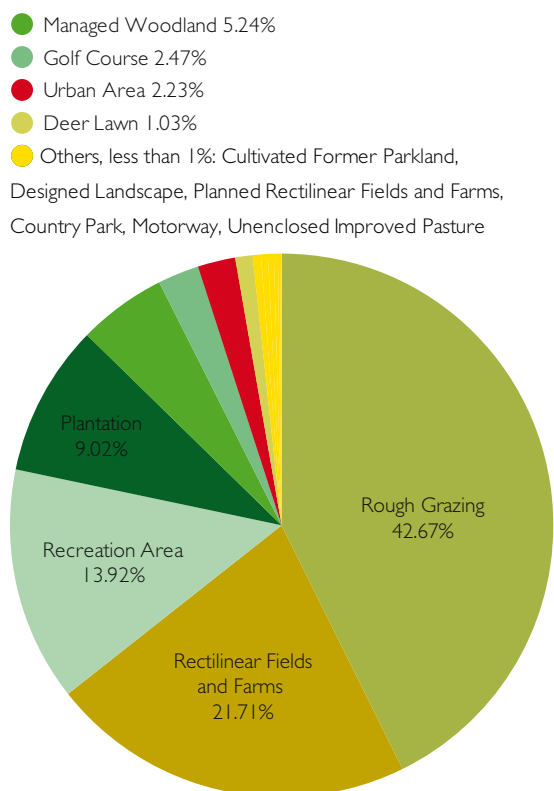
Map 10 Distribution map of Medieval Deer Park and Trap locations. GVO06850.

The King's Park, Stirling by Stephen Digney

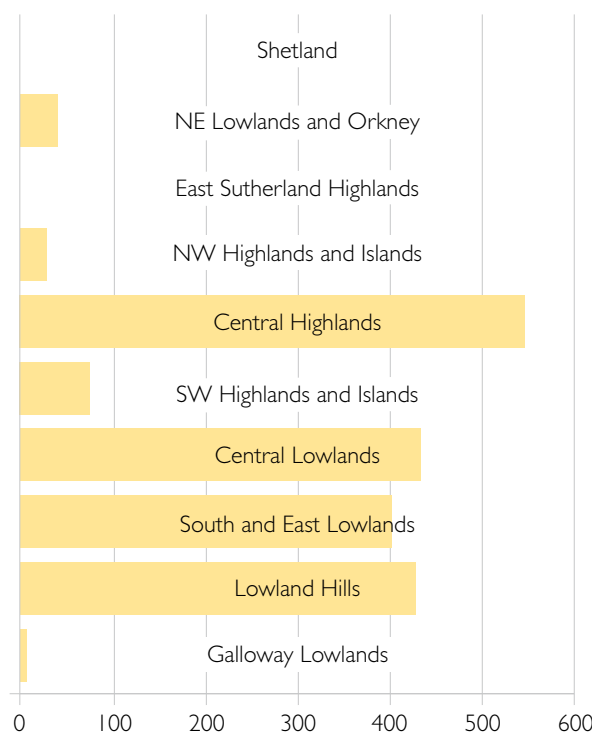
Founded by William I between c1165 and 1175, the King's Park, Stirling, is the oldest royal park in Scotland. The park is defined to the north-west and south-west by a stone dyke (Fig 35). The dyke terminates at King's Park Road to the east where it is replaced by 19th century railings. The road (the old Cambusbarron road) runs to the site of the former Burgh Gate, marking the park limits next to the burgh prior to the 14th century. From the Burgh Gate to the north end of the castle, the high ground of the Stirling Sill completed the park. The current division (along Victoria Place and Royal Gardens) between recreation and 19th century urban areas reflects the shape of the park in 1506, following an exchange of land with the Burgh of parkland for Gowanhill and earlier 14th century alienations. Overall c164ha (400 acres) may have been enclosed, reducing to c133ha (330 acres) by 1506.

The castle dominates the park, emphasising royal authority, and providing a vista over proceedings within. These included deer hunting, hawking, archery, and tournaments with associated pageantry. The park was also cultivated, used for hay production, pasturage, and the stocking of deer, cattle and sheep. It functioned alongside Alexander III's larger 'New Park' of c1264, a short distance to the south, but which no longer survives. Both sat within a wider landscape of royal forest and hunting reserves which stretched between the rivers Forth and Carron. The New Park was lost through grants in the 14th and 15th centuries. However, the Old Park was renewed by James IV. His reorganisation in the 1490s and early 1500s saw the creation of a great garden, orchards, fish ponds, a new park dyke, the relocation of the tournament yard, and improvements around the artificial park loch.

Fig 34 Land use and regional distribution. GV006905.



Current Land-use Type of land that has been interpreted as Medieval Deer Park and Medieval/Post-medieval Deer Trap



Area (ha) – by region – of land that has been interpreted as Medieval Deer Park and Medieval/Post-medieval Deer Trap



Fig 35 The King's Park, Stirling. The park wall, probably built for James IV, shows clearly, running diagonally across the foreground of the picture. DP175971.

A major investment in the great garden in the 1620s appears to have funded the construction of the King's Knot. These geometric earthworks, the foundations of a monumental garden, were in place for the Scottish coronation of Charles I and his visit to Stirling in 1633. Royal interest in the park declined after the death of Charles II and it became primarily an economic asset. The Park Loch was drained in the 18th century and the park was leased to tenant farmers. Widespread ploughing at this time has removed almost all traces of pre-improvement activity, sparing only one patch of rig and the garden earthworks. Early OS maps also show the exploitation of several small quarries.

The 18th century brought developments related to public sport and recreation. Antiquarian visits to the King's Knot led to its restoration in 1867 and current protection. The Back Walk, originating in the 1720s,

was later extended to Gowanhill and became wooded in the 20th century. From 1805 to 1854 horse racing was a feature of the park, and the track, depicted on early OS maps, still largely survives. Traces of an earlier track, partly visible on the ground, are clearly revealed by airborne laser scanning (lidar). This may be the old race course referred to in 1850 and could be related to races held in the 1760s and 1770s. With the advent of racing, the high park to the south-west of the King's Knot was turned to pasture, which attracted golfers, and in 1869 the Stirling Golf Club was formed. In 1904 a lease was obtained from the Crown which allowed the expansion of the course to 18 holes. A thin belt of trees divides the golf course from the public sports fields to the south-east. Since the late 19th century this public space has been central to Stirling life, not only for recreation, but also for major gatherings of various kinds (social, political and cultural).

Between the 17th and 20th centuries the castle garrison frequently used the park for military exercises. A Second World War camp at the Haining beside the King's Knot provides the only visible trace of this military activity. The Dumbarton road, c1810, was the first modern road to cut across the park, but it has also since been truncated to the west by the M9. In 2013, after almost 850 years as a royal park, Crown ownership was transferred to Scottish Ministers, with local control and management ensured through a ground lease to Stirling Council.²⁷

Medieval/Post-medieval Shielings

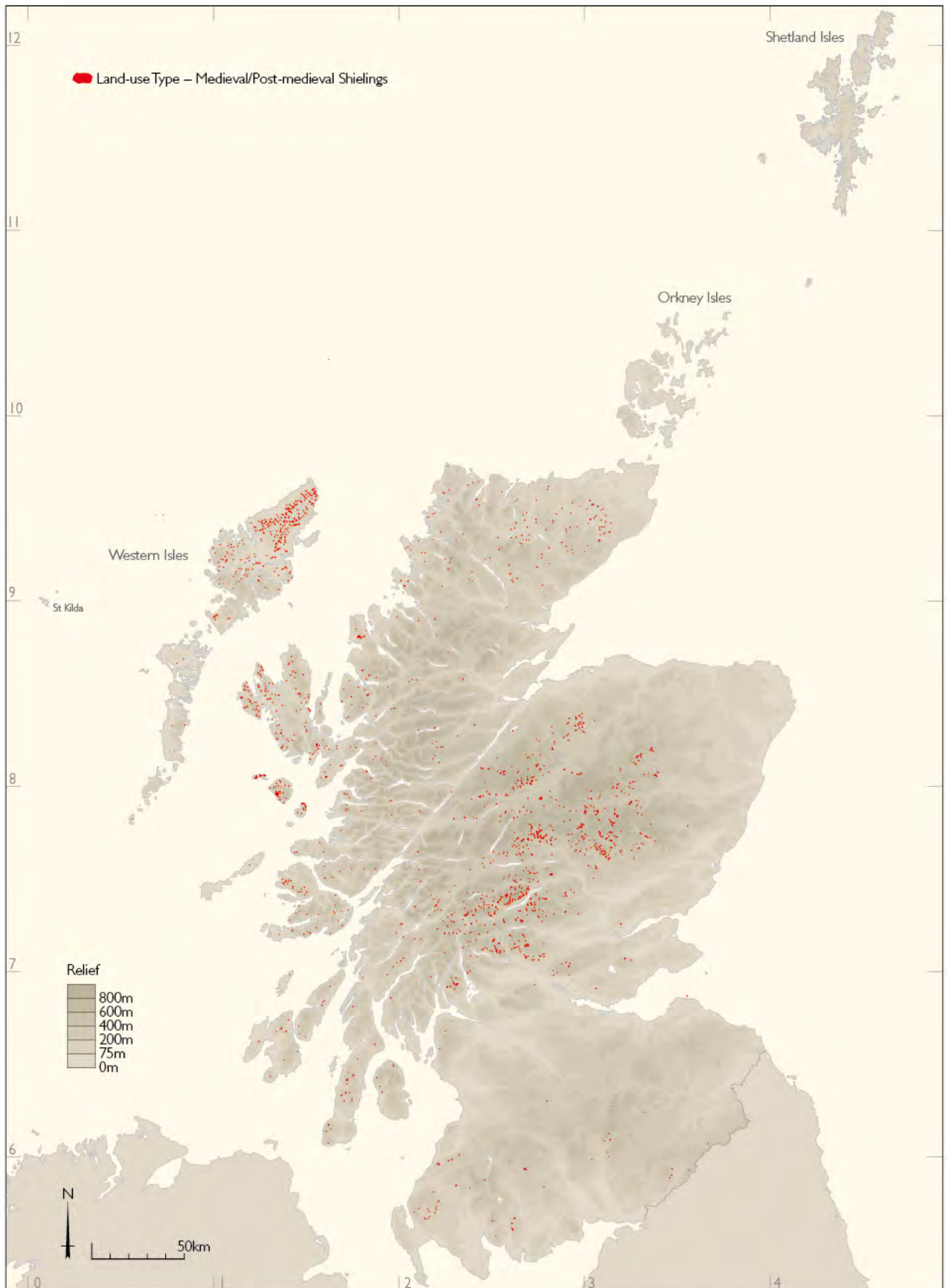
(MAP 11 & FIG 36)

Transhumance Settlements by Sine Hood

Shieling-hut groups are to be found across the whole of Scotland, with the exception of Orkney and Shetland. The majority lie in the Highlands and Islands with notable concentrations on the Grampian and Cairngorm Mountains, and also on Lewis. Included in these are many examples of shieling-hut groups situated alongside later small fields or patches of rig, suggesting that more permanent settlements resulted from the use of ground for summer pastures.

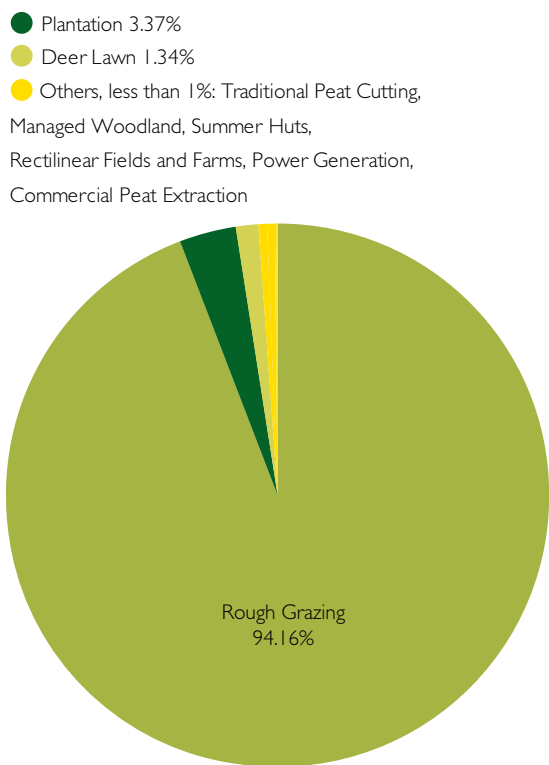
The practice of moving livestock was widely carried out in the medieval and post-medieval periods in Scotland. The rights to make use of these common hill pastures was often specifically included in land grants, although they might alternatively be deliberately ruled out in order to avoid establishing new and permanent settlements. Within what was the largely subsistence farming system, summer pasturing was vital to make the best use of the often limited land resources. There are more than 6000 shieling-related examples in the Canmore database,²⁸ with over 1700 recorded by HLA as having five or more huts.

During the main part of the year, livestock was principally grazed on outfield ground, the relatively less productive farmland that was not regularly cropped. Removing livestock to summer pastures allowed this grazing land to recover, or to be prepared if it was going to be given over to cultivation. Once the year's crops were established, the animals were driven to the hill pastures and tended there for several weeks until the demands of the harvest made it necessary for everyone to return. This stay necessitated the construction of shelters, called shieling huts.



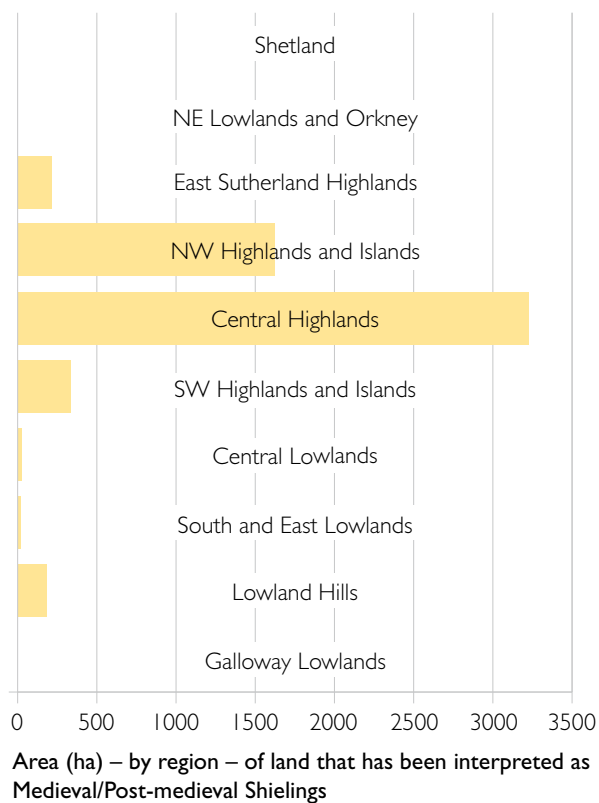
Map 11 Distribution of Medieval/Post-medieval Shielings, with an upland zone distribution. GVO06853.

Fig 36 Land use and regional occurrence. GV006908.



Current Land-use Type of land that has been interpreted as Medieval/Post-medieval Shielings

The shieling grounds varied in their distance from the permanent settlements but were invariably sited near a water source where better grazing also tended to be found. The short periods spent on the shieling grounds meant that the shelters need only be relatively rudimentary hut structures, commonly in need of a degree of repair or rebuilding each year. Sometimes the initial courses of the huts might be of stone, with the remainder of the walls and the roofs being constructed of turf, but often the entire structure was of turf. Those who went with the livestock, often the women and children, would not only tend the animals but would also be involved in making butter and cheese, and gathering manure for use on the fields back at the farm.



Area (ha) – by region – of land that has been interpreted as Medieval/Post-medieval Shielings

The letting of pasture to cattle drovers and introduction of large-scale sheep farming during the agricultural Improvements brought a transformation to how the hill pastures were regarded and used. The financial returns from sheep farming were so lucrative that access to grazing became curtailed, and when the agricultural ground itself was also regarded as better used for sheep, farming practices were changed irrevocably, and the people encouraged or forced to move away.

Despite the short time spent there each year and the centuries since their regular use, shieling grounds can be surprisingly identifiable in today's landscape. The grazing itself kept the grass somewhat clear of coarser vegetation and the manure from the animals added a degree of nutrition to the ground not otherwise present.

Thus today patches of green ground can provide a striking contrast in the expanse of their moorland setting (Fig 37). Furthermore, the repeated rebuilding of the huts has led in some instances to relatively substantial remains of grass-covered footings becoming mounds visible on the ground and through aerial photography.²⁹



Fig 37 This shieling hut at Coire Mhoraigean, Highland stands out from the heather due to the lush green grass on the mound. DP073855.

Medieval/Post-medieval Settlement and Agriculture

(MAP 12 & FIG 38)

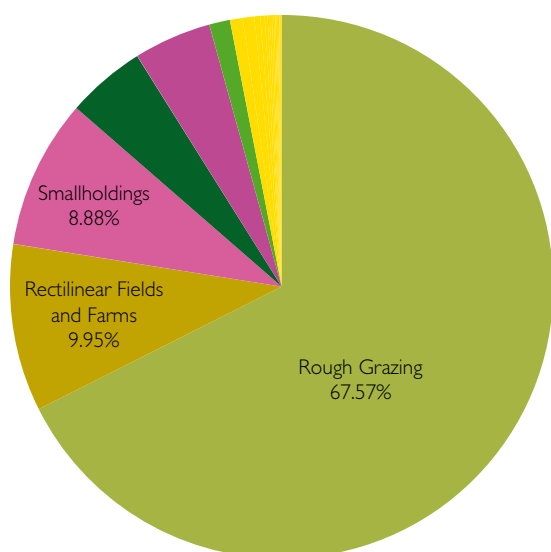
Regional Variety in Rural Settlement by Billy Macrae

It is perhaps not surprising that Medieval/Post-medieval Settlement and Agriculture is one of the most widely distributed Relict Land-use Types, being the physical remains of the rural farming communities

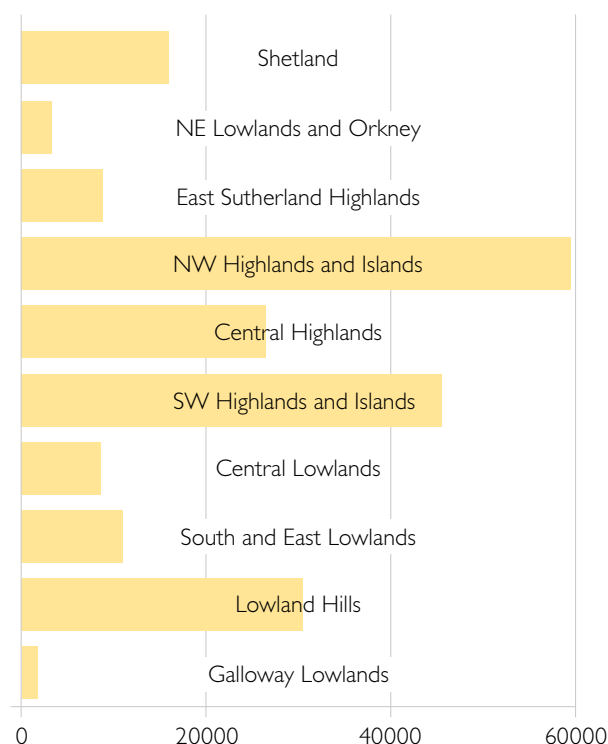
which were once common throughout Scotland. Changes in agricultural practice were enabled by land-tenure reform acts at the end of the 17th century and through improvements in technology and practice which were disseminated by institutions such as the Society of Improvers in the Knowledge of Agriculture in Scotland, founded in 1723. Throughout the 18th and 19th centuries these improvements gradually replaced the medieval systems of agriculture, and the best surviving examples of pre-improvement agriculture are to be found on land considered economically marginal for the purposes of modern farming practice.

Fig 38 Land use and regional distribution. GV006909.

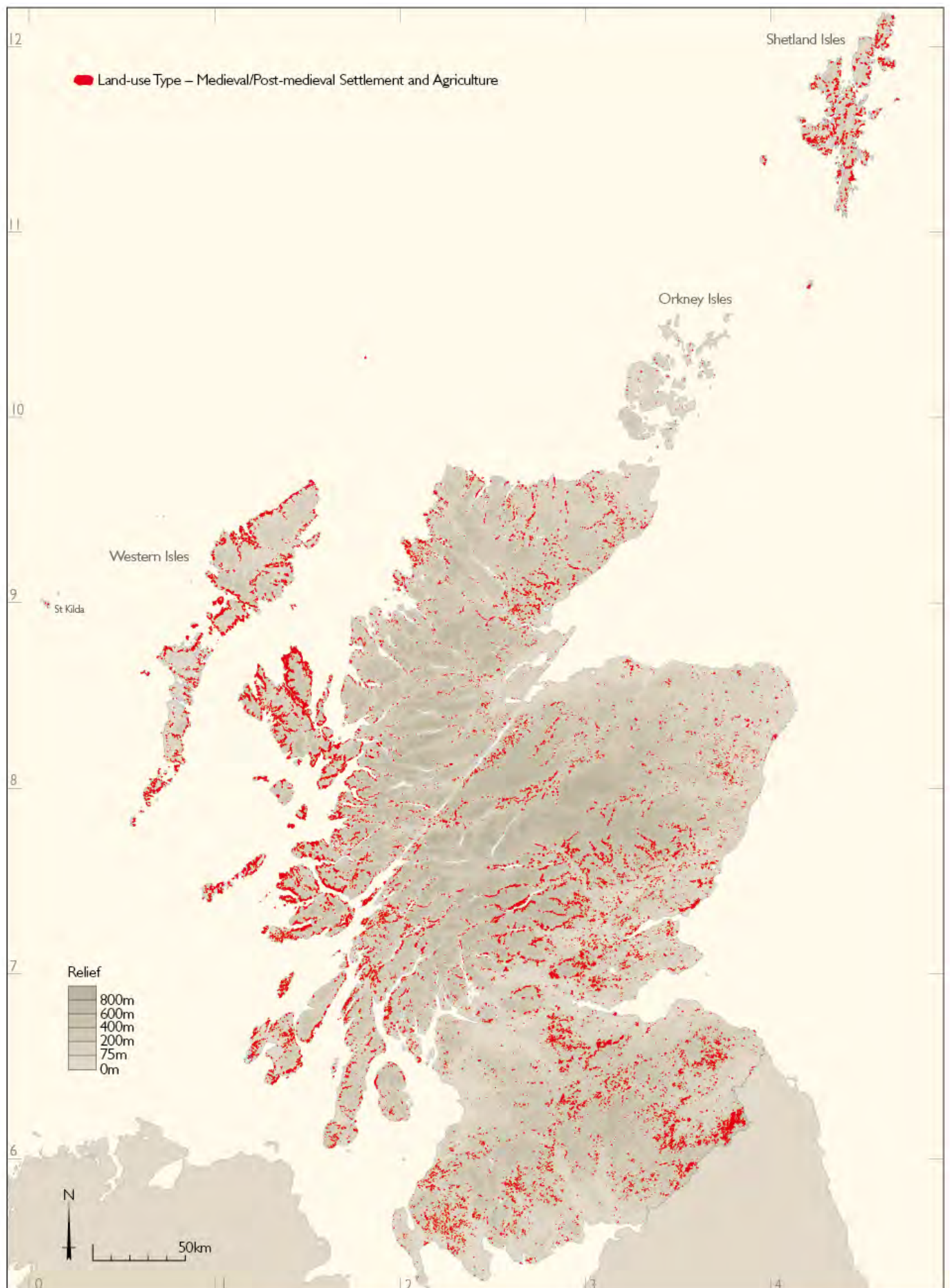
- Plantation 4.69%
- Crofting Township 4.62%
- Managed Woodland 1.24%
- Others, less than 1%: Unenclosed Improved Pasture, Recent Crofting Township, Designed Landscape, Golf Course, Holdings, Military Site, Urban Area, Recreation Area, Planned Rectilinear Fields and Farms, Deer Lawn, Traditional Peat Cutting, Cultivated Former Parkland, Power Generation, Planned Smallholdings, Sub-rectangular Fields and Farms, Country Park, Crofters Allotted Cultivation Plots, Medieval/Post-medieval Curvilinear-shaped Fields, Industrial or Commercial Area, Airfield, Industrial Planned Village, Reservoir, Commercial Peat Extraction, Cemetery, Motorway, Summer Huts, Planned Village Allotments, Medieval Village, Seashore, Industrial-scale Farming Unit, Quarry



Current Land-use Type of land that has been interpreted as Medieval/Post-medieval Settlement and Agriculture



Area (ha) – by region – of land that has been interpreted as Medieval/Post-medieval Settlement and Agriculture



Map 12 Distribution map of Medieval/Post-medieval Settlement and Agriculture, found along the upland fringe. GV006854.



Fig 39 The township of Learable, Strath of Kildonan, Sutherland was cleared in 1813. DP080124.

Settlements tended to be small clusters of buildings and enclosures or dispersed townships, and their associated field systems were typically infields bounded by curvilinear head dykes that were used for arable production, with grazing areas beyond. For example, the depopulated township of Learable, Sutherland, displays the relationship between farm buildings with small kale yards attached and the grass-covered infields of ridge and furrow surrounding them, all encompassed by a head dyke, with the heather moorland of the common grazing beyond (Fig 39).

Some regional variation can be seen, however, implying a range of practices with localised adaptations. The form of the remains is dependent on the technology and techniques employed to create them; cultivation by spade, foot plough or teams of oxen have different characteristics identifiable in the shape and profile of the ridge and furrows produced. Ridge and furrow is formed through the repeated ploughing of an area, where the demands of controlling and turning a team of oxen leads to the characteristic swirl or reverse-S pattern (Figs 6 & 20). On sloping terrain this may also lead to the formation of artificial terraces or lynchets.

Successive land-use strategies on the slopes of Chatto Craig in Roxburghshire, for example, have resulted in a pattern of differential archaeological survival that is frequently found in upland edge areas. The topographic zoning of the remains starts with the hillfort and probably contemporary field system at the summit. Just below, on the upper slopes, the serpentine pattern of ridge and furrow shows how medieval agriculture was active in areas currently deemed unproductive, delimited on the south by an earthen head dyke. Cultivation within the modern rectilinear fields on the lower slopes has removed much of the upstanding archaeological remains, but the field beside the farm of Upper Chatto preserves both the platforms of the deserted village and ridge

and furrow furlongs running down to the burn below, where a moated manor is also still visible on the opposite side (Fig 40).

Lazy beds are a spade-dug form of cultivation that are particularly common in the north-west of Scotland. Spade-dug ridges make it possible to utilise small patches of land with thin soils otherwise unsuitable for plough cultivation. Topsoil is piled up in ridges and fertilised with manure or seaweed. The furrows between provide access and drainage, as at Manish, Harris, where lazy beds were used by the crofting economy well into the 20th century.³⁰ They were also employed in Galloway, as well as plough rigs (Fig 41).

Fig 40 The remains of the deserted village occupy the field below Upper Chatto Farm, Scottish Borders with sinuous rig in the field running down to the burn and in the rough ground above on the top right of the image. The moated site is on the left bank of the burn. DP084901.



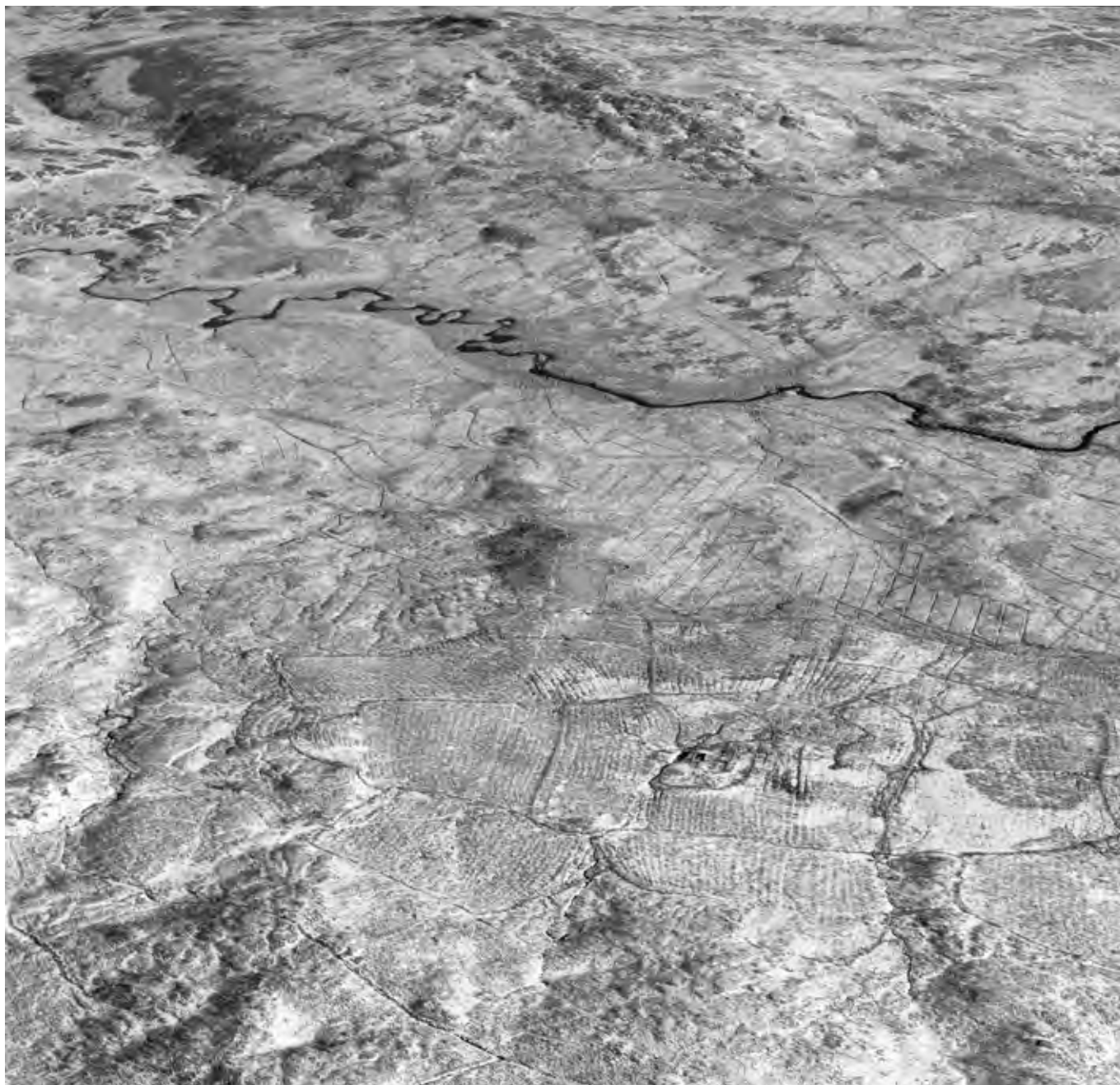


Fig 41 The field system at Laughengie appears to be entirely made up of lazy-bed rigs enclosed within field dykes of curvilinear plan that typifies settlement in Galloway. At the centre is a farmstead comprising two parallel ranges of buildings. SC701474.

The contrasting landscape features around Eoropie in Lewis depict the transition from pre-improvement to post-improvement farming practice. The sinuous fingerprint of lazy beds stretches along the coast, while the straight lines of the crofting townships

lie further inland. Where the parallel boundaries of the crofting strips overlie the snaking pattern of the earlier lazy beds, the eroding effects of ploughing can be seen in the rounded profile of the relict beds (Fig 42).³¹



Fig 42 Lazy beds at Eoropie, Isle of Lewis. The fences of the crofters' strips and the smoothing effect of modern ploughing on the beds may be seen on the right. DP109585.

Medieval/Post-medieval Braided Trackway

(MAP 13 & FIG 43)

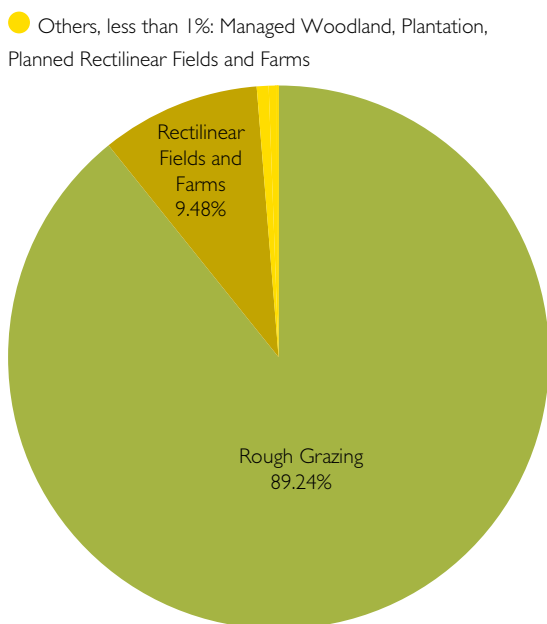
Hollow Ways and Droving by Richard Craig

Maintained roads were rare in medieval times, which meant that travelling and transporting goods was difficult. People would walk through the countryside across hills and dales to their destination. Paths in the moorland would be formed by people and animals wearing away the vegetation and ground with their feet. Paths would soon deteriorate through use, rain and erosion, and the traffic would then move on to the adjacent ground and create a new route. This process would continue over and over again, leaving a scar of interconnecting paths on the landscape, the remains of which reflect ancient routeways.

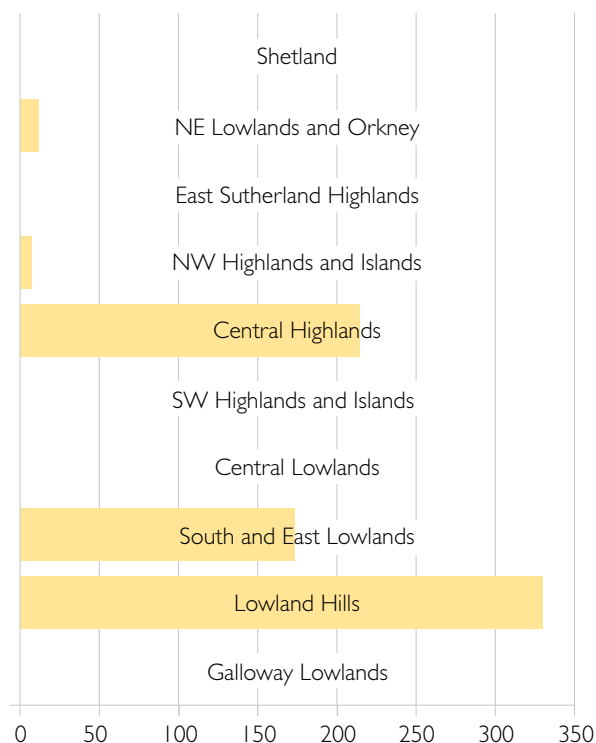
Remains of these braided trackways are mostly found on rough hilly ground in Perthshire (Fig 44) and Angus, with a small spread of sites down the east coast towards England. Sometimes remnants of the tracks are retained within enclosed rectilinear fields or in clearings of tree plantations. Occasionally tracks are depicted on OS maps, but the full extent of a site is best ascertained from field visits or aerial photographs. The routeways are similar in appearance to riverbeds and the two can easily be confused. The braided trackways on the east slope of Meall Odhar, Perthshire criss-cross over old riverbeds leaving a maze of embankments and hollows on the hillside.

The rough nature of these routeways meant that there was little point in using a cart as it would break. Goods would have to be transported on ponies with baskets slung over their backs. It was not unusual for ponies to be formed into a long train by attaching yokes and ropes to them which increased the amount of commodities carried.

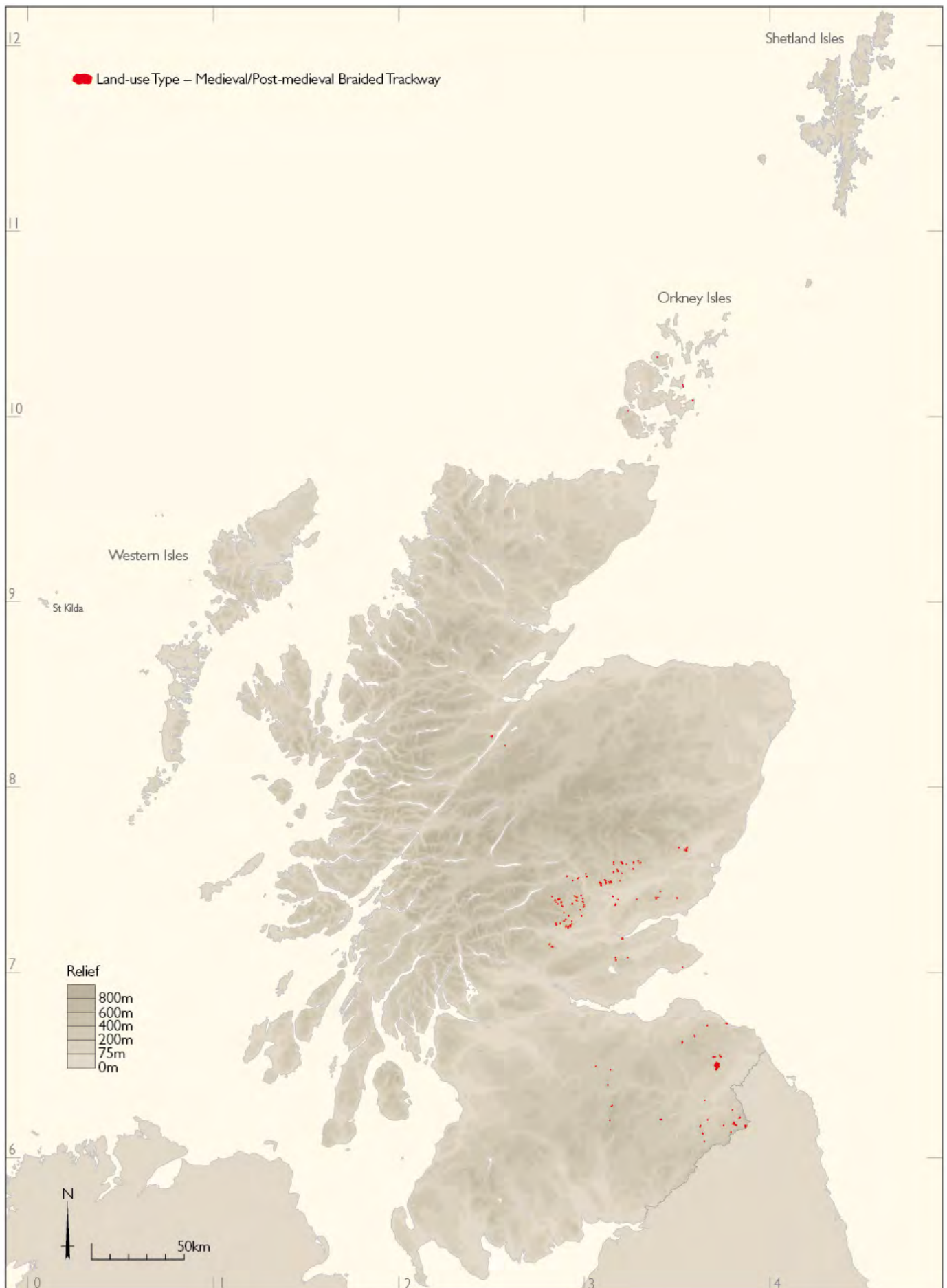
Fig 43 Land use and regional distribution. GV006910.



Current Land-use Type of land that has been interpreted as Medieval/Post-medieval Braided Trackway



Area (ha) – by region – of land that has been interpreted as Medieval/Post-medieval Braided Trackway



Map 13 Distribution map of Medieval/Post-medieval Braided Trackway, mainly visible along the upland edge of the Lowland Hills and south-east Highlands. GV006855.



Fig 44 Braided Trackways, Waughenway Knowe, Perth and Kinross. DP056550.

Often a farmer or crofter would rely on income from selling their cattle in the autumn to tide them over the winter. The lack of roads meant that cattle would have to walk to market. Men called drovers were employed to lead the cattle across the countryside to the fair; a skilled job as the beasts would need to be fed, watered and tended on the way. Herds of animals trampling across moorland created extensive routeways, called droveways.

New roads began to be built during the 18th century but often they were of poor quality and would damage the hoofs of horses and cattle. Horses had to be shod but this was an added expense which meant that the stronger horse became the popular animal for pulling carts and ploughs. Cattle were still reared and walked along the drove roads to markets, but with improved communications – turnpike roads and railways – and the founding of cattle auctions in the mid- to late 19th century this practice gradually ceased.³²

ENDNOTES

- 1 Jordan, J. T. et al., 2010, 'Holocene relative sea-level changes in Harris, Outer Hebrides, Scotland', *UK Journal of Quaternary Science* 25.2, pp. 115-134; Sturt, F., 2015, 'From Sea to Land and Back Again: Understanding the Shifting Character of Europe's Landscapes and Seascapes over the Last Million Years', in Anderson-Whymark, H., Garrow, D. and Sturt, F. (eds), *Continental Connections: Exploring Cross-Channel Relationships from the Mesolithic to the Iron Age*. Oxbow: Oxford; Smout, T. C. and Stewart, M., 2012, *The Firth of Forth: An Environmental History*. Birlinn: Edinburgh.
- 2 Tipping, R., 2010, 'Climate Changes in Scotland from the Last Glacial Maximum c. 16000 yrs BP to c. 6000 BP', in Palaeolithic and Mesolithic Panel (ed.), *Scottish Archaeological Research Framework: Palaeolithic and Mesolithic panel - Environment*. Society of Antiquaries of Scotland: Edinburgh.
- 3 Smout, T. C. (ed), 1997, *Scottish Woodland History*, Part 1. Scottish Cultural Press: Edinburgh.
- 4 Dawson, A., 2009, *So Foul and Fair a Day: A History of Scotland's Weather and Climate*. Birlinn: Edinburgh; Tipping, R., 2010, *Bowmont: An Environmental History of the Bowmont Valley and the Northern Cheviot Hills, 10,000 BC-AD 2000*. Society of Antiquaries Monograph: Edinburgh.
- 5 Whittle, A. W. R., 2009, 'The Neolithic Period, c. 4000-2400 cal BC: a changing world', in Hunter, J. and Ralston, I. (eds), *The Archaeology of Britain: An Introduction from Earliest Times to the Twenty-First Century*, 2nd ed. Routledge: London, pp. 78-102.
- 6 RCAHMS, 1990, *North-east Perth: An Archaeological Landscape*. HMSO: Edinburgh; RCAHMS, 1994, *South-east Perth: An Archaeological Landscape*. HMSO: Edinburgh; RCAHMS, 1997, *Eastern Dumfriesshire: An Archaeological Landscape*. HMSO: Edinburgh; RCAHMS, 2007, *In the Shadow of Bennachie: A Field Archaeology of Donside*, Society of Antiquaries Monograph: Edinburgh; Brophy, K. and Cowley, D., 2005, *From the Air: Understanding Aerial Archaeology*. The History Press Stroud.
- 7 Breeze, D., 2006, *Roman Scotland: Frontier Country*. 2nd ed. Batsford: London; Keppie, L., 2004, *The Legacy of Rome: Scotland's Roman Remains*. John Donald: Edinburgh.
- 8 RCAHMS, 1990, *North-east Perth: An Archaeological Landscape*. HMSO: Edinburgh; Friell, J. G. P. and Watson, W. G., 1984, *Pictish Studies: Settlement, Burial and Art in Dark Age Northern Britain*. BAR 125: Oxford; Geddes, G. and Hale, A., 2010, *The Archaeological Landscape of Bute*. RCAHMS: Edinburgh.
- 9 Dixon, P., 2002, *Puir Labourers and Busy Husbandmen: The Countryside of Lowland Scotland in the Middle Ages*. Birlinn: Edinburgh.
- 10 McNeill, P. G. B. and MacQueen, H. (eds), 1996, *Atlas of Scottish History to 1707*. Edinburgh University: Edinburgh, pp. 238-40.
- 11 RCAHMS, 1993, *Waternish: An Archaeological Landscape*. RCAHMS: Edinburgh; RCAHMS, 1994, *Southdean: An Archaeological Landscape*. RCAHMS: Edinburgh; RCAHMS, 1995, *Mar Lodge Estate, Grampian: An Archaeological Survey*. RCAHMS: Edinburgh; RCAHMS, 2001, 'Well sheltered and Watered': *Menstrie Glen, A Farming Landscape near Stirling*. RCAHMS: Edinburgh.
- 12 Richards, C. (ed), 2012, *Building the Great Stone Circles of the North*. Oxbow: Oxford.
- 13 <https://canmore.org.uk/site/4172/lewis-druim-nan-eum> [accessed March 2018].
- 14 Ashmore, P., 2002, *Calanais: The Standing Stones*. Historic Scotland: Edinburgh.
- 15 Brophy, K., 2015, *Reading Between the Lines: The Neolithic Cursus Monuments of Scotland*. Routledge: London.
- 16 Whittle, A. W. R. et al., 1986, *Scord of Brouster: An Early Agricultural Settlement on Shetland*. OUCA Monograph 9: Oxford.
- 17 Halliday, S., P. 1993, 'Marginal agriculture in Scotland', in Smout, T. C. (ed), *Scotland since Prehistory: Natural Change and Human Impact*. Scottish Cultural Press: Aberdeen, pp. 64-78.
- 18 Halliday, S., 2007, Chapter 3, 'The Later Prehistoric Landscape', in RCAHMS, *In the Shadow of Bennachie: A Field Archaeology of Donside*. Society of Antiquaries Monograph: Edinburgh.
- 19 Armit, I. and Mackenzie, J., 2013, *An Inherited Place: Broxmouth Hillfort and the South-East Scottish Iron Age*. Society of Antiquaries Monograph: Edinburgh; Dunwell and Strachan, A. and R., 2007, *Excavations at Brown Caterthun and White Caterthun Hillforts, Angus, 1995-1997*, TAFAC Monograph 5. TAFAC: Glenrothes.
- 20 Cowley D., 2016, 'Creating the Cropmark Archaeological Record in East Lothian, south-east Scotland', in Crellin, R., Fowler, C. and Tipping, R. (eds), *Prehistory without Borders: Prehistoric Archaeology of the Tyne-Forth Region*. Oxbow: Oxford; RCAHMS, 1994, *South-east Perth: An Archaeological Landscape*. HMSO: Edinburgh.

- 21 Breeze, D. J., 2008, *Edge of Empire: Scotland's Roman Frontier*. Birlinn: Edinburgh.
- 22 Bishop, M. C., 2014, *The Secret History of the Roman Roads of Britain*. Pen & Sword: Barnsley; Margary, I. D., 1973, *Roman Roads in Britain*. John Baker: London; Ordnance Survey, 2011, *Roman Britain: Historical Map*. Ordnance Survey: Southampton.
- 23 Hunter, F. and Keppie, L. (ed), 2012, *A Roman Frontier Post and Its People: Newstead 1911-2011*. National Museums of Scotland: Edinburgh; Poulter, J., 2009, *Surveying Military Landscapes Across Roman Britain: The Planning of Dere Street, Hadrian's Wall and the Vallum, and the Antonine Wall in Scotland*, British Archaeological Reports British Series 492. Archaeopress: Oxford.
- 24 Carver, M., Barrett, J., Downes, J. and Hooper, J., 2012, 'Pictish Byre-houses at Pitcarmick and their landscape: investigations 1993-5', *Proc Soc Antiq Scot* 142. Society of Antiquaries: Edinburgh, pp. 145-199.
- 25 Cruden, S. H., 1981, *The Scottish Castle*, 3rd ed. Nelson: Edinburgh.
- 26 Dixon, P., 2003, 'Champagne Country: Rural Settlement in Lowland Scotland', in Govan, S. (ed), *Medieval or Later Rural Settlement: Ten Years On*. Historic Scotland: Edinburgh, pp. 53-64.
- 27 Brown, M., 2012, *Scotland's Lost Gardens*. RCAHMS: Edinburgh; Cook, W. B., 1907, 'The King's Park of Stirling in History and Record', *Stirling Natural History and Antiquarian Society Transactions* (1906-7), pp. 110-137.
- 28 <https://canmore.org.uk/site/search/result?SITETYPE=31&SITECOUNTRY=1> [accessed March 2018].
- 29 Bil, A., 1990, *The Shieling*. John Donald: Edinburgh; Dixon, P., 2018, 'What Do We Really Know about Medieval Transhumance in Scotland?', in Costello, E. and Svenson, E. (eds), *Historical Archaeologies of Transhumance in Europe, Themes in Contemporary Archaeology*. Routledge: London, pp. 59-74.
- 30 <https://canmore.org.uk/site/162580/> [accessed March 2018].
- 31 Dixon, P., 2003, 'Champagne Country: Rural Settlement in Lowland Scotland', in Govan, S. (ed), *Medieval or Later Rural Settlement: Ten Years On*. Historic Scotland: Edinburgh; Lelong, O., 2003, 'Rural Settlement in the Highlands: A Review', in Govan, S. (ed), *Medieval or Later Rural Settlement: Ten Years On*. Historic Scotland: Edinburgh; Dalglish, C., 'Scotland's Medieval Countryside: Evidence, Interpretation and Perception', in Christie, N. and Stamper, P. (eds), *Medieval Rural Settlement: Britain and Ireland, AD 800-1600*. Windgather Press: Oxford.
- 32 Haldane, A. R. B., 2015, *The Drove Roads of Scotland*. Birlinn: Edinburgh.

Historic Land-use Assessment of Scotland, 1996–2015



HISTORIC ENVIRONMENT SCOTLAND

ÀRAINNEACHD EACHDRAIDHEIL ALBA

Chapter Two: THE MODERN LANDSCAPE, c1750–2015, PART ONE



Designed landscape and parkland

Rough grazing and site of iron age fort

Former medieval settlement and modern golf course

18th – 20th century managed woodland

18th – 21st century cemetery

18th – 19th century crofts and small holdings

Medieval village

19th – 21st century urban area

18th – 19th century rectilinear fields and Roman military site

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INTRODUCTION

This chapter concentrates on the land-use character of the modern landscape, which was created between about 1750 and 2015 and is still to a large extent that which is with us today. Apart from the massive afforestation of the last 100 years and an expansion of built-up areas, it is still recognizably the landscape created during the second half of the 18th and the 19th centuries that is depicted on the first edition of the Ordnance Survey 6-inch map during the second half of the 19th century. This chapter outlines these changes and includes case studies that illustrate less well-known elements of this landscape.

Scotland is littered with the remains of the past, despite, or perhaps because of, its uniquely modern landscape – a result of the overwhelming impact of the agricultural and industrial revolutions of the 18th and 19th centuries on the previous landscape.¹ Improvement period agriculture, which was established across the whole country over a period of only some 100 years, from c1750 to c1850,

encompassed changes in crop rotation, better farm management and higher levels of productivity. More importantly for this assessment, it also consolidated the land into larger discrete farm-holdings at the expense of smallholders or cottars. In practical terms, the changes in agriculture that were introduced from the mid-18th century created a new farming landscape. In the upland areas, where pasture was extensive but arable land scarce, sheep farms replaced unproductive townships. In contrast, the mixed farms of the Lowlands, based on newly consolidated and enclosed farmland, replaced the unenclosed strips, and the extent of farmland was increased through the draining and improving of lochs and bogs that once provided summer grazing and fuel. Meanwhile, industrial activity, such as coal mining and iron production, was also based in rural areas where the raw materials were to be found, and these resources were exploited by landowners as enthusiastically as agriculture was, creating new industrial buildings, extraction sites and settlements to serve them.

Section One:

CREATING THE LANDSCAPE OF THE AGRICULTURAL AND INDUSTRIAL REVOLUTIONS

Any historical assessment of the changing landscape of Scotland should take General Roy's Military Map of 1747–55 as a key point of reference.² Roy was making a map at a smaller scale, 1:36,000, than that of the HLA map at 1:25,000. Apart from the main centres of population and estates where there appears to have been an attempt at representational accuracy, Roy's map is a scaled sketch, but nonetheless it is an

important map because it is large enough to show the agricultural landscape prior to the improvements. Where it can be poor is in upland areas, missing out small valleys and settlements. A comparison of Roy's map with the first edition of the Ordnance Survey map (1843–82) will reveal just how complete that transformation was in the space of about 100 years (eg Loch Spynie area – Figs 1 and 2).³

Fig 1 General Roy's map showing the unimproved landscape around Elgin and Loch Spynie, Moray, c1750. Reproduced with the permission of the National Library of Scotland.

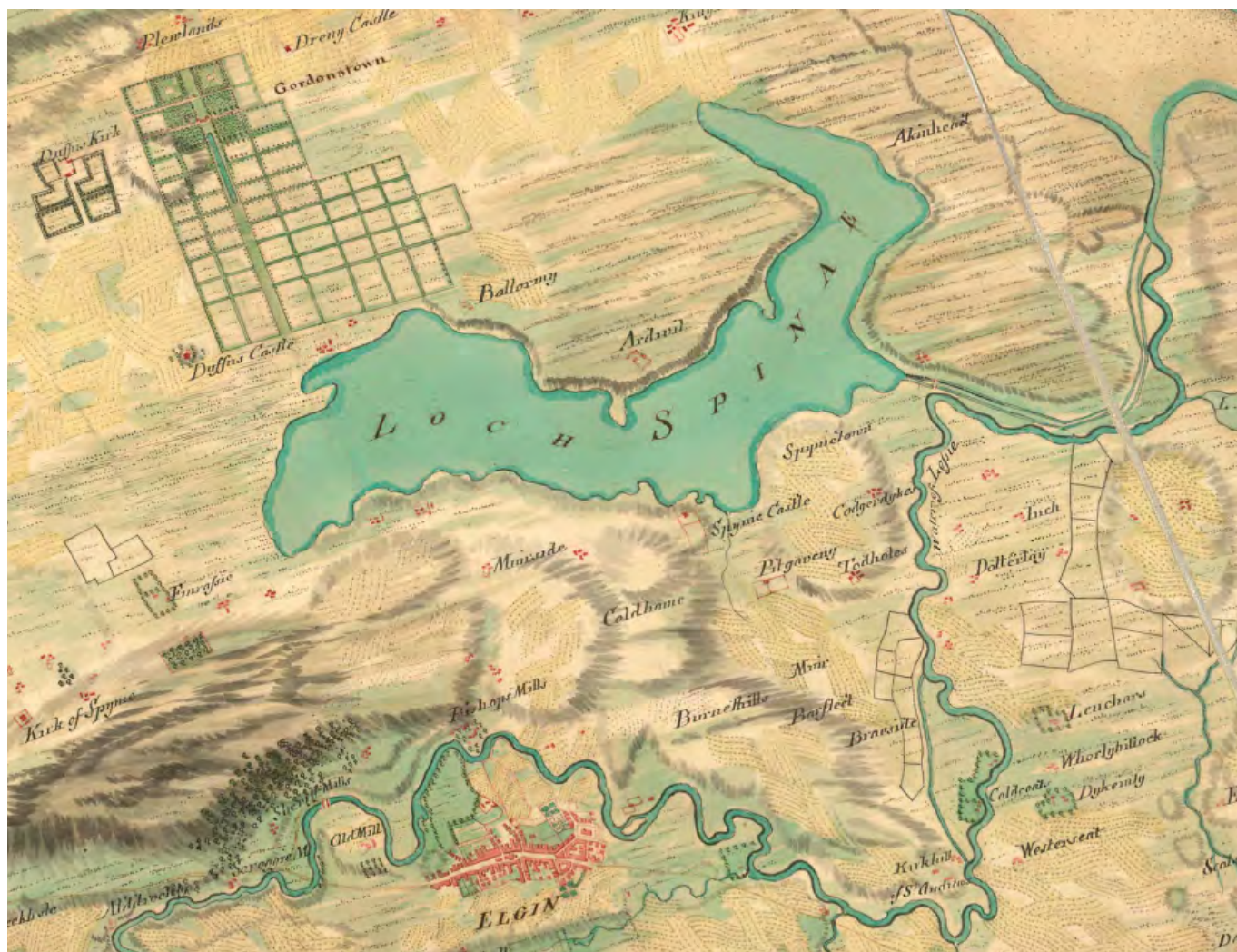




Fig 2 First edition OS 6-inch map of Elgin and Loch Spynie (right edge, centre), much reduced by drainage. Reproduced by permission of the National Library of Scotland.



Fig 3 The geometric designed landscape at Gordonstoun House, later a school. DP103288.

The fields that make up the late 19th century landscape were often newly created during this period, replacing the furlongs of unenclosed strip fields, reverse-S-shaped on plan as depicted on Roy's map (Fig 1), with the familiar enclosed squared fields of the modern landscape; and the clustered buildings of pre-improvement towns with individual farmsteadings and their courtyard ranges of outbuildings beside a farmhouse (Fig 2). The only fixed points were medieval urban centres like Elgin, and designed landscapes that were recognisable on Roy's map by their geometric designs, as at Gordonstoun (Fig 3), a rare survival of a Renaissance-inspired landscape. Formal landscapes like this were inspired by French models such as Versailles, where the house was integrated with extensive gardens, providing a focal point for avenues leading to distant points. More often

in Scotland, estates were redesigned in the later 18th and 19th centuries to naturalistic landscapes favoured by aristocratic landowners in the Improvement period. Ironically, just as the new efficient rectilinear enclosures were being laid out for farming, the classical designs of 17th and early 18th century parks with their avenues and vistas were being replaced by Capability Brown-style policies with trees planted and water bodies built in faux naturalistic designs (see below – Designed Landscapes). A rare survival of reverse-S-shaped strip fields in the present landscape may be seen on the south side of Elgin, where the street pattern of Academy and its neighbouring streets follows the curve of former strips of open-field furlongs that had been created by prolonged ploughing with a heavy mouldboard plough, drawn by a large team of oxen and/or horses (Fig 4).



Fig 4 The medieval centre of Elgin. Note the reverse-S curve of the 19th century streets in the top left to the north of the town centre, which displays the typical narrow properties running back from the High Street. DPO19259.

The Agricultural Revolution

By far the greater part of the modern landscape is a creation of the Improving movement of the 18th and 19th centuries, founded in Enlightenment ideals of rationalism. Nature was no longer considered preordained, but was there to be improved – a notion developed in the universities of the 18th century and passed on to the professional men that became factors for the landowning classes. Agricultural change was particularly extensive in Scotland because few people had inheritance rights to land, leaving the environment free to be altered by those landowners who could control how it was managed. This was made easier by the trend towards single-tenancy farms at the expense of the multiple- and co-tenancy farms of the 17th and 18th centuries, creating farms that were less constrained by communal working practices and more easily geared to production for the market.⁴

In upland regions the story of the agricultural revolution is at its most dramatic in Sutherland, where most of the land in the county belonged to one man, the Duke of Sutherland, who chose to invest in sheep farming in the early 19th century as it gave him a better return than co-tenancy farms on a mixed farming basis. At the other end of the country the Duke of Buccleuch, an equally large landowner, engrossed the small farms of the upland dales of Eskdale, Dumfriesshire, and Liddesdale, Roxburghshire to make more viable units during the 17th and 18th centuries. Large-scale emigration occurred in both areas at different times – in the 17th century from Dumfriesshire and in the 19th century from Sutherland.⁵ In both areas the estates created upland hill farms geared to sheep, the greater part rough grazing, with little in-bye land, which left the valleys lined with the remains of deserted settlements as tenants became redundant. Both estates invested in new settlements to try and stem the flight from the land, creating crofting townships in the north and planned villages in the south. Neither economy was a great encouragement to woodland, though new enclosed woods were planted on the

Buccleuch estates, and it is only in the 20th century that this has been addressed on a large scale with the establishment of the Forestry Commission in 1919 (see below – Section 3).

Enclosure in lowland areas was no less a story of investment by large estates. It was an improvement that could increase the rental value of the land two- or threefold in a few short years. Landowners like the Duke of Hamilton and the Earl of Strathmore were investing thousands of pounds in enclosures during the later 18th century, employing new staff and carrying out surveys of their estates to manage the process efficiently,⁶ illustrated by the numerous estate plans that outline the pre- and post-improvement stages in the process. The investment covered not just new fences but also drainage, liming, farmhouses and access roads. It was nothing less than a transformation of the landscape. Whole bogs like the Carse of Stirling or lochs like Spynie (Fig 1) were drained and new farmland created (see below – Draining Lowland Lochs).⁷

The modern field pattern was developed by agricultural improvers to provide fields with regular shapes that were easy to cultivate. Their ideal shape was undoubtedly square or rectangular, though many did not achieve such uniformity. Some early improvers like John Cockburn experimented with field sizes at Ormiston, East Lothian, where the small field sizes can be seen on the first edition OS 6-inch map, some being as little as 2 or 3 acres.⁸ Fields of 20 acres became typical and proved more efficient. Planned Fields with a co-axial layout form only about four percent of the total of Rectilinear Fields and are much more common to the north-east Lowlands than in other lowland areas, and are quite unusual in the central Lowlands and Galloway. This pattern relates in part to the actions of individual landowners: for example, the isle of Shapinsay, Orkney was entirely laid out by Lord Balfour in squared fields in the 1840s (Fig 5).⁹ A more organic process of enclosure, such as the less regular rectilinear fields of the Lothians, developed through the gradual sub-division of a farm into fields as capital became available to the tenant farmer.



Fig 5 Planned Fields and Farms on Shapinsay, Orkney; the ultimate improved farmland. DP143075.

Draining Lowland Lochs: A Case Study by Michael Stratigos

While the HLA map demonstrates how the agricultural improvements of the 18th and 19th centuries have been the defining factor in shaping the rural landscape of Scotland, much of this corresponds to the enclosure of fields and its impact on earlier evidence of landscape organisation, but the ethic of Improvement also extended to bodies of water. Draining and reclaiming lochs and other wetlands was an essential element of the transition to rationalised agriculture in the 18th and 19th centuries that also included enclosing fields, crop rotations and changes

to land tenancies.¹⁰ While there has been detailed analysis of all the above mechanisms, there has been no systematic quantification of the practice of drainage and its impact on the landscape. However, recent analysis of Roy's *Military Survey of Scotland* has begun to quantify loch drainage by tracking individual lochs depicted on Roy's map through time on editions of the Ordnance Survey. This analysis has demonstrated that lowland (below 200m OD) regions of Scotland, and particularly eastern Scotland, have seen dramatic impacts to the lacustrine environment with between 40 and 95 percent of the extent of individual lochs depicted on Roy's map drained or significantly lowered through drainage.



Fig 6 Restenneth Priory, Angus was once beside a loch, the gravels of which are now exploited. DP009022.

The former extent of open fresh water prior to the Improvement period in lowland eastern Scotland was greater than has perhaps been previously recognised, and the impact drainage has had on the landscape is evident in a variety of examples. The former Loch Spynie, for instance (Figs 1 and 2), extended over 11–12km² before being drained fully in the first decade of the 19th century. Other examples of wholly drained large lochs in eastern Scotland include Loch of Park, Aberdeenshire, Restenneth Loch (beside Restenneth Priory; Fig 6) and Loch of Kinnordy in Angus. Other lochs have lost significant amounts of water without being completely drained, such as Loch Leven, Fife, which has lost c7km² of open water area but remains a large body of water of 13km². These are just some notable examples from a list of over 200 lochs in eastern Scotland identified on Roy's map, the majority of which have been impacted by drainage.

This level of land-use change highlights the effort and expense 18th and 19th century landowners and tenants expended to drain lochs and improve their land. Drained land is now difficult to distinguish from previously cultivated land.

This history of drainage has shaped the archaeological record of these wetland environments and, crucially, has impacted on how it has been interpreted and classified. There are over 80 examples across Scotland of recorded archaeological sites that could be reconsidered as crannogs/artificial islands/occupied islands based on the alteration (draining, lowering, or damming) of lochs. For example, Lochore Castle in Fife has been recorded as a motte-and-bailey castle. However, Roy's map very clearly depicts the castle on an island, and other historic records attest to its location within a loch.

Rural Settlement

From the 18th century many landowners, in the face of migrating populations drawn by better pay in the manufactures of the burghs and towns, decided to establish new villages to encourage local industry and to provide a habitation for labour that worked on the surrounding farms. These new settlements are distributed across the lowland farmland of Scotland. In coastal areas they provided a base for fishing, and the British Fisheries Society founded Tobermory, Isle of Mull, Ullapool, Ross-shire and other villages in the 18th century for this very purpose (see below – Planned Villages). The more successful planned villages developed into towns, such as Turriff, Aberdeenshire and could even acquire independent status as police burghs in the 19th century.

A second element in this paternalist approach was to create smallholdings for cottars and small tenants that would otherwise have lost any stake in the land. Landowners wished to use the uplands for sheep production to which they were more suited, but this provided less employment and led to mass emigration from the Highlands. From the late 18th century, landowners like the Macleods of Dunvegan on the Isle of Skye began to establish crofting townships for their tenants along the coast, each with a plot of a few acres and access to some common grazing, allowing landowners to open up large swathes of rough grazing to sheep farmers (see below – Crofting Townships). With a growing population and a lack of security for their leases, this was not a great success, especially since employment beyond the croft was limited and there was no security of tenure, and it was only the result of protest and riots that the rights of crofters were enshrined in an Act of Parliament in 1886,¹¹ following the Napier Commission into the living conditions of the crofters. While this did much to assuage the needs of crofters there continued to be a demand for more land, leading to squatters' settlements on the Western Isles, despite the Congested District Board acquiring sheep farms to turn into crofts. The final phase in this investment in rural smallholdings came after the First World War with the return of veterans from the front. The government decided to create Homes Fit for Heroes and the Board of Agriculture was duly tasked with purchasing farmland to provide the land for smallholdings (see below – Agricultural Holdings and Recent Crofting Townships).

The Industrial Revolution

However, it wasn't just agricultural improvements that resulted in major changes across parts of Scotland's lowland landscapes. Mineral extraction and processing, shipbuilding, engineering and manufacturing changed the rural landscape irrevocably by taking its buried resources and transforming them, thereby creating an industrialised, urbanised nation. Most of these developments were concentrated in the Central Belt, from Ayrshire across to West Lothian, where water power, coal and iron ore were in plentiful supply.

Initially the water power of the Clyde fuelled the linen and then cotton industries. Planned industrial villages were built, often imposed on the landscape in their grid-pattern form, to ensure that there was labour to hand (eg Kirkfieldbank, near New Lanark; Fig 7). Companies were founded to take advantage of developing heavy industries, exploiting considerable areas of agricultural land by quarrying and mining, as at Muirkirk, Ayrshire (Chapter Two, Part Two, Fig 88). New villages were established for their workers too, as at the ironworks of Wilsontown, near Lanark, which housed 400 people in the 1790s and some 2000 by 1812 (Fig 8). But it was the ironworks at Carron, Falkirk, close to the Forth that was the largest in Europe, with over 2000 workers in 1814. These and the other industrial centres benefitted from locally dug coal and iron ore. Spoil tips soon became a feature of industrialised landscapes, the result of oil shale, coal, iron, lead and other mineral extraction.¹²



Fig 7 Kirkfieldbank Planned Village, by New Lanark. DP153765.



Fig 8 The miners' cottages lined the edge of the road along the river terrace at the former Wilsontown Ironworks, Lanarkshire and the coal pits amongst the trees. SC354304.

While manufacturing was mainly urban, coal mining was mainly rural with coal-mining areas forming the basis of the 18th century iron industry and changing the landscape of the central Lowlands from the end of the 18th century onwards. The development of the industry depended to a large extent on improved transport. Before the 19th century the road system of Scotland was poor, and natural waterways provided the cheapest method of carrying large loads, though limited to the firths and lower parts of rivers. The canal movement began first as a device for the movement of coal to market in Ayrshire and Lanarkshire and became something of a boom industry before the steam-engine locomotive took over in the second quarter of the 19th century.

Although the smaller early canals, such as that along the Don in Aberdeenshire, were too narrow for mapping by HLA, the larger later canals, such as the Caledonian Canal, feature because of their pools and related structures. General Caulfield's campaign of constructing military roads in the early 18th century did much to open up traffic to the Highlands on the back of the military investment, but for the Lowlands it was the toll roads that did most to open up rural areas to wider markets. Once again these are too small in scale for this mapping, but the railways that were introduced in the second quarter of the 19th century have made more of an impact on the landscape due to their large sidings and stations.

The new forms of transportation described above were introduced to take raw materials to the blast furnaces, engineering works and the shipbuilding yards that developed across the Central Belt. The railway lines that were subsequently constructed linked the mines to the manufacturing centres.¹³ The Clyde, upper Forth and lower Tay riverbanks were transformed, with ports and docks for the transfer of cargoes, huge shipbuilding yards and timber ponds for the storage of shipbuilding timber. Large quarries were opened close to major cities, such as Rubislaw in Aberdeen, to provide sufficient

stone for industrial and domestic buildings (Fig 9). Limestone was extracted wherever it occurred for use as a building mortar or for spreading on arable ground to improve its productivity; the Broadstone quarries at Gateside in Ayrshire were particularly long-lived. And clay works were opened so that bricks could be manufactured for local use, as at Golspie in Sutherland.¹⁴ Scotland's population grew eightfold between 1700 and 1900; industrial villages and urban centres grew exponentially and so the landscapes around them were altered forever.

Fig 9 Rubislaw Quarry; its stone was used to rebuild Aberdeen City buildings in granite. SC873291.





Fig 10 The graceful designed landscape and Palladian Greenbank House, Renfrewshire, built on the proceeds of tobacco and slave trading. DP213153.

Those that made or bolstered their fortunes from foreign trade, industrial and/or agricultural developments used at least some of their profits to support a lifestyle at some distance from the noise and grime of the cities. They extended their medieval castle homes or built large mansions in the countryside. It had become fashionable for landowners and entrepreneurs to develop the grounds or 'policies' immediately around their impressive residences for pleasure; they were laid out for artistic effect with parklands, water features, formal avenues and paths. Clydeside merchants and industrialists tended to locate to places within a day's journey of Glasgow. Greenbank House,

south of the city, with its formal avenues and walled garden, was built in the 1760s for Robert Allason, a trader with interests in tobacco and slaves: not an uncommon source of wealth for Glasgow merchants (Fig 10). Other country houses were associated with hunting and fishing. Lord Tweedmouth, with his inherited wealth, bought an estate south-west of Inverness, and commissioned the huge mansion of Guisachan House, its home farm and the village of Tomich in the 1850s.¹⁵ Across the lowland countryside of the Central Belt and beyond, the rural landscape increasingly included these areas of managed picturesqueness within the broader agricultural backdrop of rectilinear fields.

Built-up Areas – Origins and Development

The cores of many urban centres such as Elgin (Fig 4) and St Andrews (see Chapter Four, Fig 10), where the properties and streets are of medieval origin, are a good example of the medieval imprint on the present, and are the oldest parts of the modern landscape still actively managed for their original purpose as trading centres. The properties survive because they still have ownership and legal standing, and much of the core urban landscape of places like Edinburgh, Perth and St Andrews owe their present form to their origins as burghs created by King David in the early 12th century to encourage trade and manufacture. The narrow properties of regular widths are the physical evidence of medieval property rights which have created the form of many of our urban landscapes. These originate in the allocation of plots to merchants, who possessed them with heritable rights, and a plot that was based on the length of a pole or perch, which varied in length from place to place (the standard English pole was 5.03m long). However, archaeological and cartographic evidence for the width of plots ranges from c5.5m to 11.6m, and at Rattray, Aberdeenshire it exceeded that in the industrial area.¹⁶

The expansion of our urban centres only really began in the 19th century, with the New Towns of Edinburgh, Glasgow and Dundee (Fig 11). Prior to that, most development was infilling within the burgh limits or ribbon development along the highway. The New Town in Edinburgh, developed by the city fathers from the last decade of the 18th century, was a planned settlement of a different order that led to the centre of gravity of the city changing. Its design was classical in concept and paralleled developments in cities like Bath and London. For an urban settlement to spread in such a planned way outside its boundaries was a new step, and was imitated in Glasgow and elsewhere.¹⁷ Part of this expansion involved dealing with a growing problem of burial in urban environments, which took its most elaborate form in the Necropolis at Glasgow (see below – Cemeteries). With the growing wealth of urban communities in the 19th century, leisure time grew. One side of this was horse racing with courses like that at King's Park in Stirling, while golf, hitherto a game of the rich played on their parkland, became a pastime for the growing middle class, with links courses like that adjacent to St Andrews.



Fig 11 Edinburgh New Town's characteristic geometric design of streets and tenement blocks. SC793289.

Section Two:

CHARACTERISING THE MODERN LANDSCAPE

The rest of this chapter highlights the key elements of modern land use, whether of medieval or later origin, that have influenced regional character and underpin many of Scotland's landscapes' distinctive qualities. It highlights both the common and the unusual, but concentrates in the first instance on those things that are still maintained (current landscapes) rather than those that have been abandoned (relict landscapes). The Land-use Types are ordered by their period of origin, with the oldest first, in order to emphasise the antiquity of the human impact on the modern landscape. Active landscapes of medieval origin are limited to settlement foci, such as towns and villages, and to rare fossils of medieval fields that have been

incorporated in the enclosures of the agricultural improvements in the 18th and 19th centuries. These are small in extent in comparison with the rest of the landscape, which is of more recent origin, but make a big impact because most people visit their town and village centres regularly.

In the following pages, each Land-use Type is presented with three graphics: a distribution map; a pie chart depicting the proportions that are still maintained in their original function or the land use they have been changed to in the modern landscape; and the regional distribution in a bar chart. The regions referred to in this bar chart are those described in the introduction to Chapter Three (Map 2).

Medieval Town

(MAP 1 & FIG 13)

Medieval Town: Form and Origins by Richard Craig

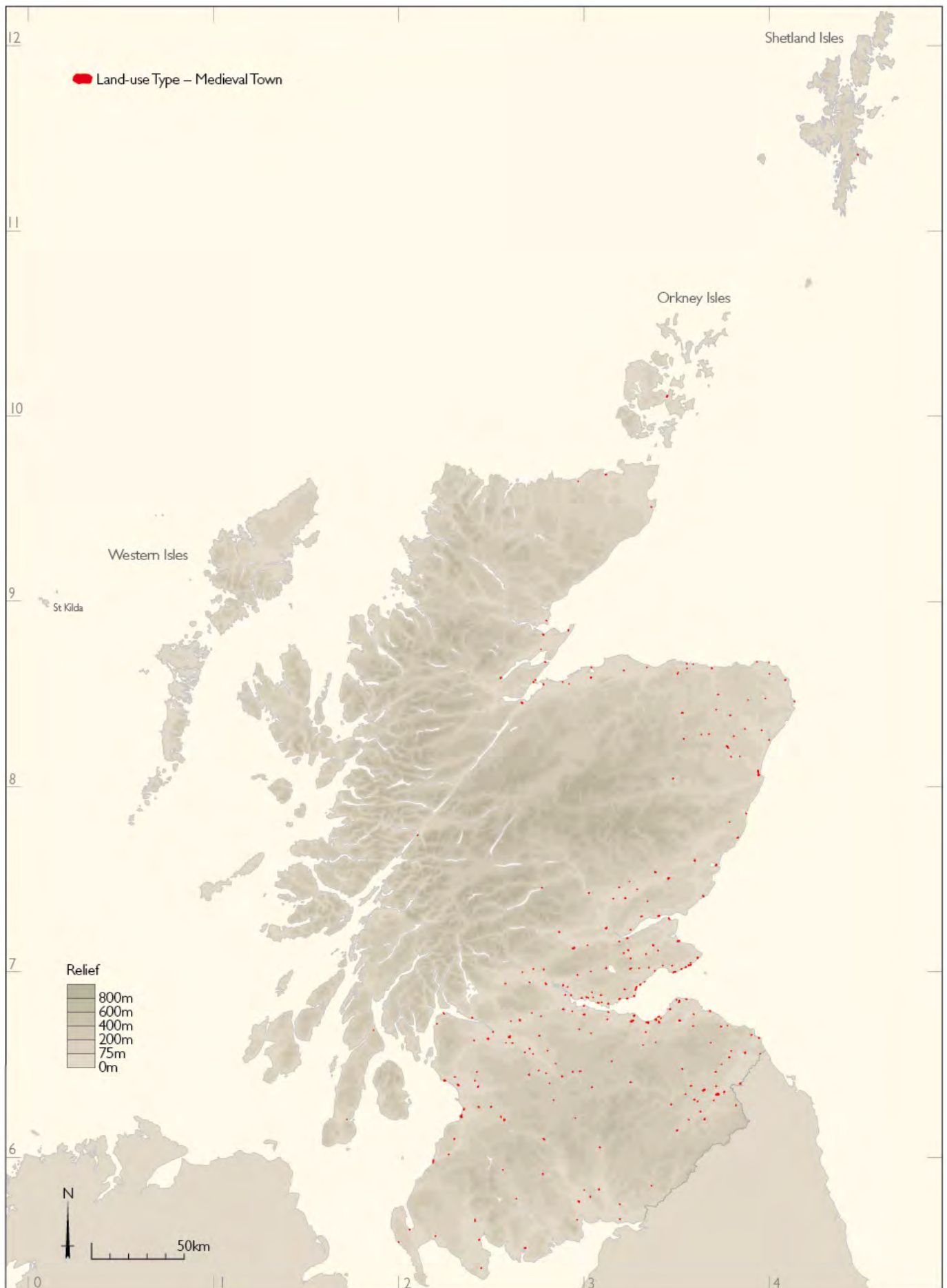
Medieval towns are found mostly in south and east Scotland with a handful of sites in the Highlands and Islands. Chartered as burghs, they are characterised by long lengths of terraced housing arranged in an organised pattern around a central market square or along the length of a broad main street, often with a broader section that served as the marketplace. The right to hold weekly markets was an important advantage for all burghs as it allowed local people to sell products produced in the area. Houses within such a town usually had sizeable but narrow

rear gardens that terminated in a back lane that encased the settlement, such as Newburgh, Fife or Haddington, East Lothian (Fig 12).

King David I of Scotland (1084–1153) began to establish royal burghs in Scotland during the first half of the 12th century and, surprisingly, this practice continued well into the 20th century. Auchterarder, originally founded in the 13th century, lost its burghal status in the 16th century, before being reinstated in 1951. However, most were a creation of the medieval period. Each town received a royal charter that established the rights of the burgh, which included powers to appoint a baillie to enforce them. The royal status of a town was important as it would allow the residents to engage in foreign trade, whereas burghs of barony or regality could not.

Fig 12 Haddington has the classic expanded street of a medieval burgh for a marketplace. The tollbooth and other buildings now occupy what was once an open space. DP073720.



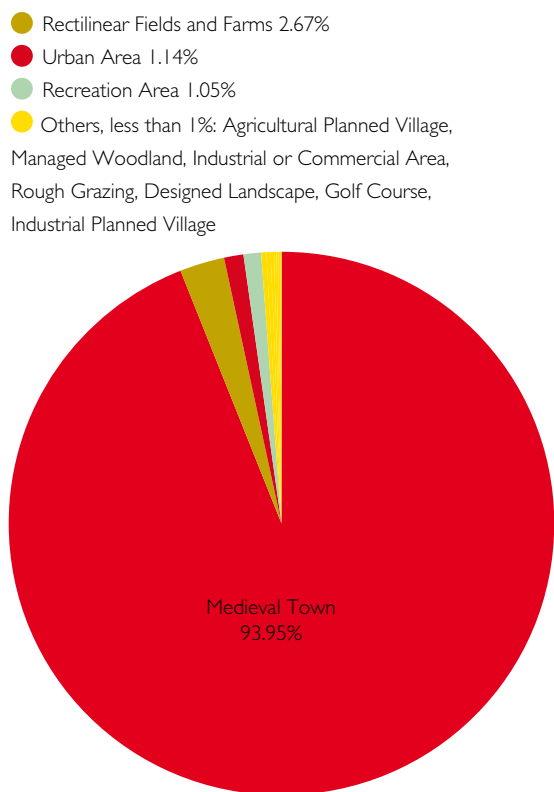


Map 1 Distribution of Medieval Town areas. Towns have a lowland distribution. GV006856.

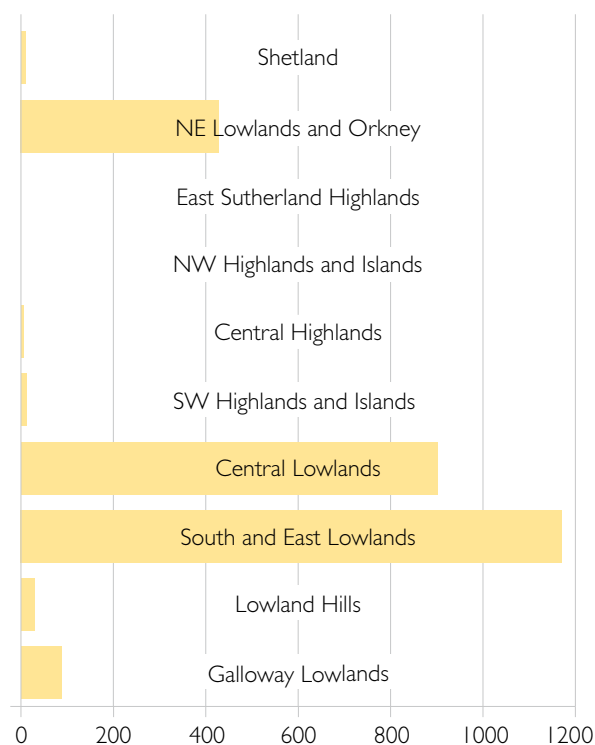
Burghs of barony were titles granted to the landowner and were similar to royal burghs in terms of the right to enforce the law and hold weekly markets. Over 300 burghs of barony were established. These burghs were abolished at the end of the 19th century with the 1892 Burgh Police (Scotland) Act which united the towns together for municipal and law enforcement. Burghs of regality were so called because they were granted to leading noblemen, but they still operated in much the same way as burghs of barony. The Local Government (Scotland) Act 1973 led to the abolition of all burghs by 1975.

Pryde (1965) identifies 482 Scottish burghs, of which just over half could be recognised and mapped in today's landscape.¹⁸ This suggests that the medieval street layouts of over 50 percent of all medieval burghs still exist within modern towns. Original street layouts of some burghs were lost in the 20th century during the rebuilding of houses and construction of commercial area as at Methil, Fife. Occasionally some lost medieval towns are recorded as earthworks, or cropmarks in rectilinear fields. Roxburgh in the Borders, one of the earliest Scottish royal burghs, was more or less abandoned by 1460. However traces of its houses and streets are visible as linear cropmarks on aerial photographs, while pits used for the deposition of rubbish may be also be detected (Fig 14).¹⁹

Fig 13 Land use and regional distribution. GV006911.



Current Land-use Type of land that has been interpreted as Medieval Town



Area (ha) – by region – of land that has been interpreted as Medieval Town



Fig 14 Parchmarks in the lighter brown grass in 2006 revealed the streets and houses of the medieval royal burgh of Roxburgh. DPO19535.

Medieval Village and Settlement

(MAP 2 & FIG 16)

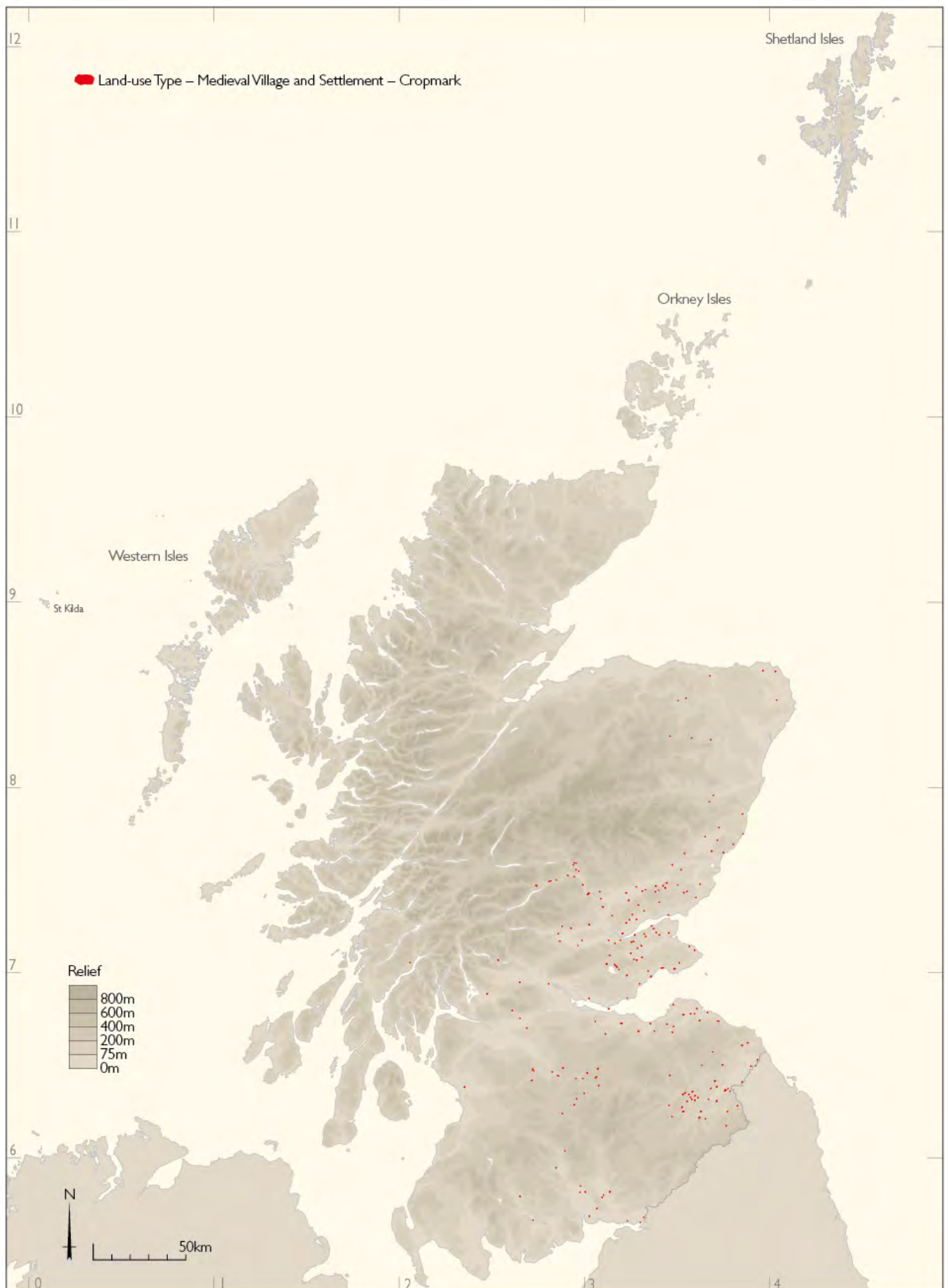
Medieval Villages: Survival and Loss
by Richard Craig

Villages with foundations from the medieval period are found mostly in south and east Scotland and for the most part are not found in the Highlands and Islands. They are characterised today by collections of stone-built houses erected in a seemingly random fashion along the sides of curving roads radiating from a central point, such as a church, street or market square, whereas they are actually well-ordered rows of houses and properties that run back from the street (Fig 15). Often the houses were constructed in rows, east and west, sheltered from the prevailing wind and on slightly higher ground where the risk of flooding is less.

The oldest surviving houses are traditionally harled buildings, constructed with random rubble stone from the local area, with small window openings. Often these buildings were replaced in the 19th century by improved structures with finished stone fronts and large windows on the footprint of the original. In some villages, the buildings front sizeable back plots which are accessed by a back lane. This can be prime building land as the village expands and it is not unusual to find houses dating from the 19th century that have been constructed in these gardens. Freuchie, Fife, which can trace its origins back to at least the 16th century, is a good example of a village that has developed over the centuries but retains its medieval pattern of streets and building plots. Most of the older houses were replaced in the 19th century, with modern development in the back plots.

Fig 15 Athelstaneford, East Lothian, Medieval Village and Settlement. This is a typical two-row street village with narrow properties on either side and an uneven boundary with the fields. Modern expansion is evident at the left-hand end and cropmarks indicating settlement shrinkage on the right-hand end. DP163755.





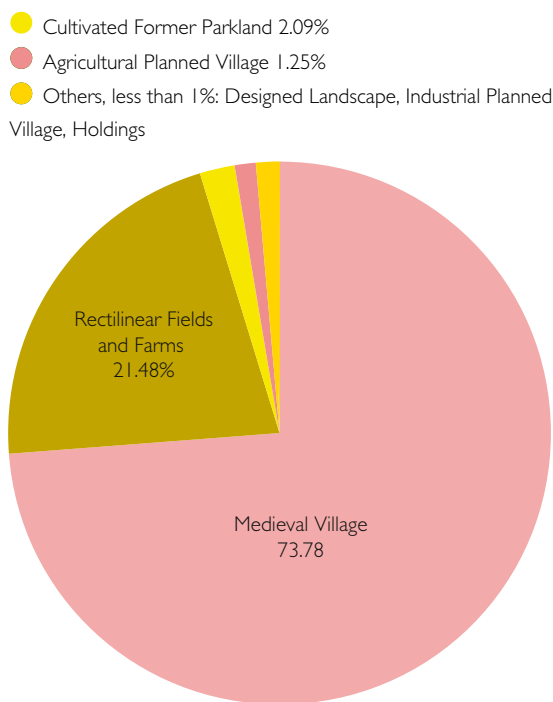
Map 2 Distribution of Medieval Village and Settlement areas. Another Lowland distribution. GV006852.

The street layout of medieval villages is clearly depicted on the first edition of the Ordnance Survey and on Roy's *Military Map of Scotland 1747–1755*. During the 20th century it was not uncommon for old buildings to be knocked down and replaced by modern houses on a more formalised plan that did not respect the original plot boundaries, losing the medieval layout. For example, much of East Wemyss, Fife was cleared away in the 1960s, with its medieval layout lost. This was not always the case, however, and infill has sometimes occurred without the loss of the old village properties. Single-storey semi-detached houses were built to the east of the church in the mid-20th century at Kingsbarns, Fife, with the loss of some garden boundaries, though back lanes were normally retained. Some medieval villages are protected as Conservation Areas or through the protection of their constituent historic

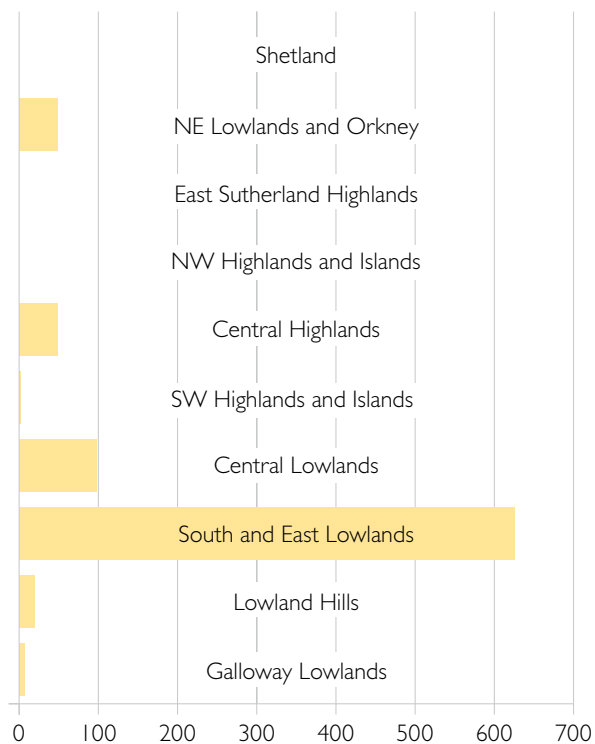
buildings. This has helped ensure that the original external character of the buildings is still evident in the landscape today.²⁰

While many Scottish villages in south and east Scotland can trace their origins back to medieval times, many others have been lost over the centuries, especially during the Improvement Period when they were cleared away with the creation of rectilinear fields. Earthworks and cropmarks in the landscape of such villages are rare, and mainly occur in the Scottish Borders and Perthshire. The extents of medieval artefact scatters can be difficult to ascertain and they have rarely been recorded in Canmore. These artefact scatters suggest human activity in an area which may have been directly associated with a lost village, such as Springwood Park, Kelso, in the Scottish Borders, which has been excavated.²¹

Fig 16 Land use and regional distribution. GV006907.



Current Land-use Type of land that has been interpreted as Medieval Village and Settlement – Cropmark



Area (ha) – by region – of land that has been interpreted as Medieval Village and Settlement – Cropmark



Fig 17 The yards, house sites and hollow ways of the deserted Medieval Village of Hume, Scottish Borders may be seen on the terraces below the castle. DP224825.

Roy's *Military Map of Scotland 1747–1755* depicts many villages which have now disappeared and is a unique record of such sites. Finding remains of these villages often relies on an aerial photograph being taken at just the right time to capture features in the landscape. The distribution of rig found as cropmarks in the Lowlands is extensive (Map 3) and may reveal a discontinuous patchwork of blocks of rig that reflects the same mosaic of cultivated and uncultivated land that is shown on Roy's map (eg Fig 1). While cropmarks represent a proxy record for medieval settlement, close observation has revealed the often amorphous and shadowy remains of buildings. Sometimes these are revealed by wall trenches, but more often by solid rectangular, sub-rectangular and lozenge-shaped marks that are the manifestations of sunken floors, probably predominately from byres. Often overlooked, such features are surprisingly

common and are starting to reveal the locations of early medieval and medieval settlement across the lowland landscape (Fig 18). In some cases they indicate the shifting locations or shrinkage of medieval villages.

Most medieval villages left no discernible traces in the landscape at all, as at Balclevie in Fife, which was situated to the south of Kilconquhar Loch and removed around 1760 by Sir John Anstruther. Legend has it that Anstruther was pressurised by his wife to demolish the village because it was spoiling the view from their home, Elie House. The area where the buildings stood is under cultivation, but no cropmarks of it have yet been recorded. In contrast, remains of the village of Fishwick in Berwickshire, founded in the 11th century, have been recorded as cropmarks, revealed in the differential growth crops under stress in dry summers (Fig 18).

Roy's map depicts an extensive settlement around the circumference of Hume Castle, Berwickshire, which was located at the top of a knoll. The castle was probably built in the 12th century, demolished in 1651 and rebuilt as a folly in 1794 by the Earl of Marchmont. Remains of the houses depicted on the map now survive as building footings around the knoll and are dissected by a road and the current Hume village – a replacement built in the 19th century (Fig 17).

It was not uncommon practice for landowners to clear away poor-quality housing and build planned villages for workers on their estates. Fortingall in Perthshire is an Arts and Crafts-style planned estate village built in the late 19th century that sits on the footprint of a much earlier settlement that is depicted on the first edition of the OS map. The original buildings are gone but the footprint of the earlier village is preserved in the late 19th century street plan.²²

Fig 18 The lines and small dark patches in the centre of this photograph mark the enclosures and pits of Fishwick Medieval Village, Scottish Borders. SC1596419.



Medieval/Post-medieval Reverse-S-shaped Fields and Ridge and Furrow – Cropmark

(MAP 3 & FIG 20)

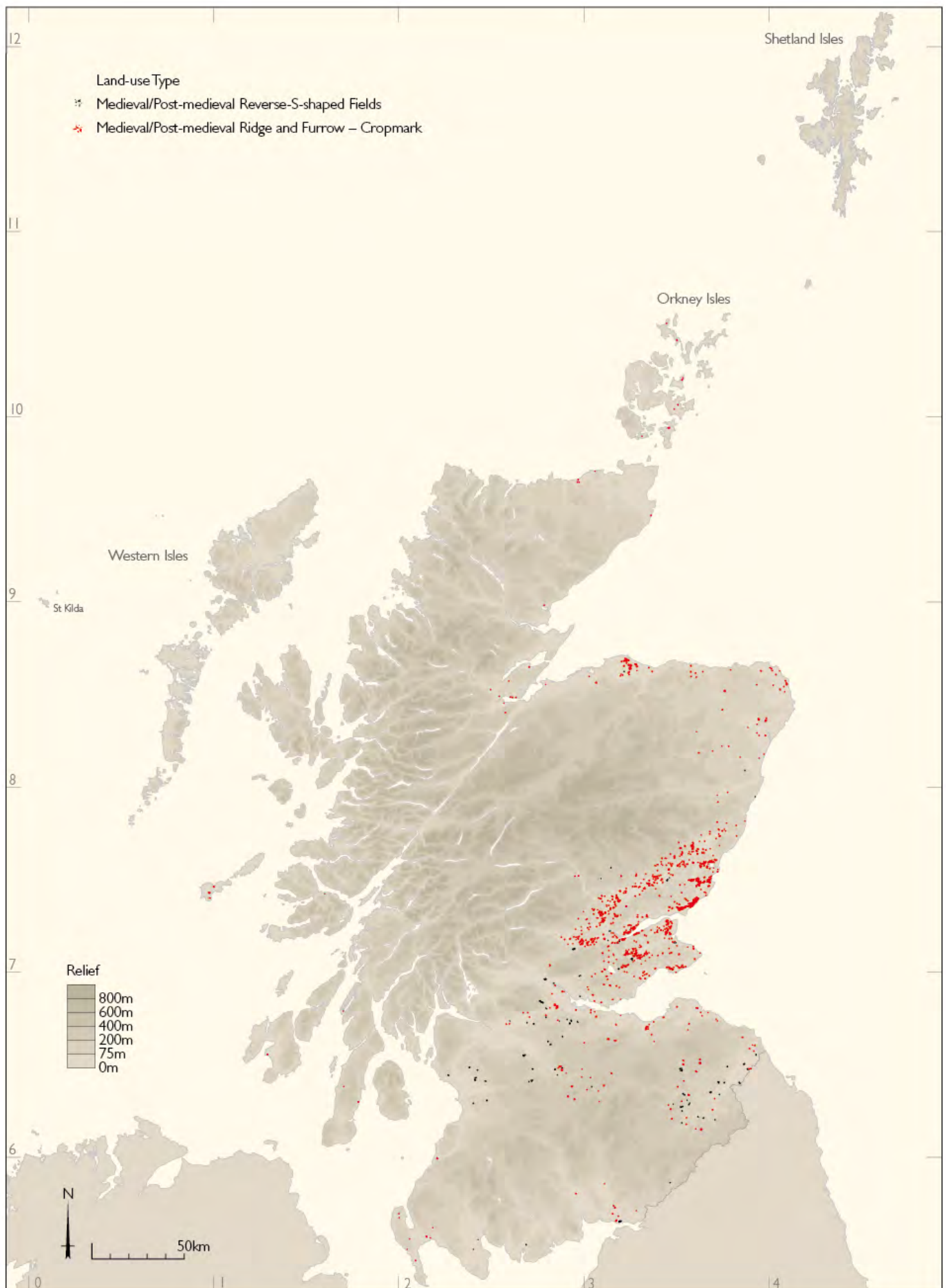
Medieval Strip Fields: Survival and Loss
by Piers Dixon

Few aspects of the modern landscape that are still in active management can be said to originate in the medieval period. However, Reverse-S-shaped Fields is one example that not only fossilised a relic of medieval agriculture, but is also maintained by modern farming practice, despite a steady attrition from modern intensification. These field boundaries are a relic of medieval strip fields and were unexpected as a feature of the modern Scottish landscape, which has hitherto been seen as substantially a creation of the agricultural improvements of the 18th and 19th centuries.

While in most villages and towns the strip-field furlongs were turned into rectangular enclosures that cut across the strips, in some cases the strips formed the very basis of the enclosures themselves. This occurred where landholders had heritable rights of ownership, such as in medieval burghs (see above – Medieval Towns), where the townspeople possessed the status of burgage tenure that included strips in the common fields of the burgh. Falkland in Fife is perhaps the best example of this. The heritors here not only divided up the strip fields, but also the rough grazing on the slopes of East Lomond Hill, marked by boundary stones. Strip fields may be seen in the large open field to the east of the town where there are curvilinear baulks defining the divisions between the fields of different ownership that retain the strip pattern of pre-improvement furlongs. Usually where this occurs the boundaries will have hedgerows planted along them, but occasionally this is marked by grass-covered baulks, as may be seen to the south-west of Lauder, Scottish Borders.

Fig 19 Reverse-S-shaped Fields fossilised as property boundaries in a modern housing estate at St Andrews. DP040861.





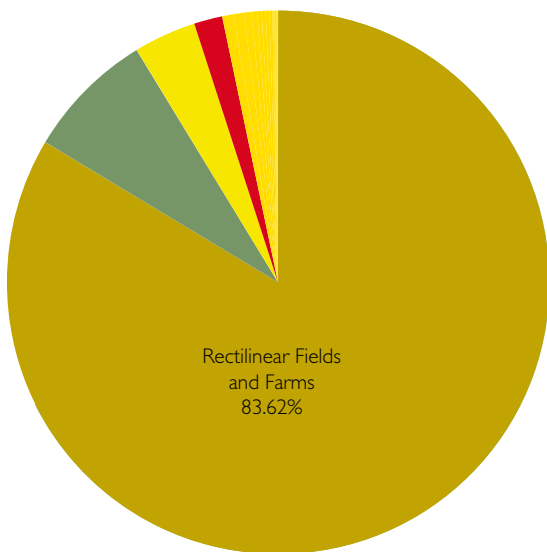
As a consequence of this close association of burgh and fields, the distribution is essentially in the Lowlands, south of the Mounth, with occasional relict upland edge outliers. It is thus one of the few agricultural features that interrupt the lowland pattern of rectilinear fields, apart from that other relic of pre-improvement farming, Curvilinear Fields (see below). It is the most visible signature of medieval strip fields in the Lowlands, which in other circumstances may only be seen as cropmarks in dry summers in arable fields (Chapter One, Fig 20), or the occasional survival of reverse-S-shaped rig itself, such as that at Prestonfield Golf Course in Edinburgh,²³ on the edge of Holyrood Park.

At West Cornton Vale, Bridge of Allan (Chapter One, Fig 6), the current field boundaries follow the reverse-S curve of medieval and later strip fields

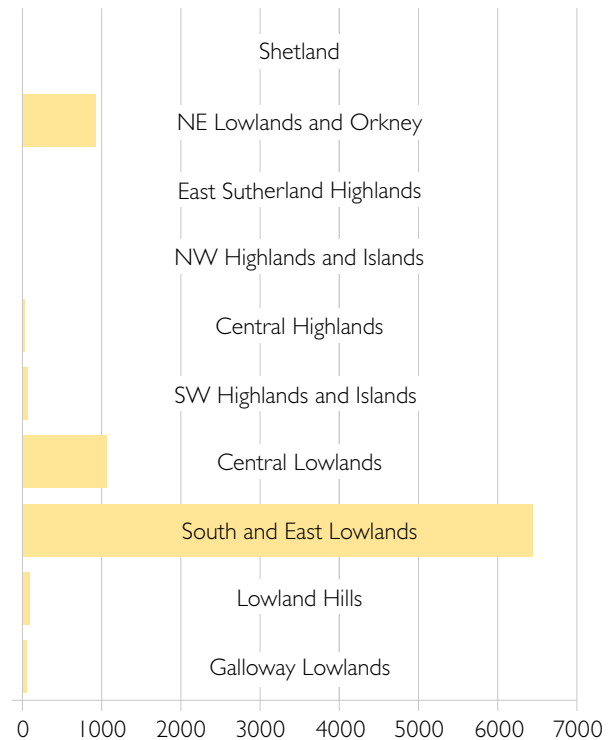
that are most often visible as rig in areas of rough grazing. This distinctive S-shape is also preserved in the street patterns to the north of the fields in this area. Suburban relics of Reverse-S-shaped Fields may also be seen to the west of St Andrews (Fig 19), while at other burghs the strips may be enclosed and attached to the house plots, as gardens, or chards or paddocks, and built up over time (eg Abernethy, Fife²⁴). In some cases, however, the pre-Improvement furlongs do not have such a well-defined reverse-S-shaped form, for example, at Easter Langhill, Falkirk,²⁵ where the fields retain the form of strips, but the reverse-S wiggle has been straightened. Upland relics also occur where the boundaries of outfield furlongs have been enclosed and have then been abandoned to rough grazing (eg Kirk Hill, Liddesdale, Roxburgh; Chapter One, Fig 32).²⁶

Fig 20 Land use and regional distribution. GV006912.

- Medieval/Post-medieval Reverse-S-shaped Fields 7.68%
- Cultivated Former Parkland 3.72%
- Urban Area 1.68%
- Others, less than 1%: Holdings, Planned Rectilinear Fields and Farms, Crofting Township, Rough Grazing, Golf Course, Plantation, Airfield, Designed Landscape, Industrial-scale Farming Unit, Industrial or Commercial Area, Medieval/Post-medieval Curvilinear-shaped Fields, Cemetery, Recreation Area, Opencast Site, Smallholdings, Managed Woodland



Current Land-use Type of land that has been interpreted as Medieval/Post-medieval Reverse-S-shaped Fields and Ridge and Furrow – Cropmark



Area (ha) – by region – of land that has been interpreted as Medieval/Post-medieval Reverse-S-shaped Fields and Ridge and Furrow – Cropmark

Medieval/Post-medieval Curvilinear-shaped Fields and 18th–19th Century Sub-rectangular Fields and Farms

(MAPS 4 & 5 & FIGS 21 & 23)

Deviation from the Norm: Irregular Fields by Piers Dixon

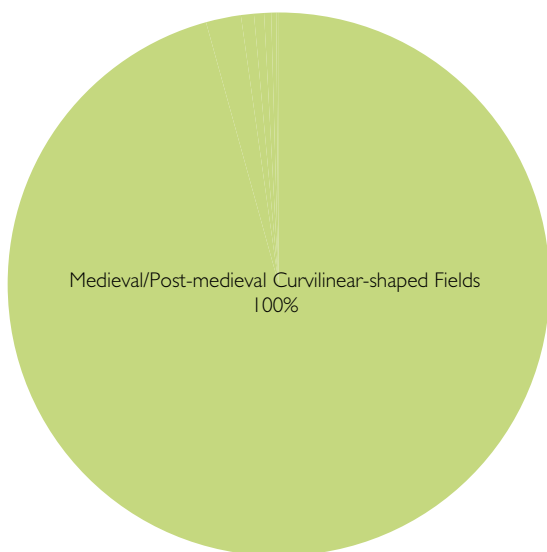
Improved fields with curving boundaries are found where there was a desire for rounded, more aesthetically pleasing boundaries to the policy woods of designed landscapes – evoking a ‘naturalistic’ landscape (see below – Designed Landscape). However, where the expense of straightening pre-improvement head dykes was economically prohibitive, relict field boundaries can be found, forming the HLA Type Curvilinear Fields.

Curvilinear edges to policies can occur wherever designed landscapes are found, whereas fields that have changed little since before the agricultural improvements of the last 250 years may be found along the fringes of the Southern Uplands and Highlands

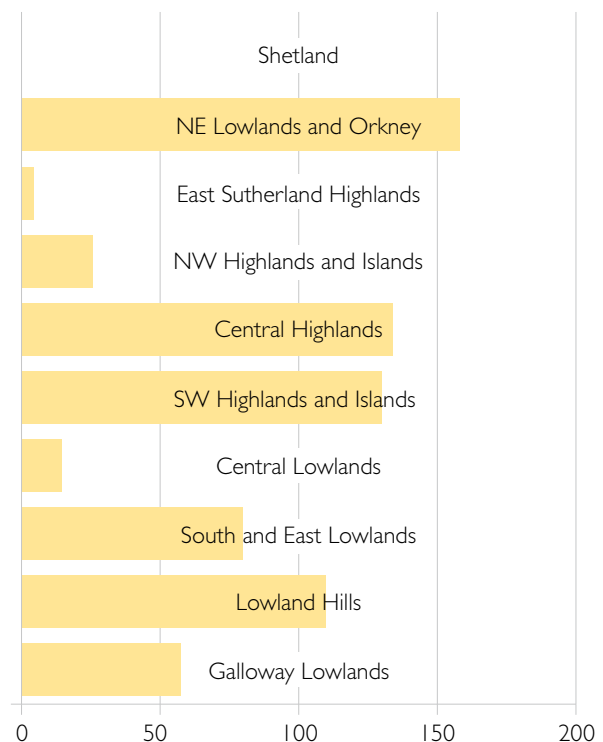
wherever there is farmland of marginal value. It is evident from the first-edition Ordnance Survey maps that these fields were surrounded by rough grazing. Internally they may have straight boundaries sub-dividing them, but externally the irregular boundaries of the head dykes have been maintained into the modern era. They are interpreted as fossils of post-medieval cultivation. Indeed, sometimes the earthen head dykes of the pre-improvements fields can still be traced. However, the improvements have also led to the fences of many fields being straightened, reducing the numbers of survivals (Fig 22). Completely abandoned fields with curvilinear head dykes are a common feature of Medieval/Post-medieval Agriculture and Settlement areas, especially in Galloway and the west (Chapter One, Fig 41).²⁷

18th–19th Century Sub-rectangular Fields and Farms have a very distinct distribution. They are found in lowland Galloway and rarely at all outwith that area. The reason is simple. This type of field boundary has a field shape that is in opposition to the ideology of the agricultural improvers that fields should be squared in order to achieve greater efficiency of cultivation and productivity.

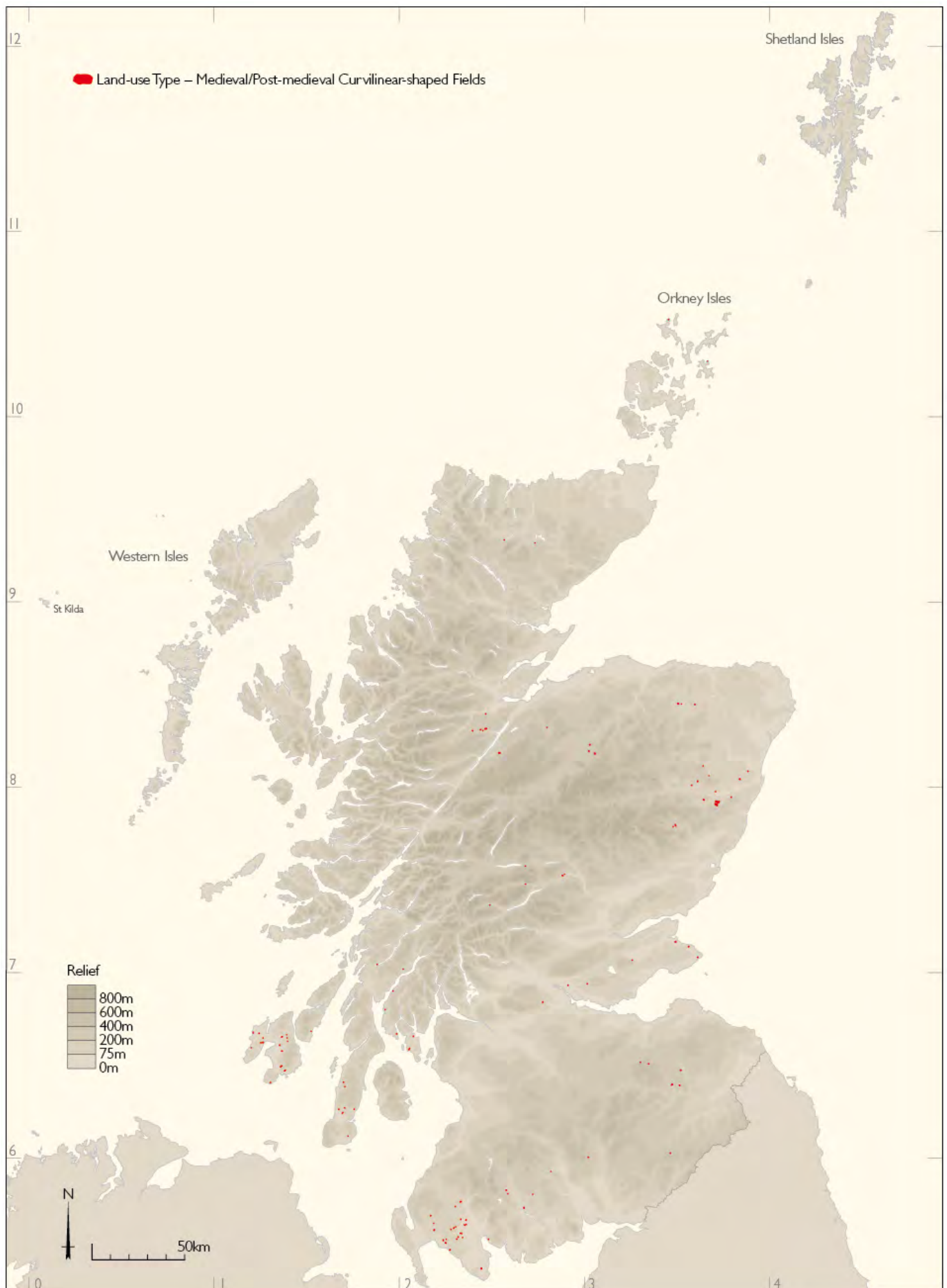
Fig 21 Land use and regional distribution. GV006913.



Current Land-use Type of land that has been interpreted as Medieval/Post-medieval Curvilinear-shaped Fields



Area (ha) – by region – of land that has been interpreted as Medieval/Post-medieval Curvilinear-shaped Fields

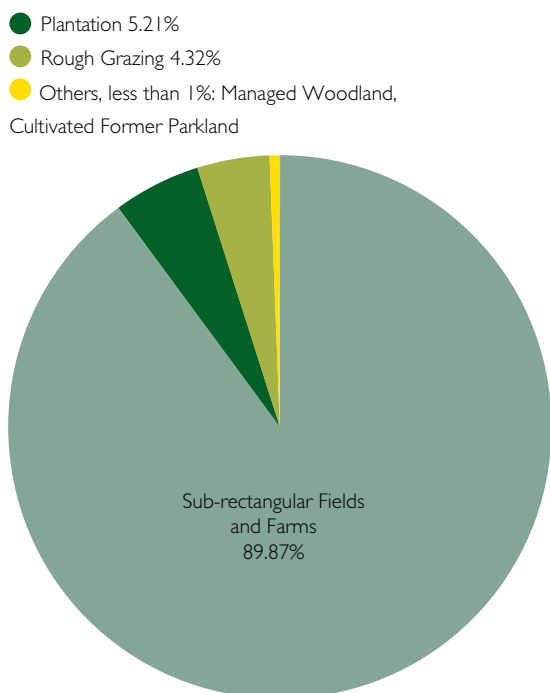


Map 4 The distribution of Medieval/Post-medieval Curvilinear-shaped Fields shows an upland edge distribution and cluster in the Galloway Lowlands and Kincardineshire in the north-east Lowlands, but also in the south-west Highlands. GVO06858.

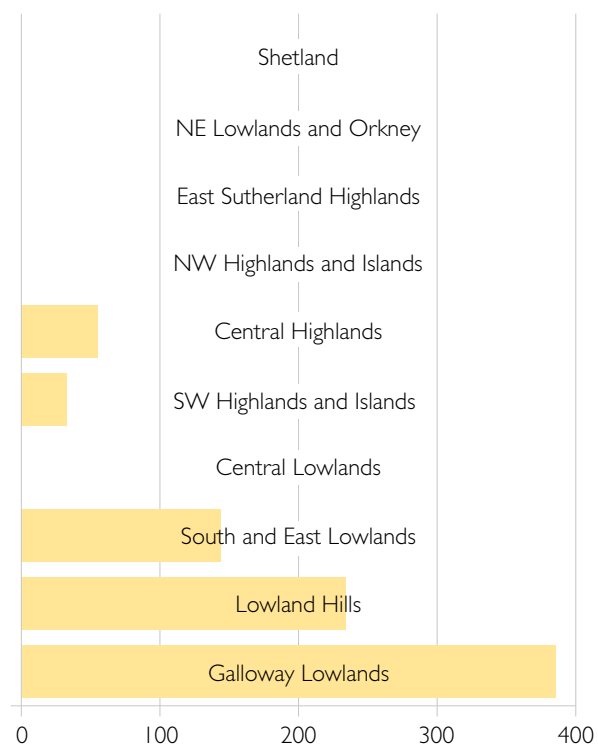


Fig 22 Curvilinear Fields on the left of the steading and Sub-rectangular Fields to the right, where most of the dykes have been rebuilt and straightened, at Craigbirnoch Farm, Galloway. DP105939.

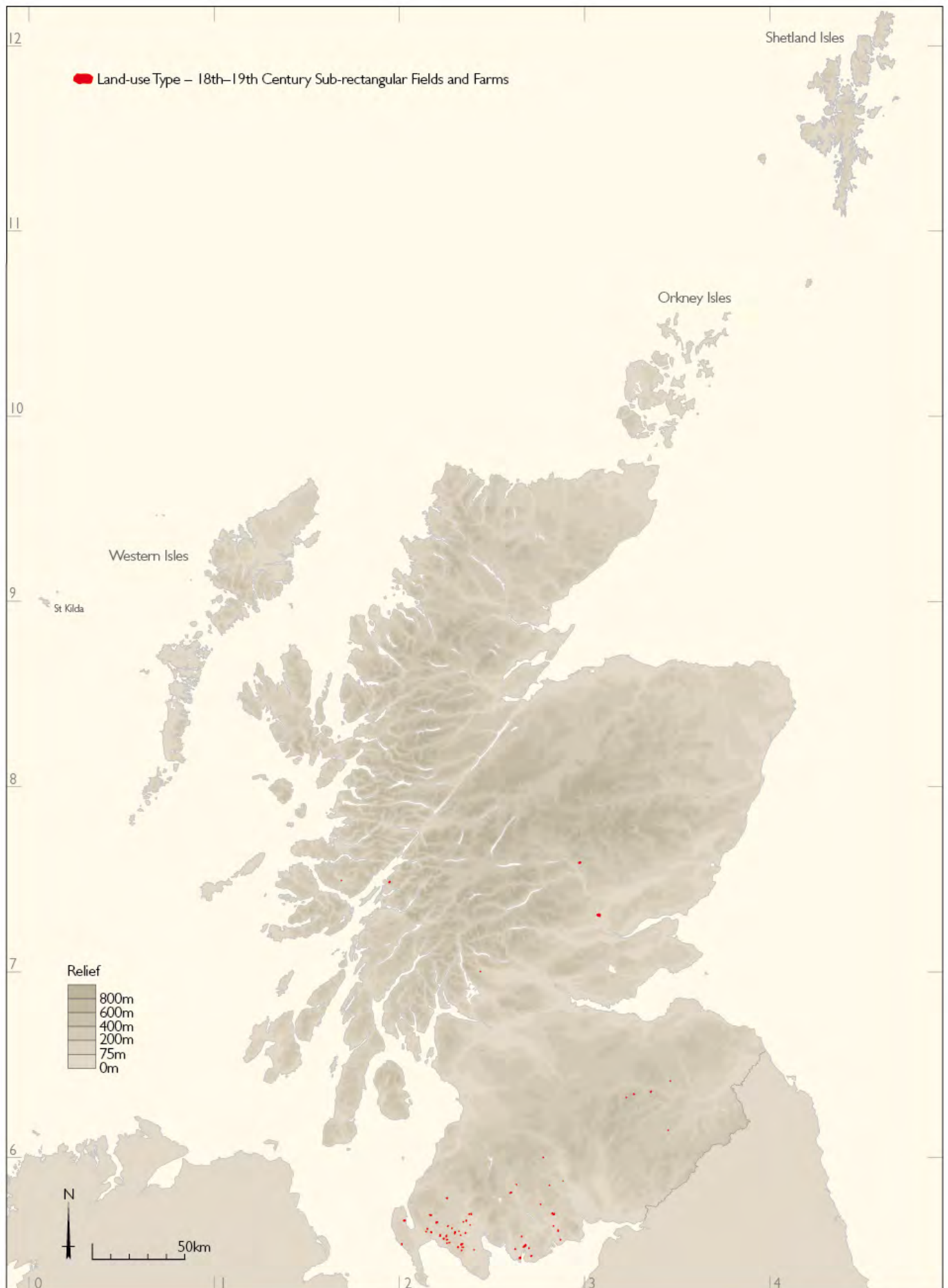
Fig 23 Land use and regional distribution. GV006914.



Current Land-use Type of land that has been interpreted as 18th–19th Century Sub-rectangular Fields and Farms



Area (ha) – by region – of land that has been interpreted as 18th–19th Century Sub-rectangular Fields and Farms



The sub-rectangular fields of Galloway are anomalous because of the constraints of a glacial landscape of drumlins that makes for uneven topography. This geographic feature of the landscape makes a physical impact on the evolution of land use, forcing agricultural improvers into accommodating the field boundaries to the uneven land form (Fig 24). This happens where the wet ground restricts agricultural

use to land that is dry enough to be cultivated on the hummocks, avoiding the boggy ground in between, or where the outcrops of igneous rock force an irregular course on the dyke builders. These are improvement period fields despite their plan form, with modern fences or stone dykes. This dating is most clearly evident from the first-edition OS maps, which show that these fields did not exist in the mid-19th century.



Fig 24 Sub-rectangular Fields at Dunrod, Kirkcudbrightshire, overlying Medieval/Post-medieval Ridge and Furrow. SC911944.

17th–20th Century Designed Landscapes and 19th Century–Present Cultivated Former Parkland

(MAP 6 & FIG 28)

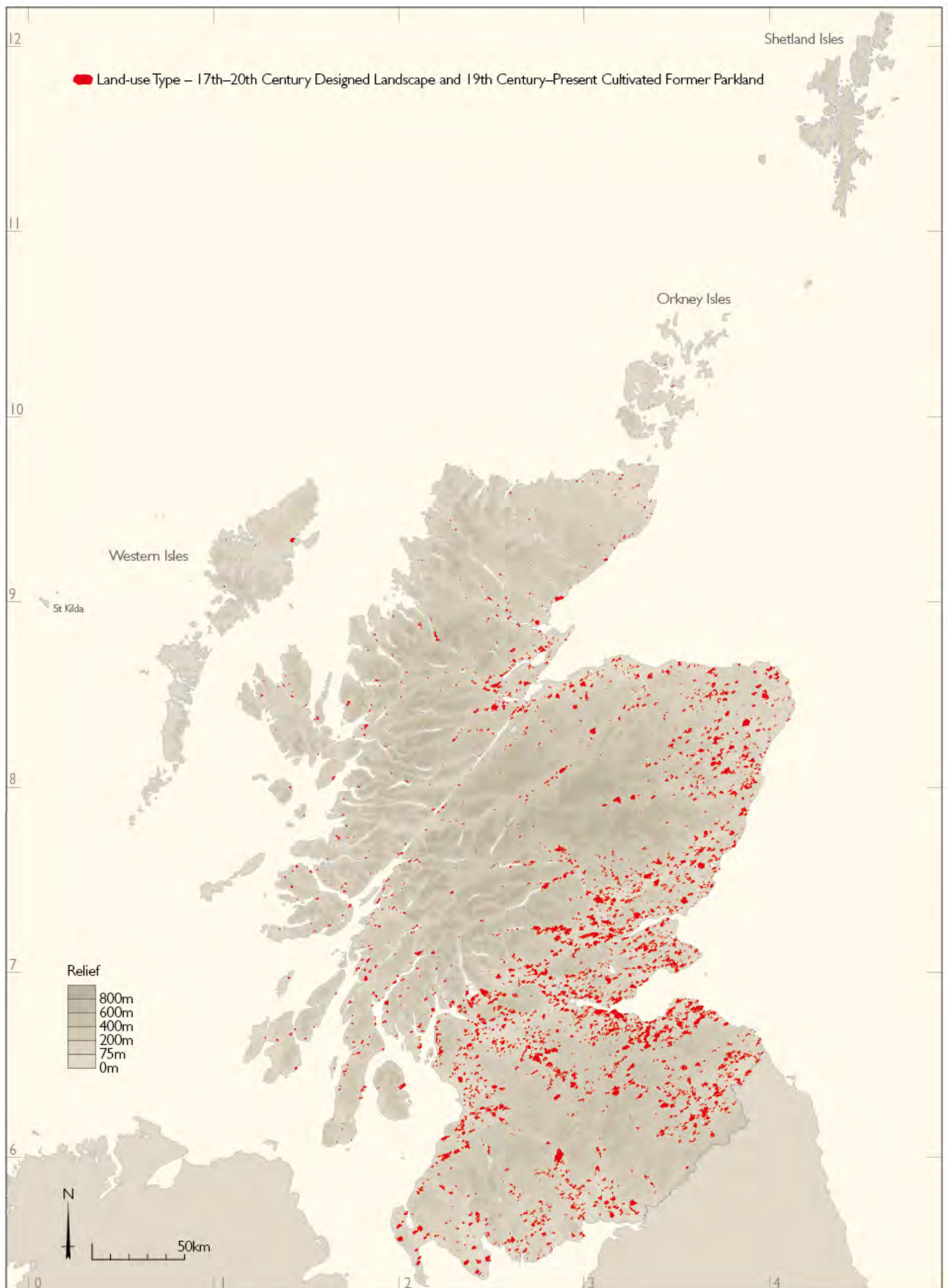
Designed landscapes: Gardening on the Grand Scale by Clare Sorensen

Gardens and Designed Landscapes are often bracketed together, as they are closely connected historically, and in many ways designed landscapes may be seen as gardening on a grand scale. Designed landscapes have been recorded throughout Scotland, but they are mainly found in lowland areas, being rare and on a smaller scale on the Northern and Western Isles. Because of the limited size of medieval gardens, it is the more extensive designed landscapes from the 17th century onwards that have been mapped in HLA, extending to over 1 percent of the Scottish land mass if former parkland that has been converted to arable is included.

However, the expansion of gardens into the wider policies began in the 16th century and reflected changing taste and wealth. The favoured designs were formal schemes, mostly inspired by the gardens of continental Europe, with symmetry and straight lines. Formal small-scale planting near the house now opened out into the wider landscape. Geometrical patterns of avenues, such as the ‘patte d’oie’, or goose foot, of three avenues fanning out from a single point, created vistas, often terminating with man-made or altered natural structures including lakes, mounds, sculptures or even buildings. Distant unconnected structures within the far landscape could be ‘eye catchers’ or focal points. Evidence of such formal landscapes in Scotland can still be seen on the ground, from archival records and from the air as cropmarks and parchmarks (Fig 25).

Fig 25 Parchmarks revealing the formal gardens at Glamis Castle, Angus and the present avenues of trees. SC516722.





Map 6 Distribution of Designed Landscape areas and Cultivated Former Parkland showing a distinct lowland bias with occasional highland outliers along the Straths of the Tay, Dee and Spey. GV006860.



Fig 26 Ossian's Hall, The Hermitage, Dunkeld, Perthshire, a faux-naturalistic landscape. SC1036411.

In the mid-18th century there was a change in the taste for landscapes in favour of the 'style Anglais', made famous by practitioners such as Lancelot 'Capability' Brown. Parterres and formal avenues were replaced by undulating grassland, artificially enlarged lakes and deliberately placed tree groupings in what was a carefully designed idealised pastoral landscape, inspired in part by neo-classical landscape painters. Straight avenues might become serpentine drives, theatrically winding through the trees. During the

later 18th and early 19th century, the Picturesque and Romantic movements encouraged the incorporation of natural 'wild' features into the designed landscape, such as waterfalls, rivers and rock formations. Often now co-existing alongside an extensive pastoral landscape, areas of formal 'wilderness' where paths through densely planted trees provided a little of the fear and excitement also present in the romantic literature of the period (eg The Hermitage, Ossian's Hall, Dunkeld, built by the fourth Duke of Atholl; Fig 26).



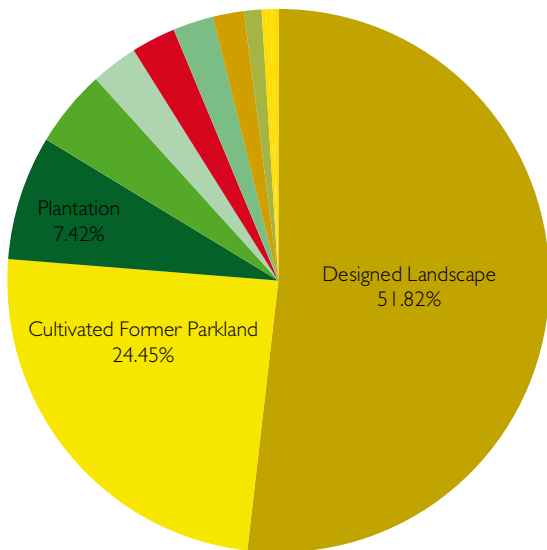
Fig 27 Drummond Castle, Perthshire, formal gardens, avenues and parkland typical of late 17th and early 18th century designs, brought up to date with exotic species in the 19th century. DP237655.

By the mid-19th century, formality in the landscape reappeared with gardens beside the house and the wider designed landscape beyond. Formal avenues again became popular, in some cases using imported trees as at Drummond Castle, Perthshire (Fig 27). Planting of arboreta and specimen exotics was at its height in the 19th century, reflecting the Victorian thirst for exploration, and many of these trees still survive into the modern landscape, if no longer in their original context.

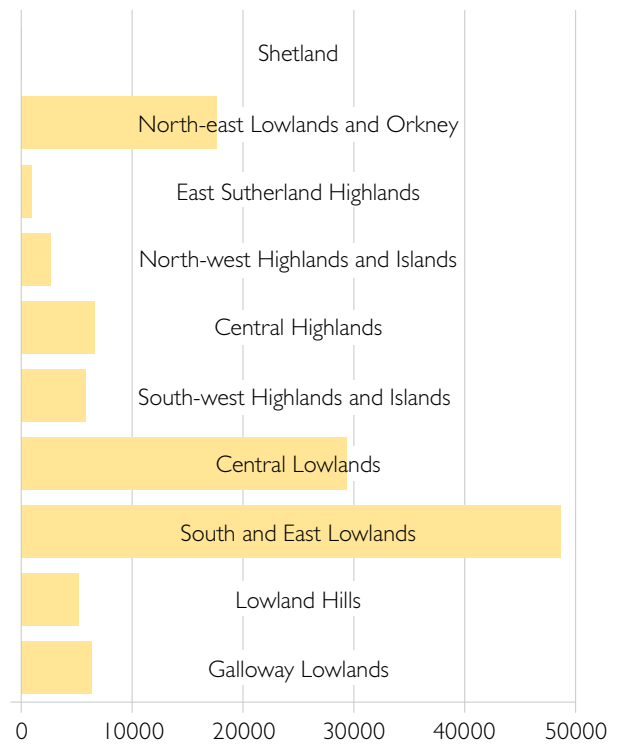
The large scale of some designed landscapes has meant that in the 20th century many have become divorced from the house, which itself may or may not still stand. Many others have been wholly or partially lost to urban growth, or given over to farmland (Chapter Four, Fig 5), forestry or other cultivation. Some are used for other forms of recreation, including as golf courses, but evidence from tree planting and water features show their different origin.²⁸

Fig 28 Land use and regional distribution. GVO06915.

- Managed Woodland 4.59%
- Recreation Area 2.81%
- Urban Area 2.63%
- Golf Course 2.43%
- Country Park 1.85%
- Rough Grazing 1.02%
- Others, less than 1%: Industrial or Commercial Area, Holdings, Rectilinear Fields and Farms, Military Site, Industrial-scale Farming Unit, Planned Rectilinear Fields and Farms, Cemetery, Quarry, Monastery or Cathedral, Reservoir, Restored Agricultural Land, Georgian New Town, Opencast Site, Smallholdings, Summer Huts, Airfield, Ski Area, Power Generation



Current Land-use Type of land that has been interpreted as 17th–20th Century Designed Landscape and 19th Century–Present Cultivated Former Parkland



Area (ha) – by region – of land that has been interpreted as 17th–20th Century Designed Landscape and 19th Century–Present Cultivated Former Parkland

18th Century–Present Rectilinear Fields and Farms and Planned Rectilinear Fields and Farms

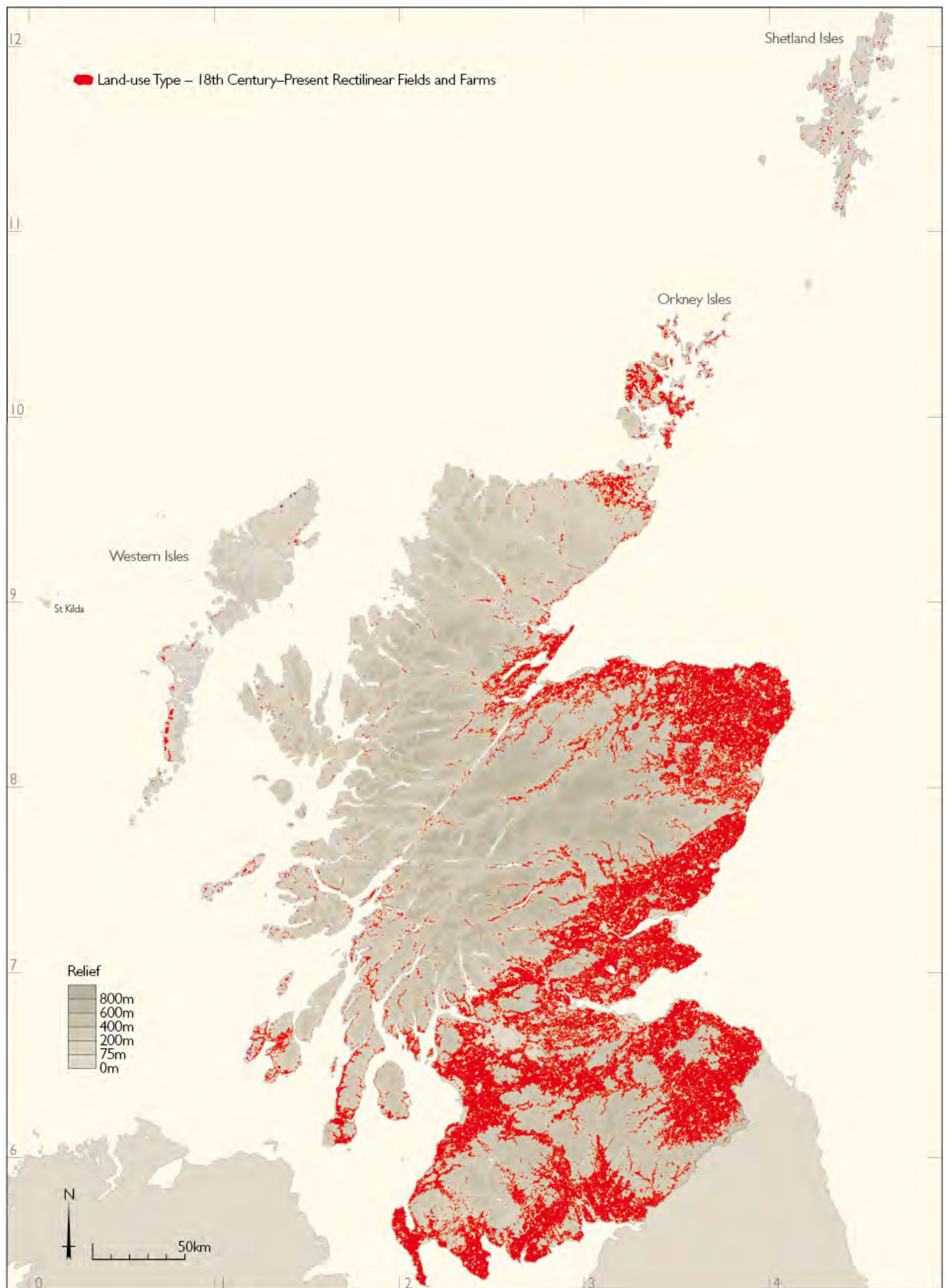
(MAPS 7 & 8 & FIGS 29 & 31)

Improvement Fields by Richard Craig

About a quarter of Scotland is under cultivation when taking into account all land uses which involve some type of farming, like smallholdings or cultivated former parkland (see above). The most extensive of these Types is Rectilinear Fields and Farms, which accounts for about 23 percent of land. Rectilinear fields became widespread from the end of the 18th century as agricultural improvements caused a move away from a common field system of irregular-shaped and often small strips of land to larger enclosed fields with straight-edged boundaries (Fig 30). Post-medieval agriculture, prior to this development, was operated through a system of communal farmers, each having a portion of the infields and outfields. The peasant farmer grew crops on the infield and used the outfield for grazing animals and occasional cultivation. The improvers realised that large enclosed fields cultivated by a single farmer would increase output, which would allow the excess produce to be sold at markets and would make farming more profitable. Improved farming methods included the introduction of new crops and crop rotations on enclosed farms. One of the most important technical improvements was the development of the plough. Rigs were invariably curved with the use of the old Scotch plough. However, newer, lighter swing ploughs that could be drawn by a small team of

horses could turn in a small space at the end of a rig, thus maintaining the rig in a straight line. This made it efficient to plough fields with squared boundaries. There are instances, usually on hilly ground, where straight rig from the Improvement Period survives with no evidence of enclosure, suggesting that this ground was only cultivated for a short time and permanent fences were never built.

Estate owners would pay for the changes, particularly enclosures, and often new farm houses and outbuildings were built as part of the plan. These buildings were usually constructed to a homogeneous design of the time, and some are architecturally significant in their own right. The planting of hedges or building of stone dykes as external and internal boundaries was a key element for any improved farm. In some cases, especially in south-east Scotland, enclosure started with the farm boundary, which could have the effect of maintaining the irregular limits of the farm, especially where roads or natural features formed the limits. Latterly the farms were sub-divided into smaller fields with straight edges. In the north-east, an alternative approach was common, where the whole farm was laid out with fields on a co-axial plan of similar size and with parallel edges (Fig 32). These are categorised as Planned Fields and Farms and cover about 1 percent of Scotland. The more organic process in the south-east may be due to different estate policies and to differing economic circumstances. Enclosure in the south and east started in the mid-18th century, whereas in the north-east it was largely an early 19th century development, despite early investors like the Grants of Monymusk, Aberdeenshire.

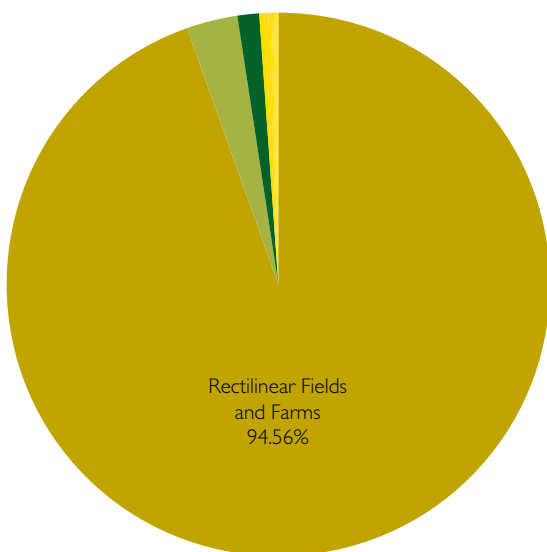


In an example of the enclosure process in south Lanarkshire, the sub-rectangular and curving boundaries of the pre-improvement farms of Woodside, Righead, Underbank and Hillend, near Crossford, which were recorded on 18th century maps, were improved in the late 18th century when the farms were rationalised into neat parcels of land. Woodside remained largely unchanged with its boundaries straightened, whereas the south-west boundary of Underbank was squared off, allowing Hillend to be extended, but Righead was completely lost. The three farms were now of equal size and were subdivided with a pattern of straight sized fields.²⁹

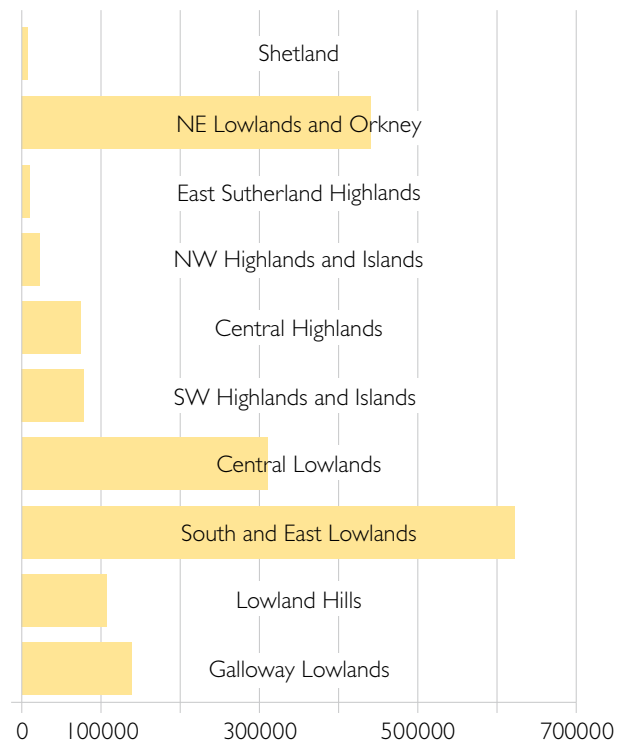
Developments in the production of wire in the mid-19th century meant that post-and-wire fences became a popular alternative to expensive stone dykes and hedges. Hedgerows are consequently less common in the north-east. On the other hand, stone was widely available and sometimes too prevalent, so that not only are stone dykes common, but ‘consumption’ dykes were also built up to clear excess stone from the fields. A further development in field patterns was due to the mechanisation of agriculture after the Second World War and the economies of scale that could be achieved with large fields, leading to the removal of many internal boundaries and the creation of vast ‘prairie’ fields, especially in the drier eastern Lowlands where arable crops are most productive.

Fig 29 Land use and regional distribution. GV006916.

- Rough Grazing 3.03%
- Plantation 1.29%
- Others, less than 1%: Holdings, Urban Area, Golf Course, Smallholdings, Recreation Area, Recent Crofting Township, Military Site, Managed Woodland, Crofters Allotted Cultivation Plots, Industrial or Commercial Area, Industrial-scale Farming Unit, Designed Landscape, Power Generation, Unenclosed Improved Pasture, Crofting Township, Traditional Peat Cutting, Country Park, Opencast Site, Seashore, Reservoir, Cemetery, Planned Village Allotments, Industrial Planned Village, Airfield, Orchard, Cultivated Former Parkland, Restored Agricultural Land, Summer Huts, Quarry, Agricultural Planned Village, Medieval Village



Current Land-use Type of land that has been interpreted as 18th Century–Present Rectilinear Fields and Farms



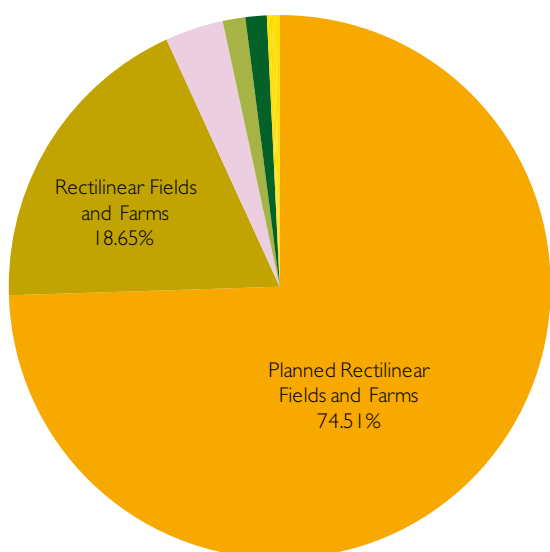
Area (ha) – by region – of land that has been interpreted as 18th Century–Present Rectilinear Fields and Farms



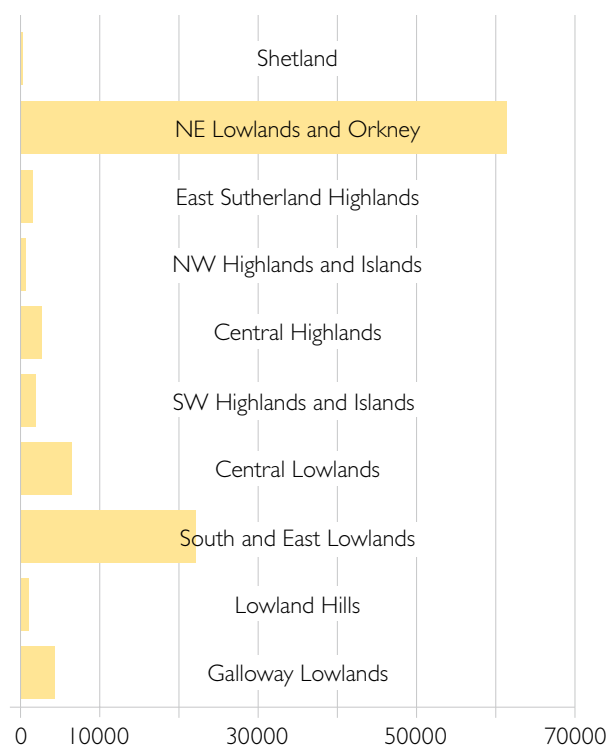
Fig 30 The Rectilinear Fields and Farms around Freuchie Medieval Village, Fife typify the Lowlands, especially the south-east. DP217883.

Fig 31 Land use and regional distribution. GV006917.

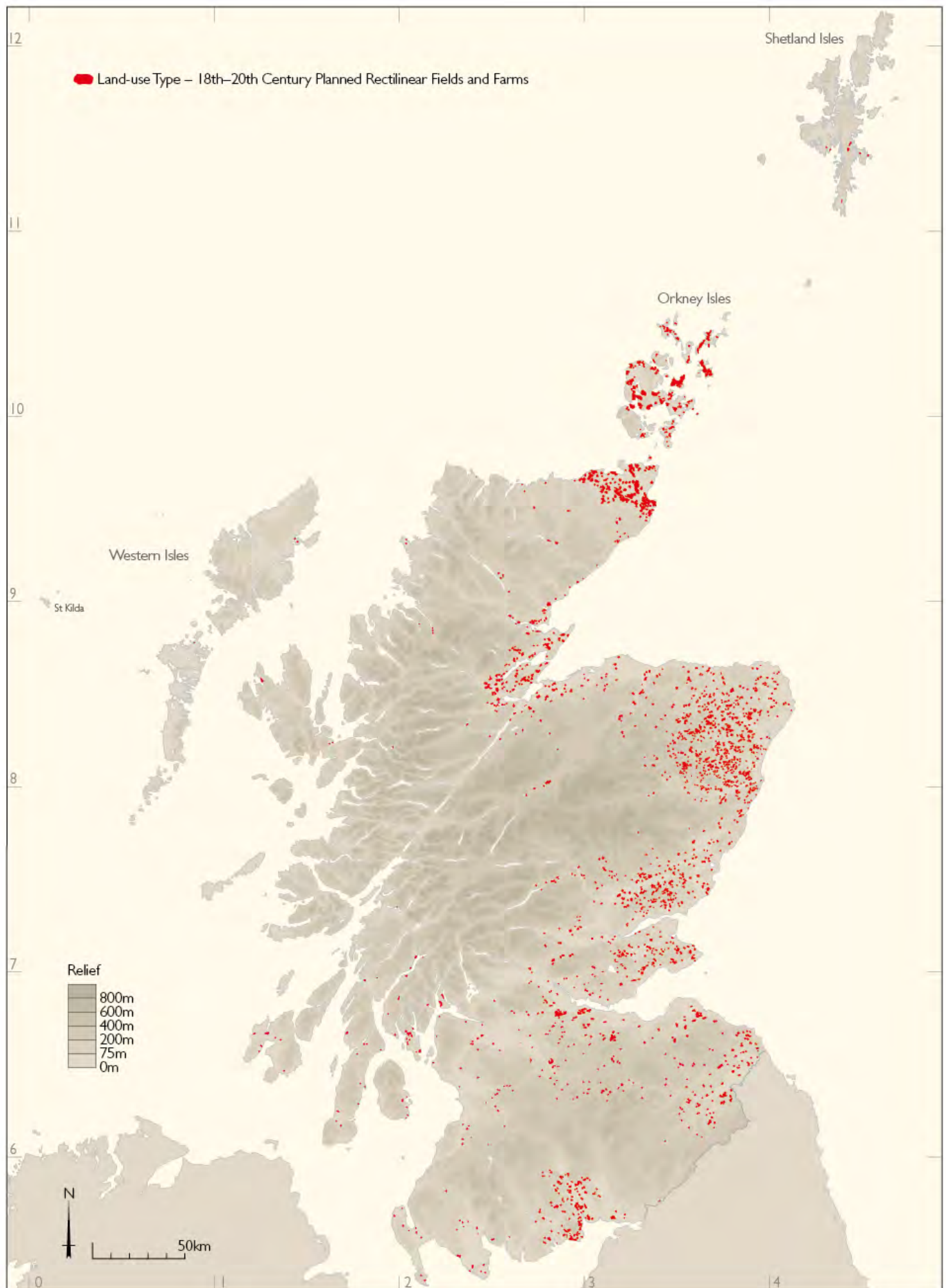
- Holdings 3.46%
- Rough Grazing 1.36%
- Plantation 1.28%
- Others, less than 1%: Golf Course, Smallholdings, Urban Area, Recreation Area, Industrial or Commercial Area, Managed Woodland, Military Site, Planned Village Allotments, Airfield, Cultivated Former Parkland, Designed Landscape, Industrial-scale Farming Unit, Unenclosed Improved Pasture, Restored Agricultural Land, Recent Crofting Township, Cemetery



Current Land-use Type of land that has been interpreted as 18th–20th Century Planned Rectilinear Fields and Farms



Area (ha) – by region – of land that has been interpreted as 18th–20th Century Planned Rectilinear Fields and Farms



Map 8 The distribution of 18th–20th Century Planned Rectilinear Fields and Farms is more densely distributed in the north-east. GVO06862.



Fig 32 Planned Rectilinear Fields around Latheronwheel Home Farm, Caithness. SC1018702.

18th–19th Century Canal Features (MAP 9 & FIG 33)

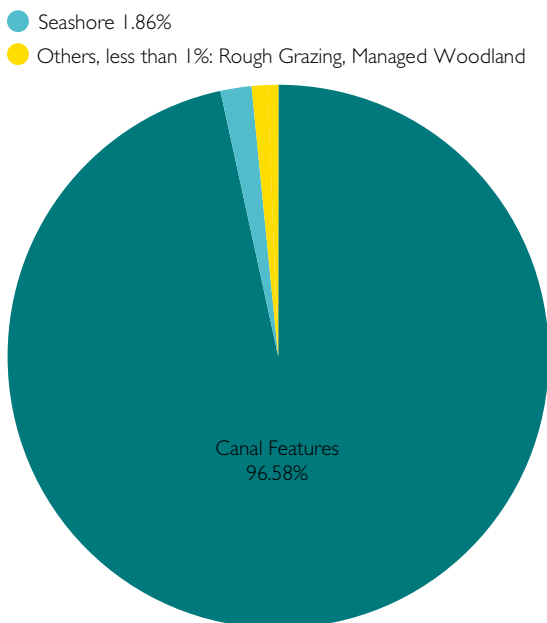
Transport Waterways of the Industrial Revolution by Sine Hood

During the second half of the 18th century plans were begun on five major canal projects in Scotland that were intended as new transportation links to carry various raw materials, such as coal and iron ore, as well as agricultural and commercial products. These faster and safer internal routes were to be an alternative to the lengthy, often dangerous journeys traditionally made by sea. The Forth and Clyde Canal connected the east and west coasts through the growing industrial core of central Scotland. Carrying coal from Lanarkshire into the city of Glasgow, the Monkland Canal was eventually linked to the Forth and Clyde Canal. At 9 miles in length, the Crinan Canal provided an alternative route from Loch Gilp to the west coast and the Hebrides, significantly reducing the journey compared to travelling round

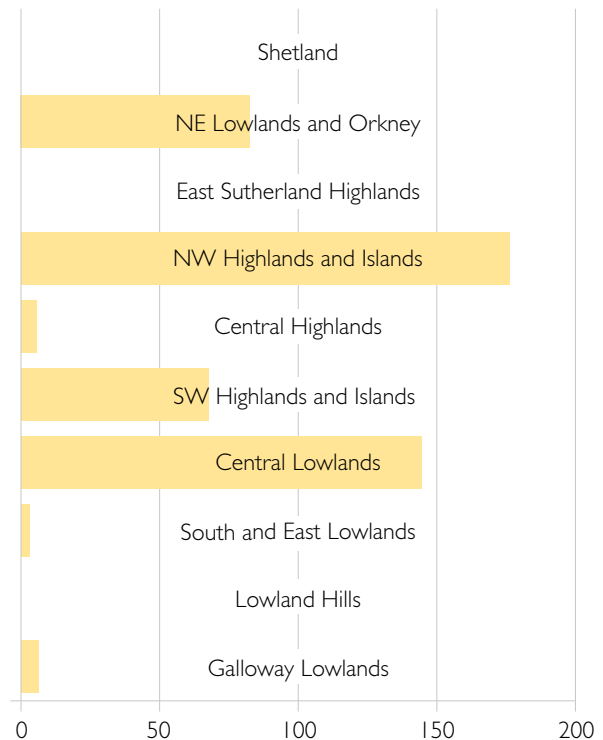
the Mull of Kintyre. The Caledonian Canal was part of the important link between the North Sea and the Atlantic, joining together the lochs of the Great Glen (Fig 34). The Union Canal ran from Edinburgh to the east end of the Forth and Clyde Canal, giving access to the coal from central Scotland.

The creation of these canal networks was not without great difficulty. The engineering undertakings in themselves were vast, involving not just the artificial water channels and lock systems, but also the construction of basins for loading and unloading, and safe harbours. On the Union Canal three aqueducts were built so that the canal remained at a level height throughout its length. Construction costs increased far beyond expectations and meant plans had to be changed or halted, as happened on the Forth and Clyde Canal, where building of the western section was delayed for several years. In addition to these better known, sizeable engineering feats, smaller schemes were carried out to serve local community needs, such as a channelled diversion of the Pefferly River into the Cromarty Firth at Dingwall.

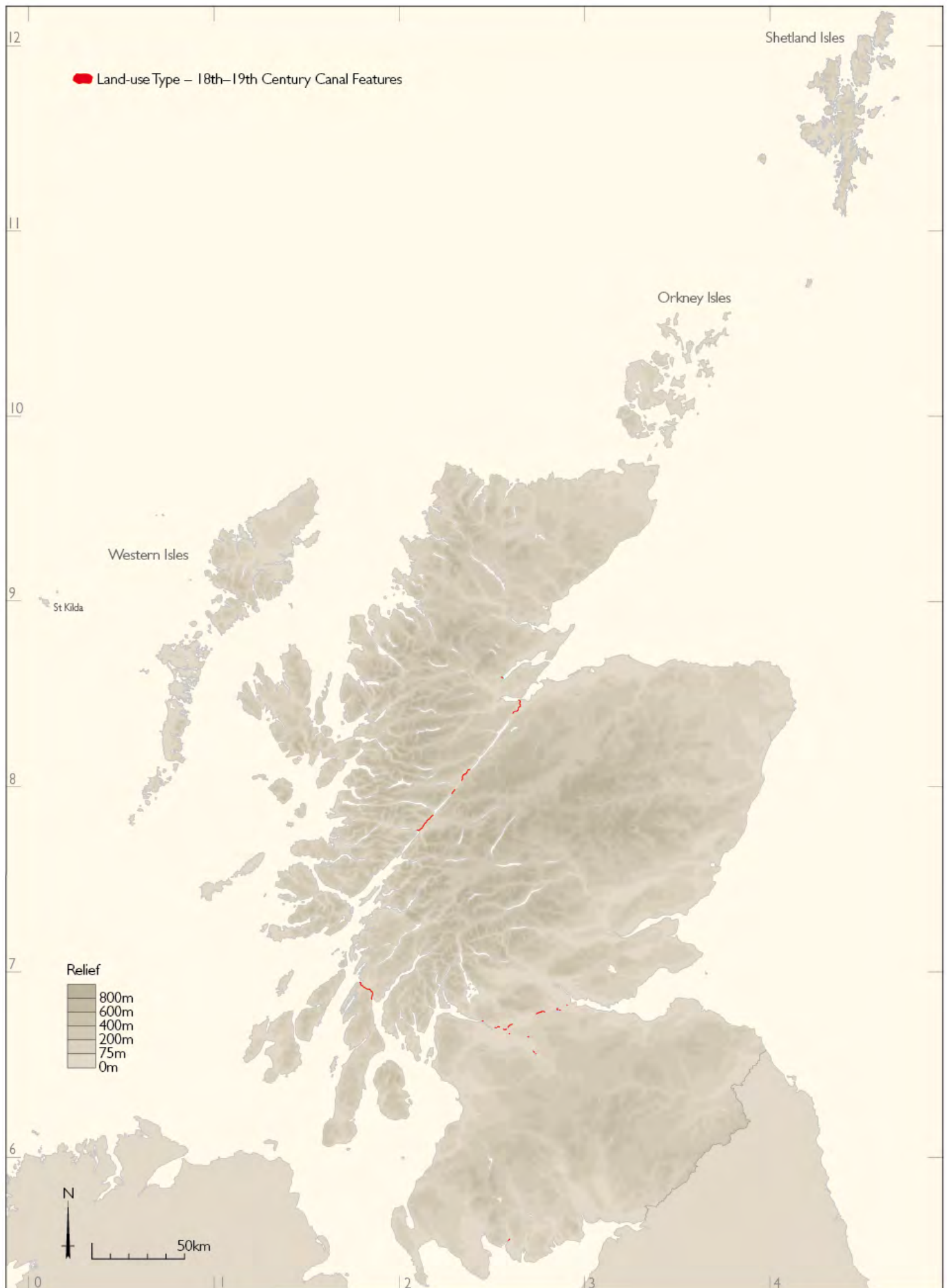
Fig 33 Land use and regional distribution. GV006918.



Current Land-use Type of land that has been interpreted as 18th–19th Century Canal Features



Area (ha) – by region – of land that has been interpreted as 18th–19th Century Canal Features



Map 9 18th–19th Century Canal Features. The Caledonian, Forth-Clyde and Crinan Canals figure the most clearly on the landscape, being still in use. The Union Canal is too narrow to map in HLA. GV006863.

Although initially there were benefits to industry and trade from the canals, the scale of their contribution was not as significant as had been envisioned. The development of the railway network took over the role of speedy and reliable transport during the mid-19th century. But even early on, many of the canals were attractive to the public as travel routes and for pleasure trips, and this continued as their industrial function waned. The full lengths of some of the canals still remain, such as the Caledonian Canal, while some have become curtailed; indeed only fragments of the Monkland Canal survive today. However, where they are still present they stand as evidence of the vibrant industrial development of the age and are proof in themselves of unquestionable engineering achievement. Their continued appeal as a focus for a variety of leisure activities makes an important contribution to tourism, as shown by the millions of visitors to the Falkirk Wheel, which was constructed to re-join the Union and the Forth and Clyde Canals as part of the millennium celebrations.³⁰



Fig 34 Caledonian Canal at Fort Augustus, Inverness-shire, beside the River Oich. Note the locks. DP111927.

18th–19th Century Crofting Townships and Unenclosed Crofters Allotted Plots

(MAP 10 & FIG 36)

Crofting Landscapes of the North-west
by Allan Kilpatrick

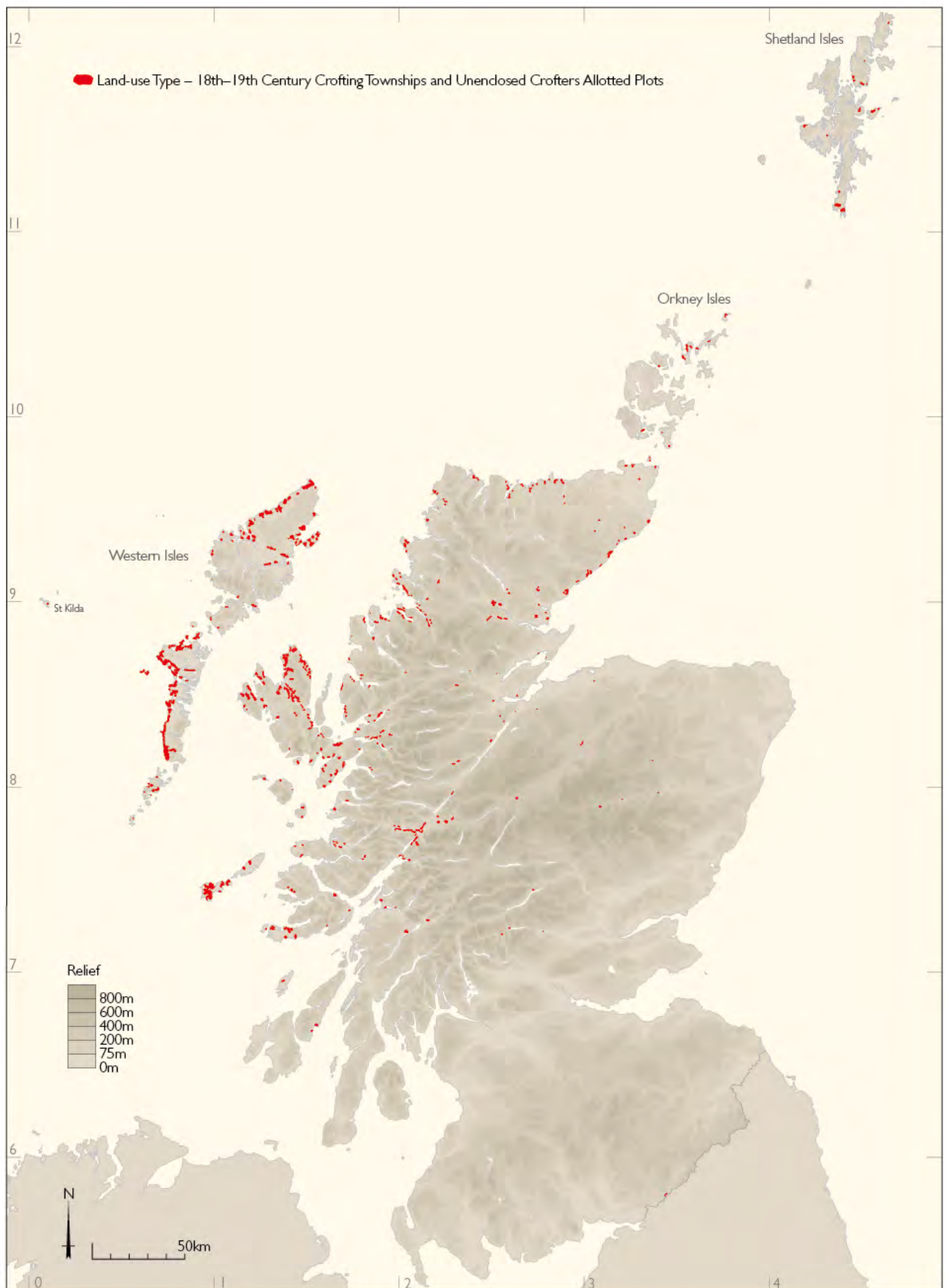
Crofting townships were introduced into the Scottish landscape at the time of the agricultural improvements. At the turn of the 19th century, landowners in the Highlands and Islands believed that moving away from the traditional run-rig agriculture and into a system of small leased crofts that could be worked by a single tenant would increase the amount of productive land. It was also expected that these changes would provide the labour force for other industries, such as kelp. This change meant a rearrangement of the landscape. In many parts of the Highlands landowners considered sheep farming more profitable than the rents from the tenants of the townships, and many glens were cleared of the

inhabitants who, as in Sutherland, were obliged to move to the coast where crofts were made available at places like Helmsdale. Where there was farmland, it was enclosed, creating squared fields for improved production by farmers on the one hand and groups of crofts for the former small tenants and cottagers on the other, as in the Uists. Uniquely here, the crofters were allocated unenclosed strips of machair to cultivate as part of their crofts, although they were detached (Fig 37). At the same time new roads, farm steadings and housing for the crofters were built, often parallel to the road through the crofts.

The result was a particularly distinctive landscape. Across the north and west of the Highlands and the Western Isles the settlements today are based on this pattern of crofts. Most were formed at the behest of the landowner who often provided funds for the improvements. Almost all the crofting schemes reused land previously under cultivation, and expanded the farmland as required. However the best farmland mostly went to new single-tenancy farms.

Fig 35 The Crofting Township at Staffin, Skye, showing the parallel boundaries of the crofts. DP076551.



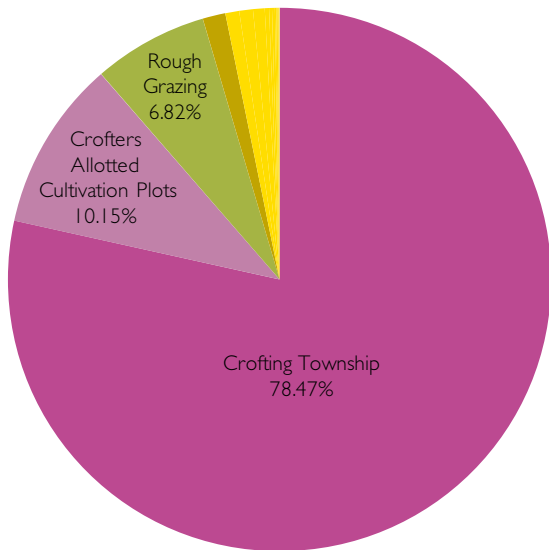


The formal arrangement of crofts is clearly shown during the process of construction on Lewis at Siabost (Shawbost) on the first edition of the OS 6-inch map, an arrangement which replaces an earlier 19th century linear crofting system on a different alignment.³¹ This type of new linear arrangement of housing and strips extending into the infields is not universal (see below – Planned Smallholdings), but most crofting townships conform to this style (Fig 35). Whether the system was advantageous depended on the quality of land that the crofter held. Those on poor ground away from the pre-existing arable land probably struggled and failed to be able to improve their croft.

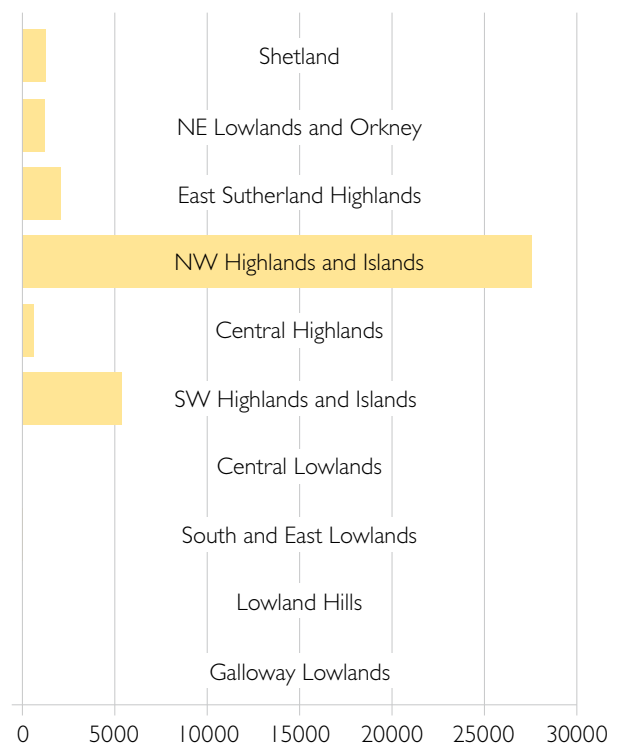
However, a crofter had few or no rights to the land, which in many cases reduced the amount of effort the crofter was willing to put in. The concomitant disquiet across the Highlands and Islands resulted in the creation of the Napier Commission in 1884 to investigate the issues and make recommendations on the crofting system. The result, following the work of the Crofters Commission in 1886, was the Crofters Holdings Act, the granting of security of tenure and a land court, as well as setting down the definitions of crofting and where it was practised, establishing the seven crofting counties of Argyll, Caithness, Inverness, Orkney, Ross and Cromarty, Shetland, and Sutherland, but excluding Moray and Aberdeenshire.

Fig 36 Land use and regional distribution. GV006919.

- Rectilinear Fields and Farms 1.36%
- Others, less than 1%: Urban Area, Plantation, Managed Woodland, Smallholdings, Airfield, Recreation Area, Traditional Peat Cutting, Golf Course, Industrial or Commercial Area, Recent Crofting Township, Unenclosed Improved Pasture, Military Site, Designed Landscape



Current Land-use Type of land that has been interpreted as 18th–19th Century Crofting Townships and Unenclosed Crofters Allotted Plots



Area (ha) – by region – of land that has been interpreted as 18th–19th Century Crofting Townships and Unenclosed Crofters Allotted Plots



Fig 37 The Crofters Allotted Cultivation Plots at Sidhean Bhuirgh, Benbecula, Western Isles are a modern example of unenclosed strips. DP221887.

The distribution of crofting townships is mostly coastal, with only a few examples situated in the straths and glens away from the coast. With a few exceptions they are all found in the crofting counties. Gaps in their distribution can often be explained by either the influence of the landowner or the topography, as in Harris, where the rocky landscape prevented the laying out of the classic crofting township and crofts appear as less regular smallholdings. The best examples of Crofting Townships are found in Lewis, particularly at the very north of the island in Ness

by the Butt of Lewis. Caithness has fewer crofting townships than other crofting counties, but it is a lowland area where improved farms were common. Argyll, though a crofting county, has very few active crofting townships, because of its different estate history under the paternalist Dukes of Argyll. A few crofting townships have been lost, partly due to remoteness and depopulation, and partly due to 20th century changes to ownership. One of the best examples of a deserted crofting township can be seen at Erisco on Skye.³²

18th–19th Century Planned Smallholdings

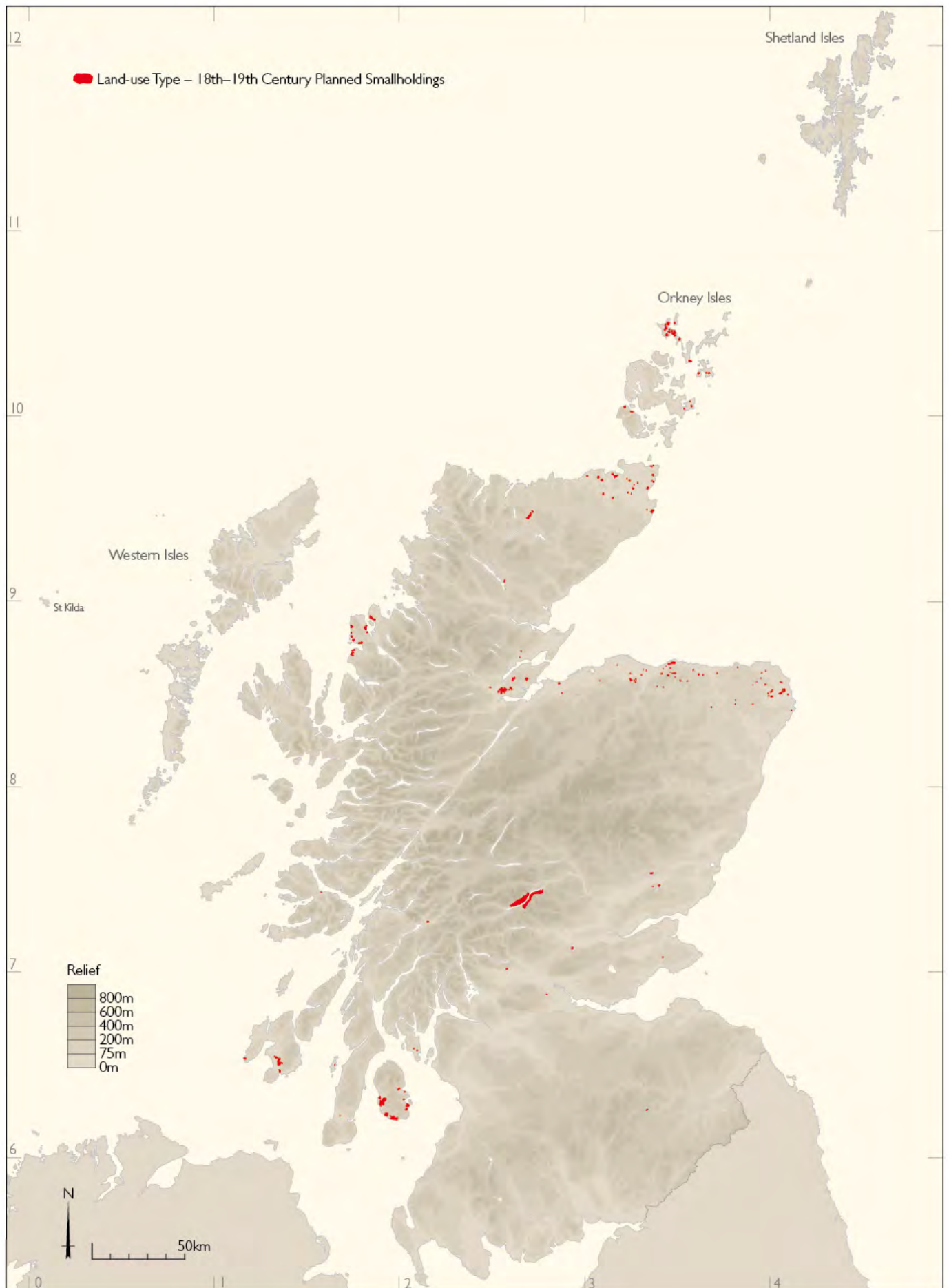
(MAP II & FIG 39)

Planned Smallholdings and Estate Management by Allan Kilpatrick

Planned smallholdings are groups of crofts with similar legal tenure and extent, not unlike Crofting Townships, the difference being the appearance of the landscape in which planned smallholdings are laid out to a set pattern and according to principles laid down by the landowner. It was an expensive approach to landscape change for the landowner, imposing the equal-sized crofts on the landscape, despite the topography and ground conditions. The result is a series of standard-sized square or rectilinear plots, each with a croft house and with roads along the boundaries. The resultant pattern is a dispersed but regimented landscape of small farmsteads, with noticeably more land per croft than is common in Crofting Townships. This may be indicative of the approach of the landowner, who was either enlightened enough to provide enough land for crofters to succeed, or focused on obtaining larger rents.

These smallholdings have been recognised in seven areas of Scotland. In Caithness, along the north coast of Aberdeenshire and Moray, Loch Tay, Wester Ross, the Black Isle, Arran and Islay. Some of the grouping can be explained by the policy of the landowner,

such as at Loch Tay and Wester Ross, where the estate-management policy was to introduce these formal arrangements of crofts. The MacKenzies of Conon and Gairloch, erroneously remembered as an estate that did not clear their lands in Easter Ross, introduced planned smallholdings to their Gairloch estate as part of a move to create sheep farms on the land they cleared. The land was divided into square plots of four and half acres to each croft, replacing the earlier township, and roads were built to allow access and stone walls constructed (Fig 38). The new system often contained land which could not be improved, and OS map evidence suggests that these crofts failed. As the MacKenzies owned land in the east as well as west coasts, an identical form of crofts was found at Balvaird, by Muir of Ord. Balvaird is one of a group of planned smallholdings on the Black Isle, which belonged to a number of different owners. At Loch Tay both the north and south sides were planned and laid out in rectangular smallholdings, typically of 50 acres, and the south side of Arran, part of the Hamilton estates, also had a dense concentration. The group on the north coast of Aberdeenshire are similar to large smallholdings but with the appearance of planning. Those on Arran and Islay were created under the influence of the landowners, with the Islay examples being called lots, some of which failed despite extensive drainage and are still being cut now for peat. Those on Loch Tay are no longer smallholdings, the land having been consolidated into larger farm units. The arrangement of the smallholdings often survives in the field boundaries, but the croft houses have gone.³³



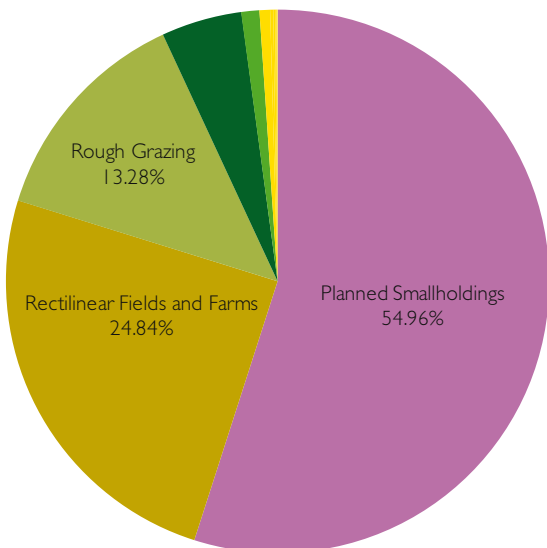
Map 11 The distribution of 18th–19th Century Planned Smallholdings is mainly grouped on particular estates. GVO06865.



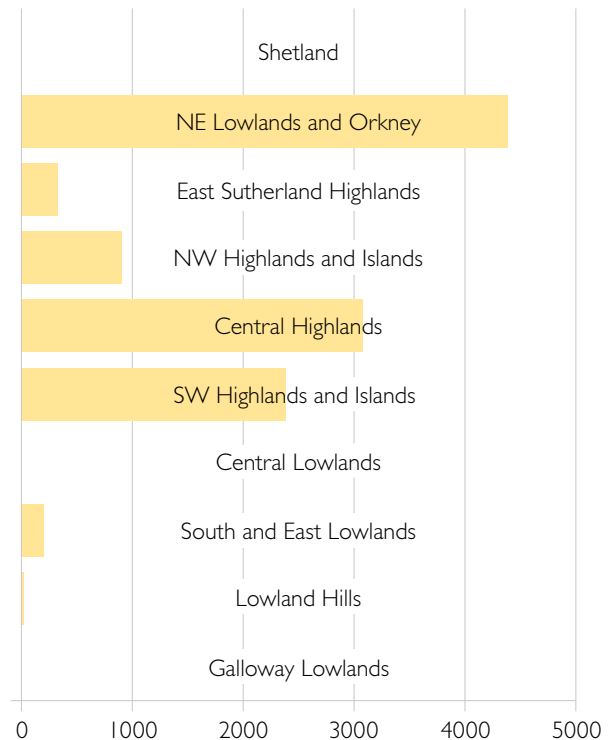
Fig 38 Planned Smallholdings at Big Sand, Gairloch, Highland. DPO74669.

Fig 39 Land use and regional distribution. GVO06920.

- Plantation 4.78%
- Plantation 1.07%
- Others, less than 1%: Holdings, Planned Rectilinear Fields and Farms, Urban Area, Golf Course, Recreation Area, Industrial-scale Farming Unit



Current Land-use Type of land that has been interpreted as 18th–19th Century Planned Smallholdings



Area (ha) – by region – of land that has been interpreted as 18th–19th Century Planned Smallholdings

18th–19th Century Agricultural and Industrial Planned Village and Planned Village Allotments

(MAP 12 & FIG 40)

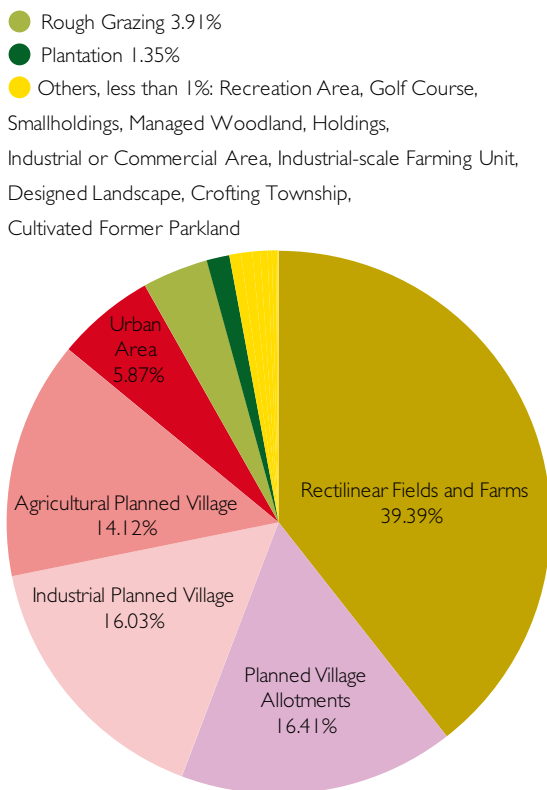
Planting New Settlements by Simon Green

Planned villages are a visible consequence of the clearances and give a strong architectural identity to many modern Scottish urban centres. The most successful of them continued the functions of an established burgh. The town of Inveraray created by the third Duke of Argyll in 1743 is an obvious example. It contained the civic function of the courthouse, commercial premises, hotels and the fine central double church. ‘Some two hundred new towns were founded, sometimes supplanting or supplementing

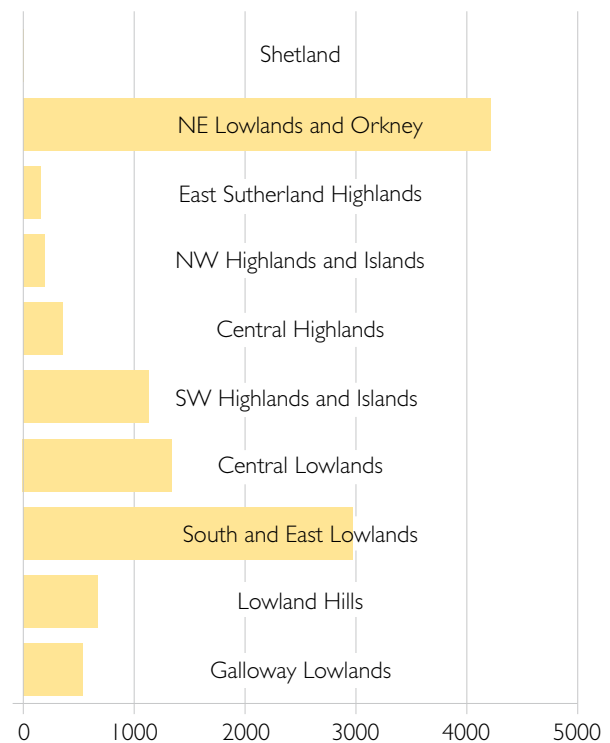
older communities, in the 18th century and the first forty years of the 19th century.’³⁴ These are distributed throughout lowland Scotland, while industrial villages are mainly in the coastal and central belt, one reflecting the fishing industry and the other coal mining and textiles (Fig 8).

The British Fisheries Society, which was responsible for encouraging the development of fishing settlements in the later 18th century, made allotments of land available at the same time. These occur at Ullapool and Tobermory on the west coast, while on the north-east coast these are found in the large maritime settlements at Buckie and Macduff, though others, such as Covesea in Moray, did not include them. The allotments were a key incentive to keep people in an area, whether in the Highlands or Lowlands, as at Archiestown, where the lots were two acres, or Newcastleton, where they were two and a half acres.

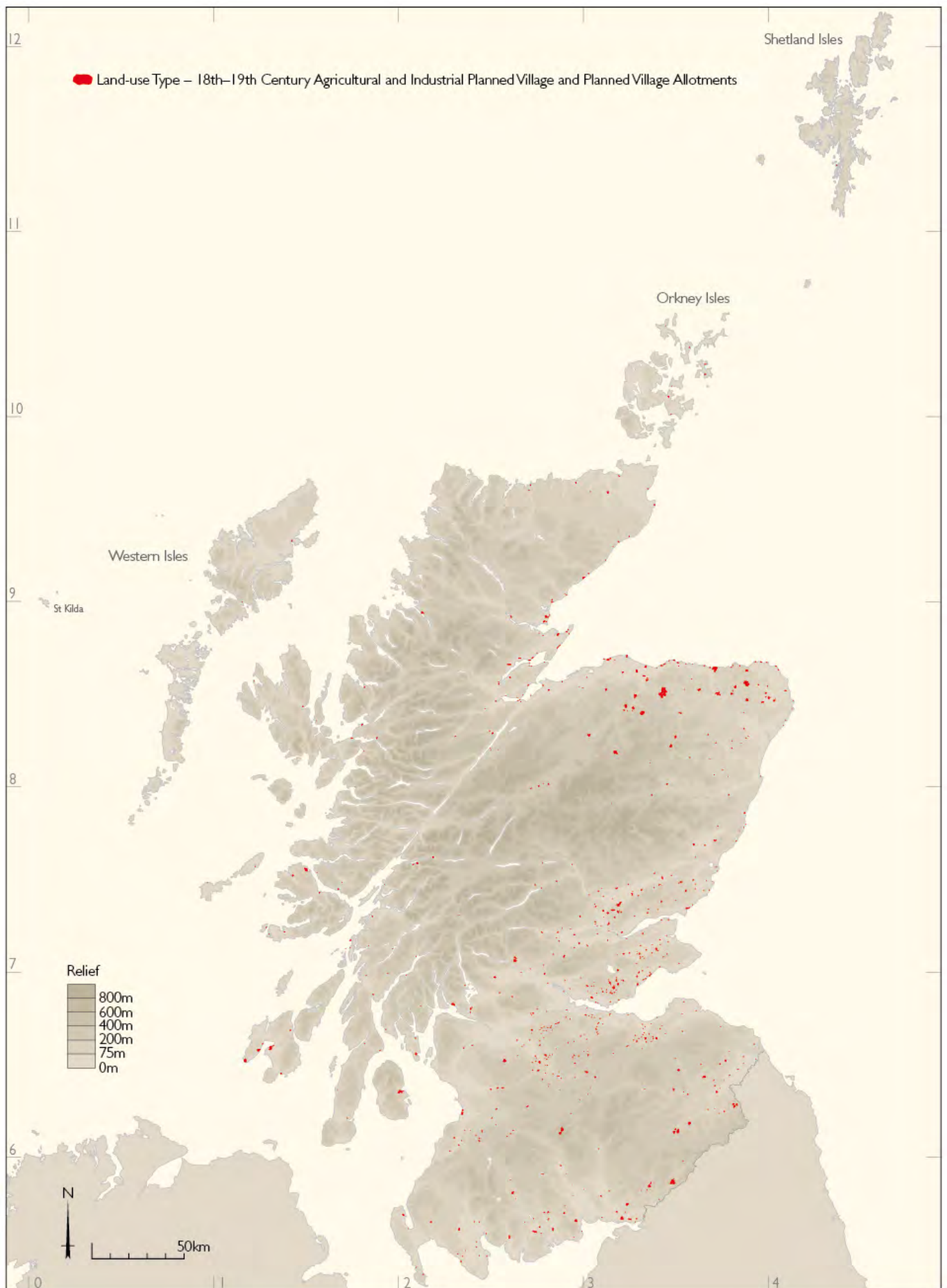
Fig 40 Land use and regional distribution. GVO06921.



Current Land-use Type of land that has been interpreted as 18th–19th Century Agricultural and Industrial Planned Village and Planned Village Allotments



Area (ha) – by region – of land that has been interpreted as 18th–19th Century Agricultural and Industrial Planned Village and Planned Village Allotments



Map 12 Distribution of Planned Village and Allotments. GVO06866.

The Duke of Gordon was a major player in the planning of villages in the Highlands. Kingussie was developed as a commercial venture, creating a new town on a grid pattern that was based on commerce and mills powered by the Gynack Burn. Although not an overwhelming success it prospered with the arrival of the railway and the resulting tourist industry. Its original layout can still be seen, complete with garden grounds and undeveloped plots and feus. Tomintoul was laid out in 1775 on a new site. Its plan is a central square bisected by a main street with back lanes on either side. The central square contains a hotel and other commercial premises while the two churches, one Roman Catholic and one Church of Scotland, occupy sites on the main road diametrically opposed to each other. Tomintoul was designed as a commercial and improvement measure bringing together the disparate functions spread about the area, such as the Inn at Cadelmore, the market from Minmore and the school from Tomachlaggan. It still preserves the narrow 'back ground' strips of the feu allotments that went with the house plots in the village: a common feature of planned villages, typically of 2–4 acres (Fig 41). Fochabers, which was laid out by John Baxter

in 1776, was a grander undertaking, close to the Duke's seat at Gordon Castle. Here the central square is also bisected by the main road, but the Church of Scotland Bellie Parish Church takes the central position on the south-west side of the square, with the Episcopal Gordon Chapel directly opposite.³⁵

In the wider context of planting new settlements as part of the improvements, the Georgian New Town of Edinburgh stands out, the contract for which was won in a competition by James Craig. It was originally intended to be largely residential, with the civic functions of the city remaining in the Old Town, but it altered the focus of the city, becoming the place for the bourgeoisie of the city to live in the 19th century (Fig 11). With its classically derived domestic architecture, broad streets, squares and crescents, it inspired similar developments in Glasgow and Aberdeen, and was in complete contrast to the medieval urban cores of those cities. These are not to be confused with the post-Second World War New Towns like Cumbernauld (Chapter Three, Fig 35), Livingston and East Kilbride, which were designed to take overspill from Glasgow.³⁶



Fig 41 Tomintoul Planned Village and Allotments. SC1012185. © Ian Ralston.

18th–20th Century Managed Woodland and 18th–19th Century Plantation Enclosure

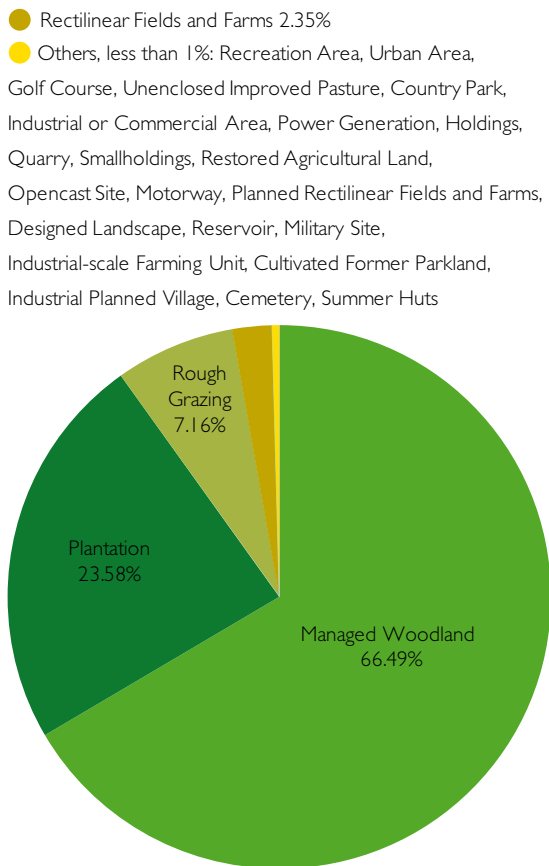
(MAP 13 & FIG 42)

Timber, Bark and Fuel by Sine Hood

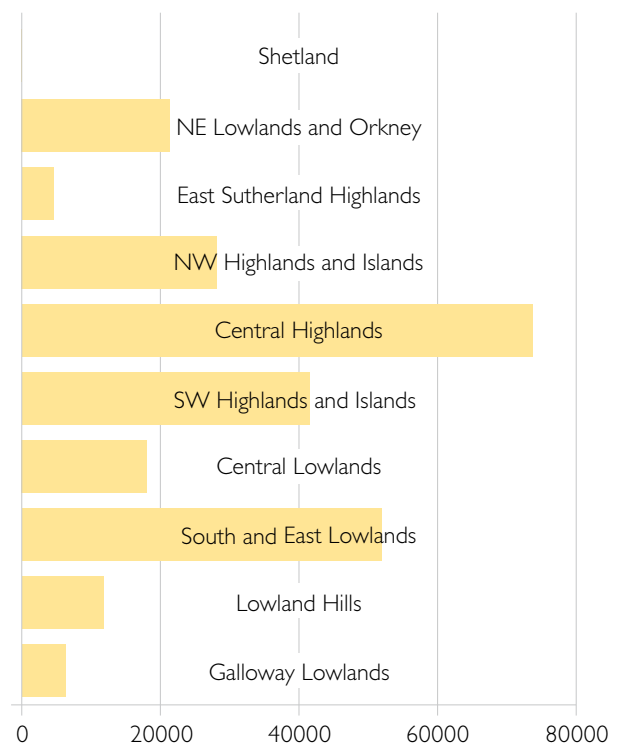
From the earliest times of post-glacial settlement in Scotland, the country’s woodland has provided a vital natural resource to meet a wide variety of basic needs. It was essential as a source of fuel and in the construction of buildings for both domestic and farming purposes. Furniture and many household items, storage containers, farming equipment such as ploughs and carts, and fencing were among the long

list of uses for the wood gathered from the abundant natural stock of trees. However, as the population increased, the requirement for wood also grew and in conjunction with the expansion of clearance for grazing and cultivation across the country, the extent of the woodland coverage inevitably became depleted, even in the prehistoric period. Paleo-environmental data shows that major flood events in the Iron Age exacerbated the effects of grazing and agriculture in southern Scotland, for example,³⁷ while grazing animals also contributed to the reduction of the woodland through their effect on natural re-growth by eating or trampling young saplings. Attempts were made to redress the loss of timber by Act of Parliament in the late medieval period, and there is evidence for monastic estates like Coupar Angus restricting access to enclosed woodland.³⁸

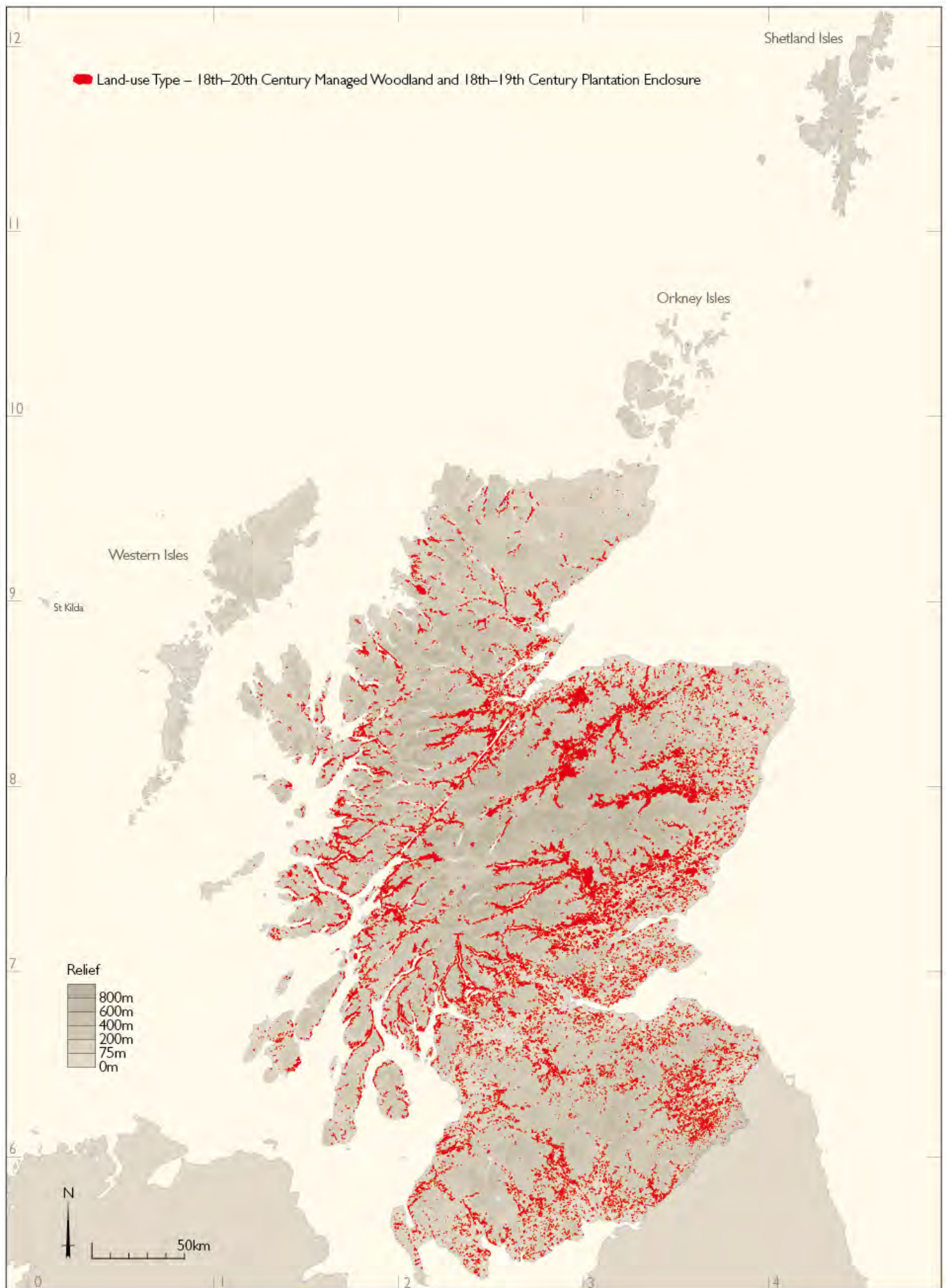
Fig 42 Land use and regional distribution. GV006922.



Current Land-use Type of land that has been interpreted as 18th–20th Century Managed Woodland and 18th–19th Century Plantation Enclosure



Area (ha) – by region – of land that has been interpreted as 18th–20th Century Managed Woodland and 18th–19th Century Plantation Enclosure



Map 13 The distribution of Managed Woodland is a feature of lowland farmland as wind-breaks or along river courses, and in the upland edge, planted on marginal land. GVO06867.

Although there was considerable reduction of the country's woodland, there is little evidence of woodland management until medieval times, and much of this tended to focus on woodland as a crop rather than on any need for preservation or restocking. Coppicing, repeatedly cutting young trees back to ground level in order to force multiple growth, and pollarding, pruning more mature trees higher up to similarly stimulate growth, are ancient practices. Evidence of both can still be seen in some areas of managed woodland today (Figs 43 & 44).

The demand for wood continued to rise as new industrial activities developed and urban populations increased in the post-medieval period. Similarly in rural areas, the importance placed on the expansion of sheep and deer farming led to almost uncurbed grazing, causing a significant impact on natural regeneration. However, deliberate management for the protection and long-term preservation of woodland became an important factor in land management. Many wooded areas were enclosed

to keep grazing animals out, and these dyke and ditch boundaries can still be seen today, often surmounted by modern post-and-wire fencing. It is mainly woodland from this period and later that has been mapped in this assessment, aided by the plantation banks that were mapped by the Ordnance Survey from the 19th century.

In recent times, the natural environment, including woodlands, has become increasingly prized for the contribution it can make to the sense of general well-being, and many visitors make use of the recreational access to such locations as Ariundle Oakwood National Nature Reserve near Strontian, Highland, managed by Scottish Natural Heritage, which is an example of coppiced oak woodland once exploited for charcoal production.³⁹ In addition to this, even small stands of trees are now valued for their contribution to the preservation of the character of local landscapes. Furthermore, the conservation of important wildlife habitats is now often at the heart of woodland management.

Fig 43 Managed oak woodland along the banks of Loch Maree, Highland. There were several furnaces along the loch, exploiting the oak woods for iron production. DP074691.





Fig 44 Coppiced oak woodland and charcoal platform at Fernoch on Loch Awe, Argyll. SC846422.

Within managed woodland, trees are often relatively dispersed, thus making these areas key locations for the survival of past land use. A wide range of archaeological evidence dating from the prehistoric period through to modern times has been recorded within woodland. Remains include rig and enclosures associated with agriculture, remnants of past industrial activity, including charcoal burning (see below – Section Four) and military areas such as camps related to the Second World War.

There are numerous examples of the relict traces of managed woodland that have been recorded, lying in many different land uses, including modern farmland or on open moorland. In some cases the original wood dyke boundaries are still visible, while in others the previous limits shown on historical maps are retained in the present landscape. Where managed woodland occurs within the policies of a country house it is considered in HLA mapping to be part of the designed landscape.

18th Century–Present Traditional Peat Cutting

(MAP 14 & FIG 45)

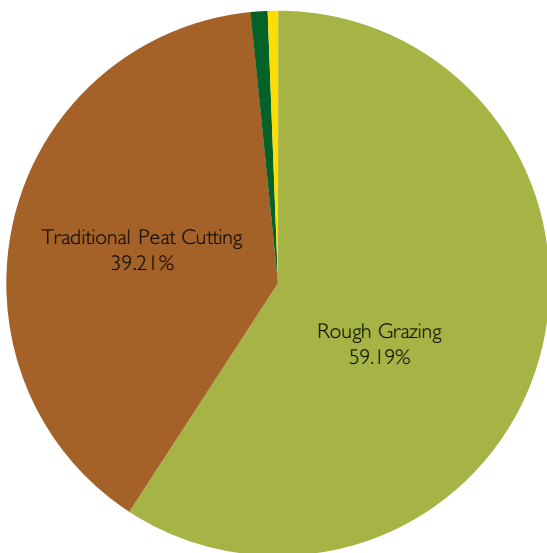
Peat as Fuel by Richard Craig

Peat can be dried and cut for use as fuel for heating, cooking and lighting. It was widely cut throughout Scotland until supplies began to run out in parts of the country at the end of the 18th century. Lowland Scotland had easily sourced supplies of wood and

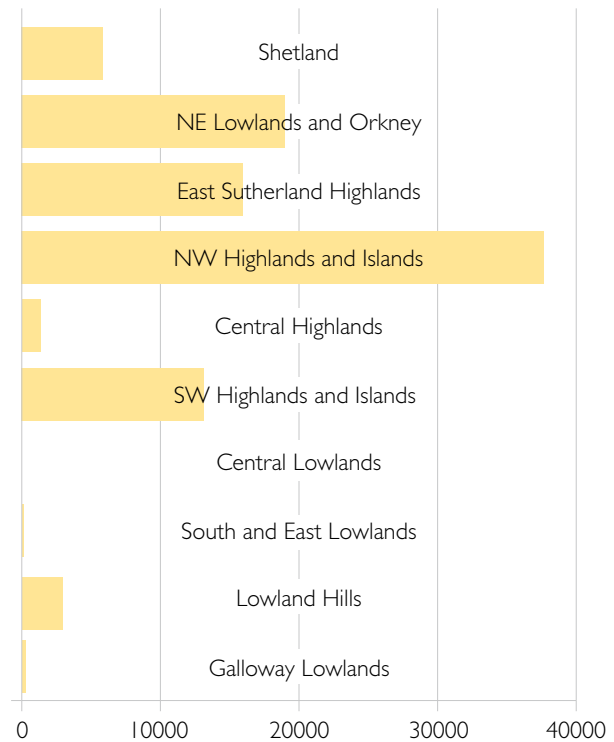
coal which became the fuel of choice for people in this area. Peat was still plentiful in the Highlands and Islands and was cheaper to extract from the ground than transporting coal from other areas of Scotland. Much peat cutting continued throughout the 18th and 19th centuries in these areas and to a lesser extent in the south and east of the country as well, and as much as 0.5 percent of Scotland still shows the traces of peat cuttings. The use of gas and electricity for cooking and heating in the 20th century reduced the demand for peat, though it is still burned on open fires today because it gives a good heat and distinctive smell.

Fig 45 Land use and regional distribution. GV006923.

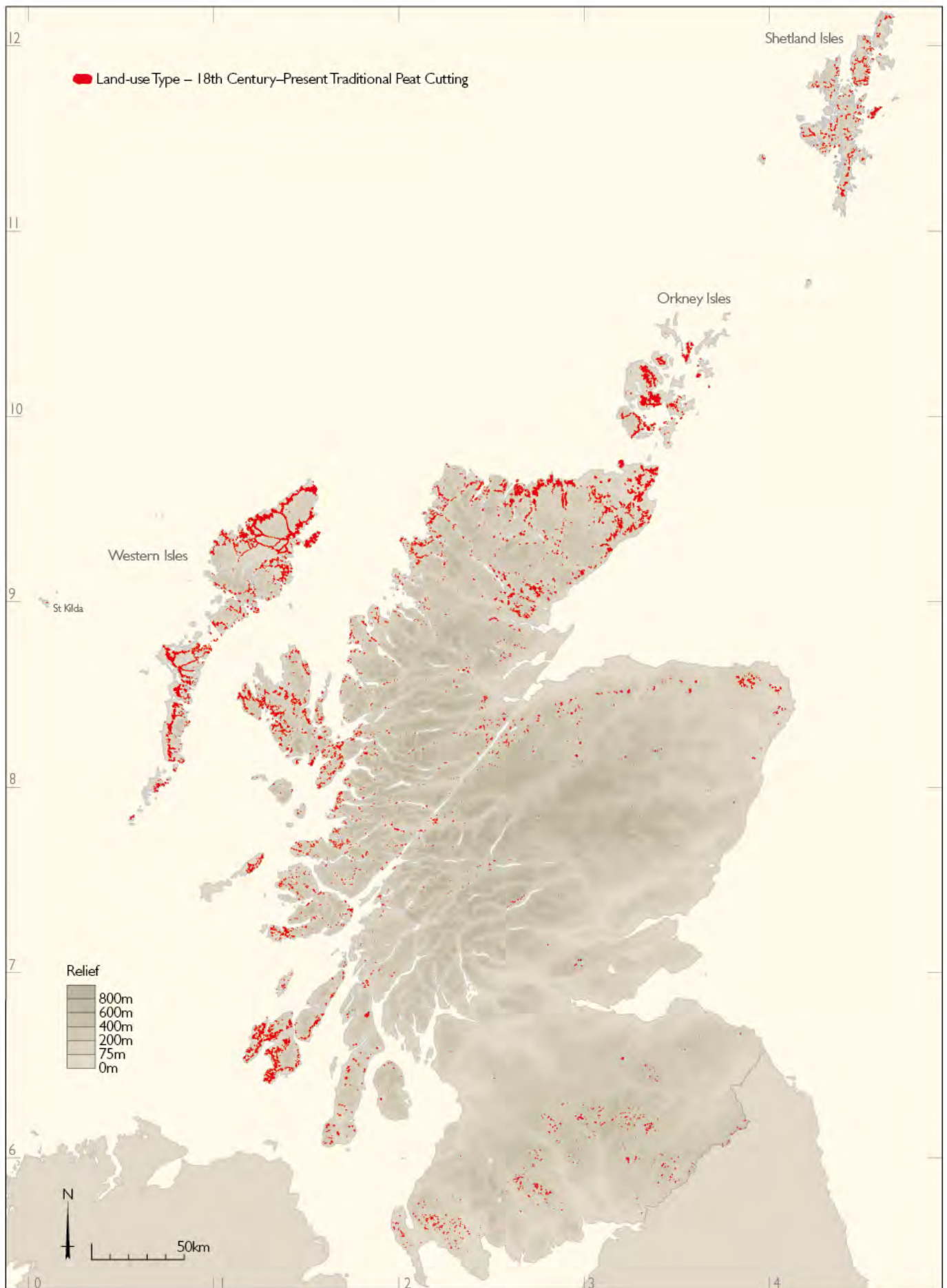
- Plantation 1.01%
- Others, less than 1%: Rectilinear Fields and Farms, Managed Woodland, Golf Course, Crofting Township, Recent Crofting Township, Power Generation, Holdings, Smallholdings, Commercial Peat Extraction, Unenclosed Improved Pasture, Military Site, Airfield, Planned Rectilinear Fields and Farms, Reservoir, Industrial or Commercial Area



Current Land-use Type of land that has been interpreted as 18th Century–Present Traditional Peat Cutting



Area (ha) – by region – of land that has been interpreted as 18th Century–Present Traditional Peat Cutting



Map 14 The distribution of Traditional Peat Cutting is mainly in the crofting areas of the north-west Highlands and Islands. GVO06868.



Fig 46 Peat-cutting banks on the moor of Aird Thunga Crofting Township, Isle of Lewis. SC1007539.

Peat cutting remained popular with crofters in the 20th century and it was not unusual for each croft to be allocated an external peat-cutting ground. The cutting of peat is a labour-intensive task and involved the whole family or a group of people working together. Traditional methods involve digging peat out with specially designed spades. Often there were regional variations in the shape or length of the tools, but their use was dictated by the wetness of the peat ground. Turf would first be stripped back exposing the peat, and the peat would then be cut vertically or horizontally in long blocks that would leave sharp scars in the landscape, often rectangular in shape. Care was taken to ensure that rainwater would drain off the peat ground, as the area could easily become ruined with standing water. Once cut the peat had to be dried and two methods were popular: peat was either laid out in straight lines across the moorland or the blocks would be placed on their end to form pyramid-shaped mounds. Drying was an important stage as wet peat is heavy to transport and would not burn properly. Moving the peat blocks from the

moorland could also be difficult because of the terrain. Traditionally, carts pulled by ponies would be loaded with the blocks, but now wheelbarrows and tractors are used. Sometimes stone peat stances were built by a tenant, on which the peats were temporarily stacked before taking them to the steading, as at Ben Lawers in Perthshire.⁴⁰

Modern peat-cutting grounds are usually fairly easy to spot on aerial photographs because of the rectangular pattern of strips the process leaves. The peat cuttings to the north of the crofting township of Aird Thunga, Western Isles are unmistakable (Fig 46). However these marks can become less apparent once the turf starts to grow back, making it difficult to map from aerial photography. It also makes it impossible to have any confidence that abandoned peat cuttings date to before the modern period. Sometimes meandering tracks ending in rough ground, depicted on Ordnance Survey maps, may indicate peat-cutting grounds of more recent date.⁴¹

18th Century–Present Cemetery

(MAP 15 & FIG 47)

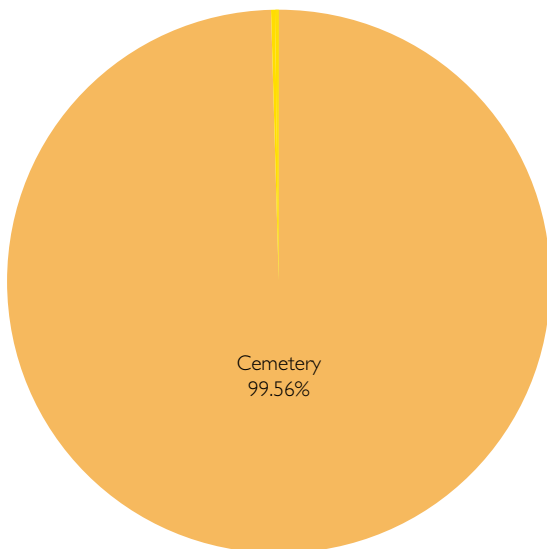
Burial for the Urban Rich and Poor
by Simon Green

Cemeteries are the successor to the graveyards that usually surrounded the parish church. With the explosion of urban populations in the 19th century the existing graveyards could not cope with the demand and cemeteries were developed. A number of companies were set up and acquired suitable areas of land to sell as plots to purchasers who were told that they would be maintained in perpetuity. However, the maintenance of cemeteries had become a problem in the later 20th century, especially where they were no longer receiving burials.

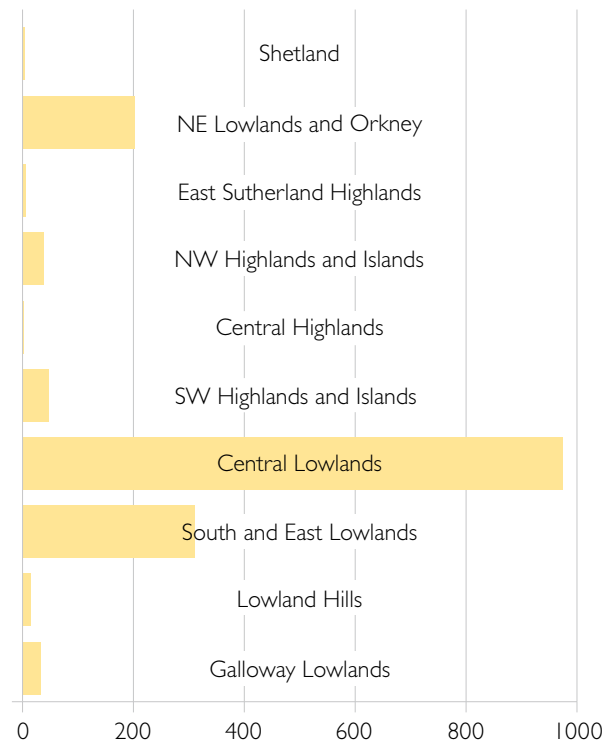
Cemeteries are found in all urban areas of Scotland. A number were originally on the edge of the town but are now subsumed within the suburbs. They are usually marked by stone walls and a formal gateway. They have very distinctive arrangements of paths; more recent ones tend to be laid out in straight rows but earlier ones often have a more picturesque layout, as seen at the Necropolis in Glasgow. Examples created in the 19th century often have a chapel, as at Lanark, and a number contain large grand monuments or mausolea.

Fig 47 Land use and regional distribution. GV006924.

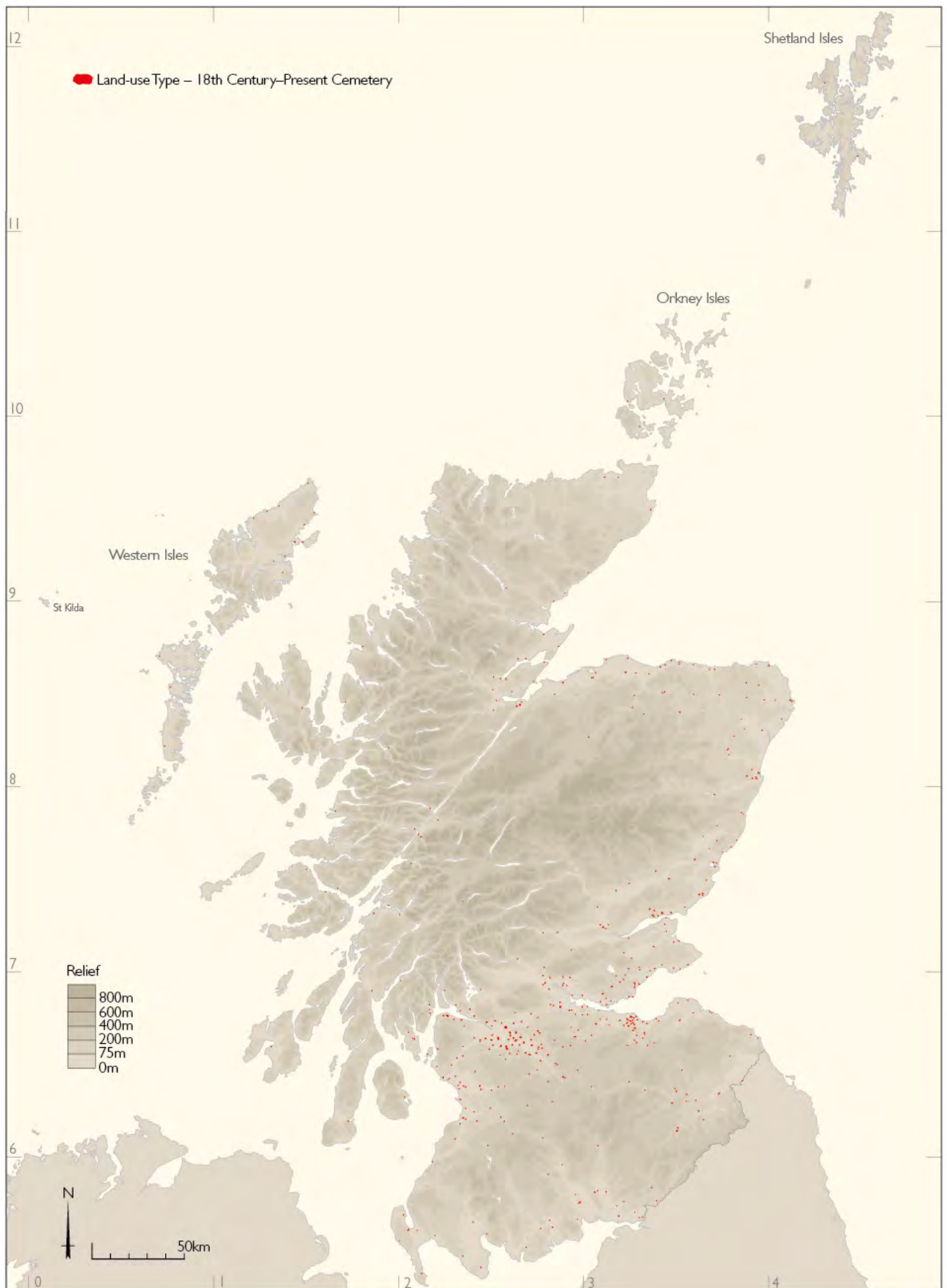
● Others, less than 1%: Rectilinear Fields and Farms, Restored Agricultural Land, Urban Area, Rough Grazing



Current Land-use Type of land that has been interpreted as 18th Century–Present Cemetery



Area (ha) – by region – of land that has been interpreted as 18th Century–Present Cemetery



Map 15 The distribution of cemeteries reflects urban expansion from the mid-19th century. GVO06869.



Fig 48 The 19th century Glasgow Necropolis occupies a hill opposite the Cathedral. SC1023498.

In Glasgow in the 1830s over 5000 people were dying per year, creating a major problem that needed addressing. The Necropolis, set on a hillside overlooking Glasgow Cathedral, opened in 1833 (Fig 48). It was laid out by George Mylne, a landscape gardener and its first superintendent. It has a picturesque relationship to the medieval cathedral, but was a civic rather than ecclesiastical venture. The Glasgow Necropolis was the third hygienic cemetery in Britain after St James's Cemetery in Liverpool of 1829 and Kensal Green in London of 1832. The hygienic or garden cemetery idea was based on a model of Père Lachaise Cemetery in Paris, begun in 1804 to the designs of Alexandre-Theodore Brongniart. A series

of monuments by leading architects reflected the aspirations of 19th century Glasgow.⁴²

In Edinburgh, Warriston Cemetery was created by the Warriston Cemetery Company in 1842 to the designs of David Cousin, city architect. The first interment was in 1843 on the 14-acre site in north Edinburgh. It originally contained a small chapel where services could be held. In 1929 the company converted East Warriston House into a crematorium as fashions and the cost of burial changed. Nearby Dean Cemetery was laid out by David Cousin in the policies of Dean House; taking over the gardens and grounds of a house provided a number of established trees to create a suitable setting.

19th–20th Century Smallholdings

(MAP 16 & FIG 49)

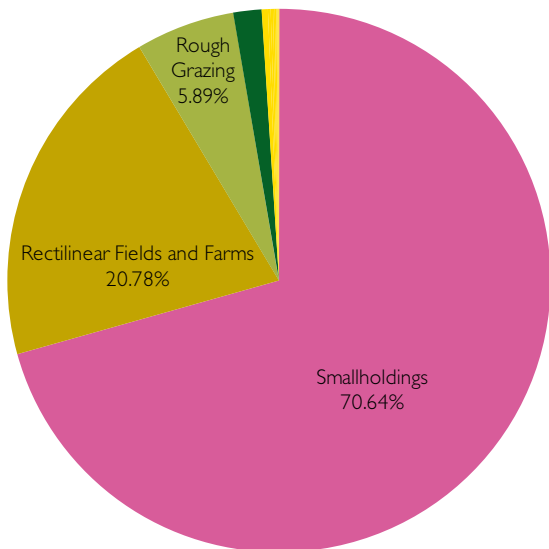
Unplanned Smallholdings by Richard Craig

Smallholdings or crofts are widespread throughout Scotland and groups of them are usually located on the fringe of 19th century farms. Less ordered than the crofting townships of the north-west or the planned smallholdings found on some large estates (Maps 10 and 11), they extend over some 1 percent of Scotland, making a significant impact on the landscape, though they are concentrated in the north-east Lowlands, north-west Highlands and Northern Isles. Crofters played an important part in improving rough ground which could be taken in by a neighbouring farm at a later date. During the agricultural improvement period of the late 18th and early 19th centuries the

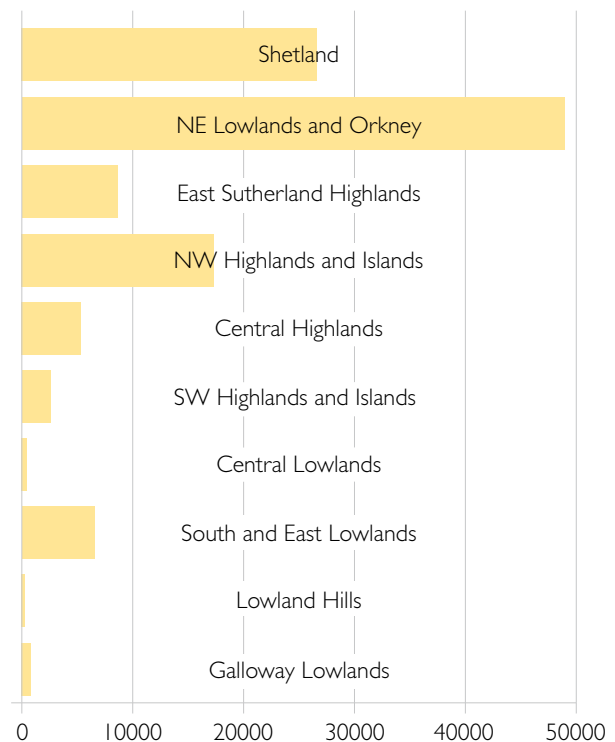
construction of crofts intensified. Each croft consisted of a single-storey cottage sitting in an individual or series of small irregularly shaped fields that could either be farmed or used for grazing animals (Fig 50). Often a group of crofts, called a district, is depicted on historic editions of Ordnance Survey maps, especially in the Northern Isles, where the smallholdings had grown out of the pre-improvement townships. Not all smallholdings conform to this layout, though, and some can have relatively large field systems. Carbost, Skye is identified as a ‘district of cotter’s houses’ in the Ordnance Survey Name Book, but appears on the first-edition map as a cluster of roofed buildings in rough grazing with adjoining rectilinear fields. Without historical documentation these smallholdings would have been hidden within the surrounding pattern of rectilinear fields, since the field pattern had not changed.

Fig 49 Land use and regional distribution. GV006925.

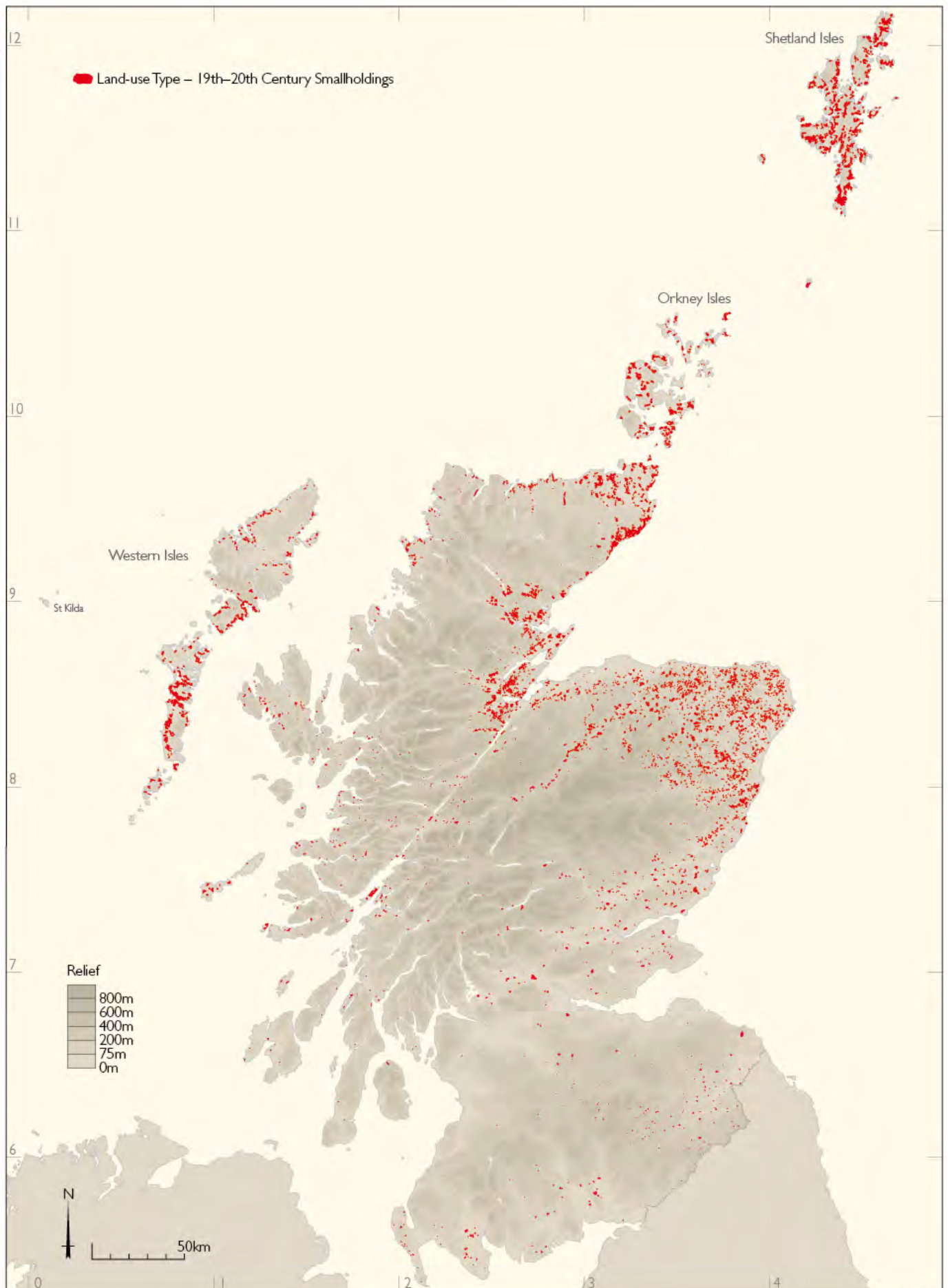
- Plantation 1.67%
- Others, less than 1%: Urban Area, Managed Woodland, Traditional Peat Cutting, Military Site, Recreation Area, Holdings, Industrial-scale Farming Unit, Unenclosed Improved Pasture, Planned Rectilinear Fields and Farms, Industrial or Commercial Area, Recent Crofting Township, Power Generation, Medieval/Post-medieval Reverse-S-shaped Fields, Reservoir, Maritime Installation, Medieval Town



Current Land-use Type of land that has been interpreted as 19th–20th Century Smallholdings



Area (ha) – by region – of land that has been interpreted as 19th–20th Century Smallholdings



Map 16 The distribution of 19th–20th Century Smallholdings. Note the density in the north-east. GV006870.



Fig 50 Scatter of smallholdings and irregular, if rectilinear, fields typify the farming landscape of Orkney; Clouston, Mainland. DP055445.

Aberdeenshire has a strong heritage of smallholdings, called crofts, with the earliest historical reference dating to 1310 when an Aberdeen burgess sold his croft of Spittalhills. Before the agricultural revolution, crofts in the county were usually dependent holdings of a farm, established to support rural industries, such a mill, or to take in new land. They were only occasionally freeholds with independent status, such as the croft of Auchleck granted to James Gordon in 1537.

In the north-east, from Orkney to Kincardineshire, crofts maintained their popularity with landlords during the agricultural improvements of the 19th century as a means of retaining the labour

force and improving rough ground. This has left an unmistakable mark on the landscape, and many crofts still survive with their distinctive field patterns, while others have been incorporated into neighbouring farms. Often the crofter's cottages have been converted into private dwelling houses, or farm outbuildings, but some have fallen into disrepair and remain as ruins. Tomintoul Croft on the outskirts of Braemar, Aberdeenshire has a cottage which exceptionally has survived in its original condition, with built-in box beds and rooms with late 19th century newspaper wall decoration, offering a glimpse of what home life was like for a crofter in the 19th century.⁴³

19th Century–Present Golf Courses

(MAP 17 & FIG 51)

Landscapes of Urban Leisure by Richard Craig

Golf courses are found throughout Scotland, from the coast to the hills. Many of the earliest known golf sites date from the 15th–18th centuries and were on rough ground by the seashore, but a few sites were inland next to large cities like Perth and Edinburgh. These courses were on common ground and as such golfers shared the area with other people engaged in different activities. Golfers played the land as they found it and left few recognisable golf features, though at Leith Links and Bruntsfield Links in Edinburgh the external boundary or footprint of the area used by the golfers is retained within public parks.

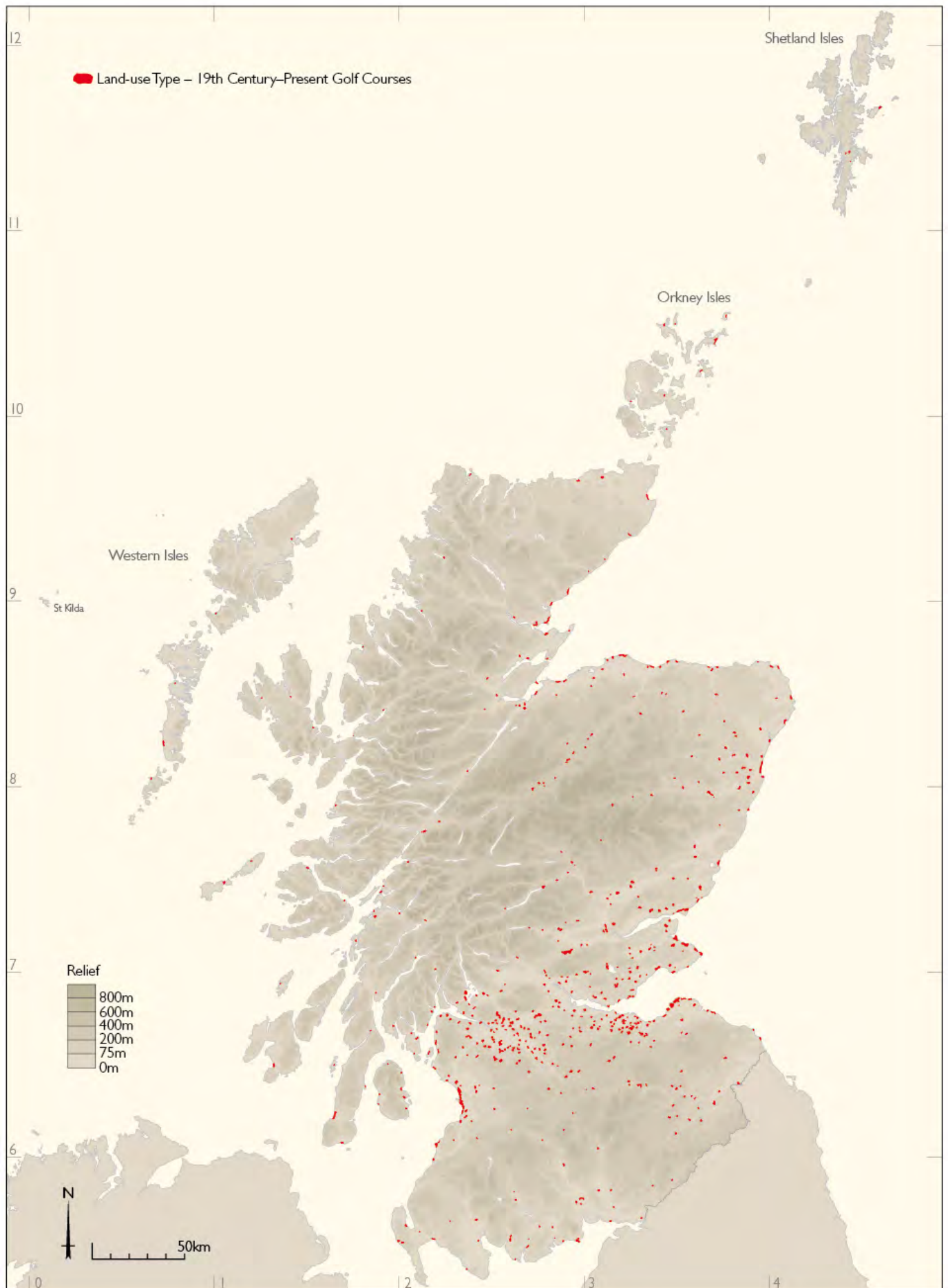
Golf had its first boom in the last quarter of the 19th century because of the technological development of ball and club manufacture, but also because railway expansion meant that travel was quicker and easier. Population in the cities was expanding, which led to the creation of suburbs, and some people had spare time and money to devote to leisure pursuits. These were all factors that led to an explosion of new golfing societies in the years just before and after 1900.

These societies needed land to create their golf courses and some bought or leased good quality land on which flat and tree-lined courses were created. Known as parkland courses, they have soft fairways, in sharp contrast to the stark, windswept and barren links courses by the seashore. Links courses, often located adjacent to medieval burghs or villages, are characterised by their sandy soil and the browning of the grass during a long dry summer. Moorland golf courses can also appear barren but rely on good drainage to create fairways on damp and peaty ground.

The Victorian boom led to the creation of new estates with large houses and designed landscapes. Often a laird created a private golf course within the pleasure grounds. Mostly these courses were short-lived and converted into farmland or other uses. Some estates have been converted, with the house used as a clubhouse and the grounds turned into a golf course. In recent years some landowners have created a golf course as a commercial enterprise on part of their estate. These courses usually respect features like tree belts and ornamental trees and consequently preserve the layout of the original designed landscape.

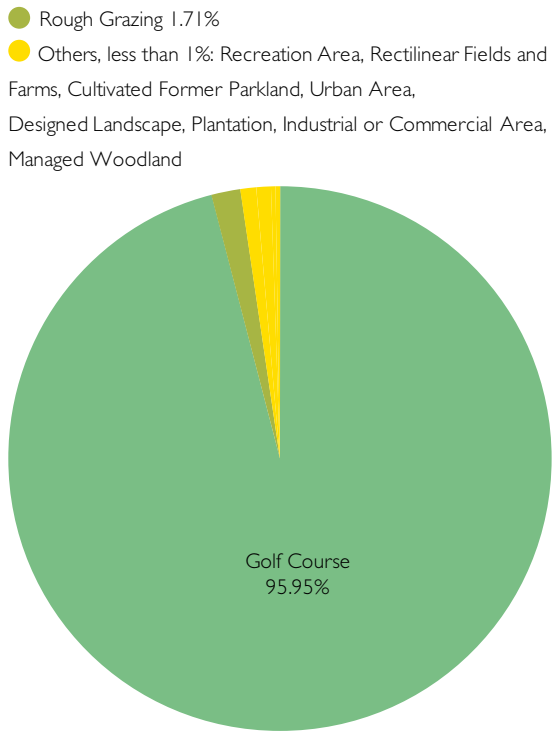
In large cities it is often hilly ground, not suitable for housing, which is available for golf. These courses offer an oasis for wildflowers and animals in an urban environment. Golf courses are increasingly at risk of closure due to falling membership levels and rising costs, with hill courses particularly threatened; Torphin Hill and Lothianburn Golf Clubs on the outskirts of Edinburgh closed in 2013/2014. However, grassed-over bunkers, tees and greens remain as fossilised features in the landscape.

Before the Second World War, courses used the lie of the land with only minimal earth moving needed to create bunkers, tees and greens. However, modern course construction leads to the complete landscaping of an area, sweeping away the field pattern with the creation of an artificial topography of mounds and lochs (Fig 52). This is in sharp contrast to some golf courses that are found on remote Scottish islands where hazards are natural features or abandoned man-made structures. The seasonal nine-hole golf course on the Island of Stroma is one such course.⁴⁴

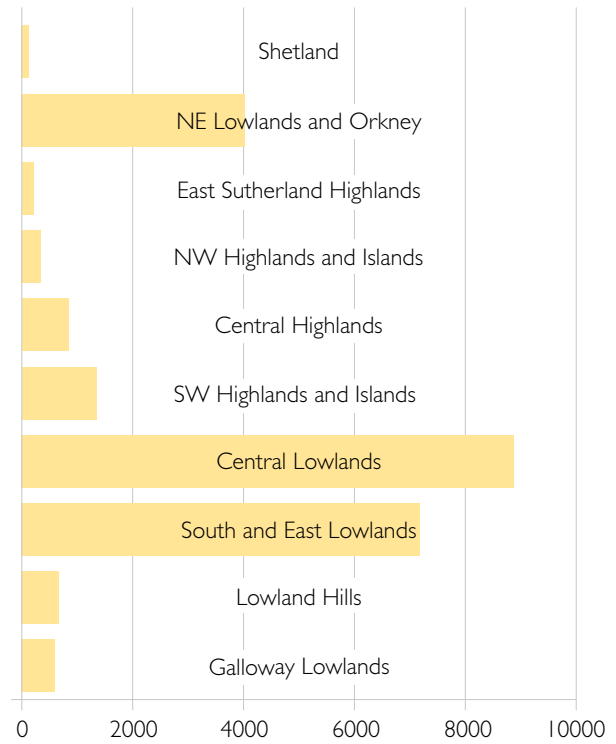


Map 17 Distribution of 19th Century–Present Golf Courses. GV006871.

Fig 51 Land use and regional distribution. They are a characteristic of urban edge development that can inhibit or limit suburban development. GVO06926.



Current Land-use Type of land that has been interpreted as 19th Century–Present Golf Courses



Area (ha) – by region – of land that has been interpreted as 19th Century–Present Golf Courses



Fig 52 Aberdour Golf Course, Fife occupies former Rectilinear Fields next to the planned village. DP100635.

Late 20th Century–Present Rough Grazing

(MAP 18 & 53)

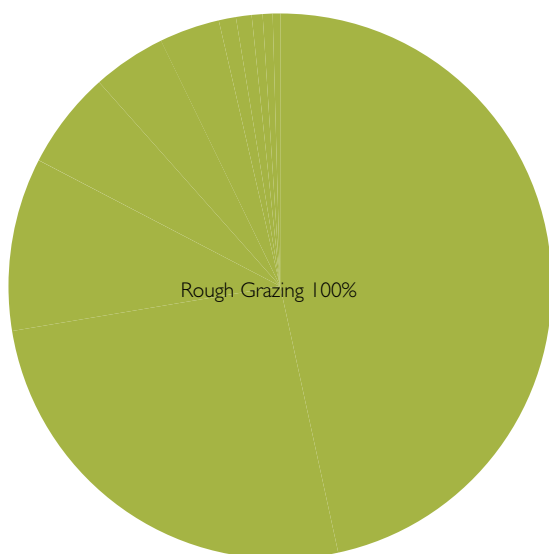
Land of Deer, Grouse, Sheep and Cattle
by Piers Dixon

With 51 percent of Scotland categorised as rough grazing today – and before the Forestry Commission was created in 1919 this extended to almost two thirds of the country – this is the most typical environment of Scotland, wherever land is used primarily for grazing cattle, sheep, grouse and deer. It is also under constant attrition, as wind farms and new plantations impact upon it, while containing the relict remains of past phases of settlement.

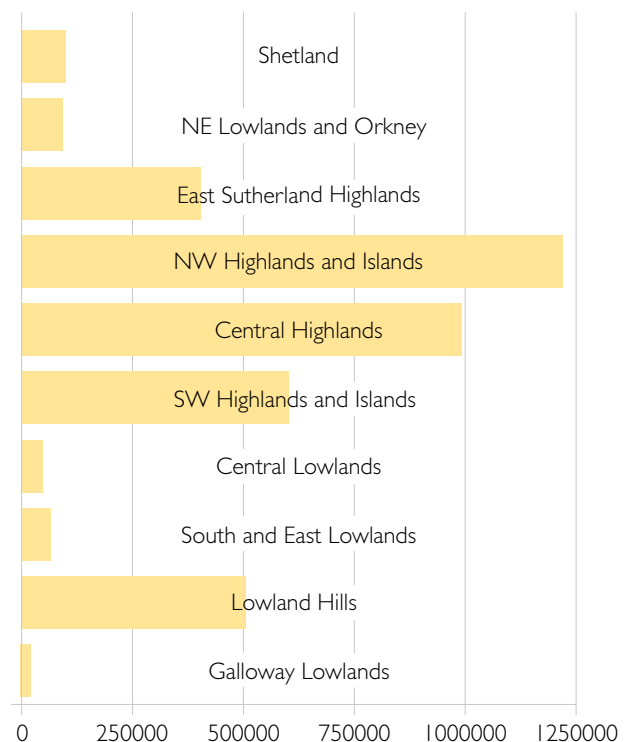
Rough grazing includes coastal salt grass as well as machair on the north-west coasts and extends to the montane environment of the high mountain tops where only a restricted range of wildflowers and scrub grass flourishes in the short growing season. To the north-west the grazing is further limited by the wind and there is much exposed rock and peat growth (Fig 54). In the Central Highlands the relatively lighter rainfall spawns higher grassland plateaux, such as

that of the Monadhliath Mountains, sweetened by its lime-rich rocks, and grouse moors that give such a distinctive patchwork of variable growth as a result of regular burn-off (Fig 55). In this environment summer grazing could be profitable, and shepherds' huts and hunters' bothies are common where shieling huts once thrived, many now converted to walkers' shelters like Corrour Bothy in the Aberdeenshire Cairngorms. Indeed, these grazings spawned the post-medieval droving trade in cattle, built on long-established practice of summer grazing and transhumance that fed the great markets and fairs of the medieval period. At the same time monasteries and great landowners exploited the international trade in wool from the grazing of sheep. It was also the place where the mass drives of deer took place as aristocrats played host to their peer group. It is also the most likely environment in which to find the deserted remains of prehistoric and medieval settlements, despite the relatively poor quality of much of the ground for agriculture, with some 8 percent of Rough Grazing displaying the visible signs of past settlement, compared with only 6 percent of Rectilinear Fields and that only visible in dry summers. Indeed, one may go further and say that half the visible trace of previous land uses lies in this terrain (Chapter Four, Relict Landscapes).

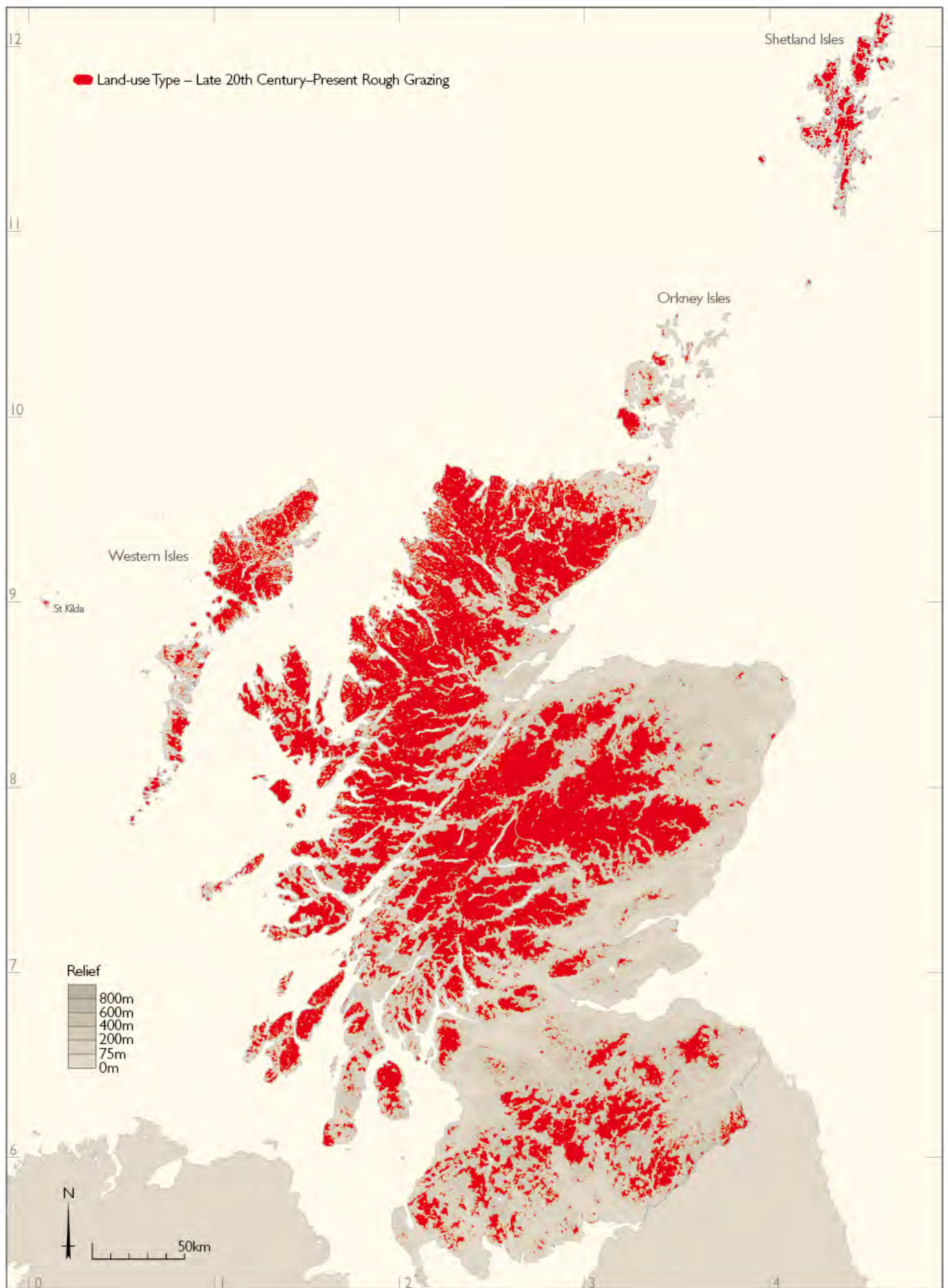
Fig 53 Land use and regional distribution. GV006945.



Current Land-use Type of land that has been interpreted as Late 20th Century–Present Rough Grazing



Area (ha) – by region – of land that has been interpreted as Late 20th Century–Present Rough Grazing



Map 18 Distribution of Late 20th Century–Present Rough Grazing. GV006890.



Fig 54 Ben Nevis and the ranges of mountains in the north-west are more extreme and unsuitable for settlement but provide a habitat for deer and sheep. The only human interventions that are visible are the 20th century forestry plantation and access tracks, managed woodland in the right foreground and the footpaths up the mountain beyond. DP111939.



Fig 55 The patchwork of burnt-off strips in heather moorland at Tom na h'Ulaigh beside the River Findhorn, Highland typifies the grouse management of Rough Grazing in the eastern Highlands DP074250.

ENDNOTES

- 1 Millman, R. N., 1975, *The Making of the Scottish Landscape*. Batsford: London, pp.13–21.
- 2 Roy, Gen. W., *The Military Survey of Scotland, 1747–55*.
- 3 Ordnance Survey, *6-inch Map of Scotland, 1843–82*, 1st ed.
- 4 Devine, T. M., 2006, *Clearance and Improvement: Land, Power and People in Scotland, 1700–1900*. John Donald: Edinburgh.
- 5 RCAHMS, 1997, *Eastern Dumfriesshire: An Archaeological Landscape*. HMSO, Edinburgh; Richards, G., 2000, *Highland Clearances: People, Landlords and Rural Turmoil*. Birlinn: Edinburgh.
- 6 Devine, T. M., 1994, *The Transformation of Rural Scotland: Social Change and the Agrarian Economy*. Edinburgh University Press: Edinburgh.
- 7 Harrison, J., 2008, 'East Flanders Moss, Perthshire: A Documentary Study', *Landscape History* 30.1.
- 8 *New Statistical Account of Scotland (1841)*, vol. 2. Ormiston, pp. 130–153.
- 9 Thomson, W. P. L., 2003, 'Agricultural Improvement', in Omand, D., *The Orkney Book*. Birlinn: Edinburgh, pp. 93–101.
- 10 Smout, T. C., 2012, 'A New Look at the Scottish Improvers', *Scottish Historical Review* 91.1, pp. 125–149.
- 11 Crofters' Holdings (Scotland) Act 1886, www.legislation.gov.uk/ukpga/Vict/49-50/29 [accessed June 2018].
- 12 Boyle, S., 1998, *Forts, Farms and Furnaces: Archaeology in the Central Scotland Forest*. RCAHMS: Edinburgh.
- 13 Gibson, R., 2007, *The Scottish Countryside: Its Changing Face 1700–2000*. John Donald: Edinburgh.
- 14 Hay, G. D. and Stell, G. P., 1986, *Monuments of Industry: An Illustrated Historical Record*. HMSO: Edinburgh.
- 15 Fraser, D., 1990, *A History of Guisachan*. Balnain Books: Inverness; May, J., 1993, *Greenbank Garden*, National Trust for Scotland: Edinburgh.
- 16 Colman, R., 2004, 'The Archaeology of Burgage Plots in Scottish Medieval Towns: A Review', in *Proc. Soc. Antiq. Scot.* 34. Society of Antiquaries: Edinburgh, pp. 281–324.
- 17 Adams, I. H., 1978, *The Making of Urban Scotland*. Croom Helm: London.
- 18 Pryde, G., 1965, *The Burghs of Scotland: A Critical List*. Oxford University Press: London.
- 19 Hall, D., 2002, *Burgess, Merchant and Priest*. Birlinn: Edinburgh; Lynch et al., 1988, *The Scottish Medieval Town*. John Donald: Edinburgh.
- 20 Dixon, P., 2003, 'Champagne Country: A Review of Medieval Rural Settlement in Lowland Scotland', in Govan, S. (ed), *Medieval or Later Rural Settlement in Scotland: Ten Years On*. Historic Scotland: Edinburgh, pp. 53–64.
- 21 Dixon, P., 1999, 'A rural settlement in Roxburghshire: excavations at Springwood Park, Kelso, 1985–6', *Proc. Soc. Antiq. Scot.* 128 (1998). Society of Antiquaries: Edinburgh, pp. 671–751.
- 22 Dixon, P., 2002, *Puir Labourers and Busy Husbandmen: The Countryside of Lowland Scotland in the Middle Ages*. Birlinn: Edinburgh.
- 23 <https://canmore.org.uk/collection/431754> [accessed 2018].
- 24 <https://canmore.org.uk/collection/1295792> [accessed 2018].
- 25 <https://map.hlamap.org.uk/> Gazetteer – Zoom Go to NS7700084000 [accessed 2018].
- 26 Dixon, P., 2016, 'Mukked and Folded Land: the evidence of field data for medieval cultivation techniques in Scotland', in Klapste, J. (ed), *Agrarian Technology in the Medieval Landscape*, Ruralia X. Brepols: Belgium, pp. 107–8.
- 27 Ibid.
- 28 Brown, M., 2012, *Scotland's Lost Gardens*. RCAHMS: Edinburgh.
- 29 Richens, R., 1995, 'Changes in the Physical and Social Landscape of Three Lanarkshire Farms during the Eighteenth-Century Agricultural Reorganisation', *Review of Scottish Culture* 9 (1995/6); Dixon, P. (ed), 2008, *Buildings of the Land*. RCAHMS: Edinburgh.
- 30 Haynes, N., 2015, *Scotland's Canals*. Historic Scotland: Edinburgh.
- 31 Ordnance Survey, 1853, *Ross-shire, sheet 7*.
- 32 Caird, J. B., 1987, 'The creation of crofts and new settlement patterns in the Highlands and Islands of Scotland', *Scottish Geographical Magazine*, 103.2. Taylor & Francis: Milton Park, pp. 67–75.
- 33 Forrest, L., 2011, 'Gairloch' Settlements in the 19th Century: Wester Ross and the Canadian Maritimes, dissertation for University of Aberdeen.
- 34 McWilliam, C., 1975, *Scottish Townscapes*. Collins: London.

- 35 Lockhart, D., 2011, 'Planned Villages', in Fenton, A. and Veitch, K. (eds), *Farming and the Land: Scottish Life and Society*, Vol. 2. John Donald: Edinburgh, pp. 172-197.
- 36 Adams, I. H., 1978, *The Making of Urban Scotland*. Croom Helm: London.
- 37 Tipping, R., 2010, *Bowmont: An Environmental History of the Bowmont Valley, and the Northern Cheviot Hills, 10,000 BC-AD 2000*. Society of Antiquaries Monograph: Edinburgh, p. 188.
- 38 RCAHMS, *South-east Perth: An Archaeological Landscape*. HMSO: Edinburgh, p. 113; Macdonald, A. R., Smout, T. C. and Watson, F., 2005, *A History of the Native Woodlands of Scotland, 1500-1920*, Edinburgh University Press: Edinburgh, pp. 38-44.
- 39 Macdonald, A. R. et al., *A History of the Native Woodlands of Scotland*, p. 244.
- 40 Boyle, S., 2003, 'Ben Lawers: An Improvement-period Landscape on Lochtayside, Perthshire', in Govan, S. (ed), *Medieval or Later Rural Settlement in Scotland: Ten Years On*, Historic Scotland: Edinburgh, pp. 17-29.
- 41 Fenton, A. and Martin, A., 2011, 'Peat and Turf', in Fenton, A. and Veitch, K. (eds), *Farming and the Land. Scottish Life and Society*, Vol. 2, John Donald: Edinburgh.
- 42 Scot, R., 2005, *Death by Design: The True Story of the Glasgow Necropolis. Black & White: Edinburgh*.
- 43 RCAHMS, 2007, *In the Shadow of Bennachie: A Field Archaeology of Donside*. Society of Antiquaries Monograph: Edinburgh; Gray, M., 1976, 'North-east Agriculture and the Labour Force, 1790-1875', in Maclaren, A. A. (ed), *Social Class in Scotland, Past and Present*. John Donald: Edinburgh.
- 44 <http://www.scottishgolfhistory.org/> [accessed July 2018].

Historic Land-use Assessment of Scotland, 1996–2015



HISTORIC ENVIRONMENT SCOTLAND

ÀRAINNEACHD EACHDRAIDHEIL ALBA

Chapter Two: THE MODERN LANDSCAPE, c1750–2015, PART TWO



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Chapter Two:

THE MODERN LANDSCAPE, c1750–2015, PART TWO

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Section Three:

LARGE-SCALE LAND-USE CHANGE OF THE LATE 19th TO THE 21st CENTURIES

Introduction

The 20th century saw great changes in Scotland's landscapes. However, these have not changed the 19th century division of the landscape into farming lowland and upland rough grazing, as described above. Some of these were changes of scale rather than new uses, resulting from urbanisation, reforestation and advances in agricultural methods. Others were new, such as a burgeoning leisure and recreation sector and a whole new range of energy industries. At the same time the decline of traditional industries in the 1980s, like steel, coal mining and shipbuilding, which made such an impact on the 19th and early 20th century landscape, was a catastrophic loss, leaving not only unemployment but great scars on the landscape.

For the modern population of Scotland, a new environment has effectively been created with the vast urbanisation of the hinterland of cities like Edinburgh, Glasgow, Dundee and others, as suburban housing has spread onto former agricultural land and obliterated most of the earlier pattern of rectilinear fields that once occupied this space. As towns and cities have grown and the suburbs have spread, edge-of-town shopping centres have been developed to provide retail services. Provision for leisure and recreation has become a feature of urban and rural landscapes, with new golf courses, urban green spaces, caravan parks and even ski centres. Failed heavy industries have, in many instances, been largely cleansed from the landscape – coal tips have been removed, enormous steelworks demolished, some opencast mines and quarries have been backfilled. Plantations of trees, business parks and housing estates have taken their place, their footprint often being the only trace in the modern landscape of former industries. However, in some areas, such as the Lowlands of Fife, Lothian, Lanarkshire and Ayrshire, which were once dominated by the industries of mining, opencast extraction and manufacturing, the abandoned and derelict remains of this industrial past are still reflected in the landscape, while the towns that grew up to supply labour now serve businesses of the modern economy. Yet aspects of these landscapes still incorporate past land uses, whether medieval urban centres or the former parklands of designed landscapes.

But these developments were small scale in comparison to the rural landscape change that resulted from afforestation. Timber supplies were at an all-time low by the end of the First World War, and so huge swathes of less-fertile farmland and upland areas were taken over by the state for coniferous plantations. The timber industry expanded again after the Second World War such that, by the 1990s, the landscapes of upland Dumfries and Galloway, Argyll and the eastern Highlands were unrecognisable. Before industrial-scale mechanisation of the industry in the 1970s the abandoned farms of post-medieval, medieval and prehistoric times survived amongst the trees. Since the 1990s they have had another reprieve with some reduction in afforestation; although many are hidden in clearings, they contribute to the forest landscape.

Electricity-generation complexes for nuclear, gas or coal-fired plants were comparatively small constructs in rural landscapes. However, the construction of large reservoirs for hydropower, along with their large-scale infrastructure, altered many highland glens, and wind turbines are now industrialising some of Scotland's moorlands.

Apart from urbanisation, the lowland areas have been most changed by modern transport and communications; the country is now criss-crossed by roads and motorways, and airports have been created, often out of former military sites. In addition, agricultural intensification, from prairie fields to industrial-scale farming, has changed the rural landscape. Both the First and Second World Wars also had a significant impact on the landscape, particularly around the coast. Defence lines were constructed, naval bases established, and numerous large airfields were created, sweeping away evidence for past land use. A few continued in use after the end of hostilities, but many were just abandoned. Those that became part of the military establishment were enlarged with the provision of barracks and housing, as at Machrihanish, Argyll and Bute, Leuchars, Fife, and Kinloss, Moray. Others were new developments associated with the Cold War, such as Faslane, St Kilda and along the western seaboard of the Uists.



Fig 56 The Five Sisters shale bing in West Lothian is protected as an ancient monument, as are the factory buildings. The impact on the farmland of these monsters of industrial exploitation is clearly visible. SC949578.

Changes have not just been associated with the progressive urbanisation and mechanisation of Scotland; rural resettlement has also affected the landscape. After the First World War the Board of Agriculture acquired lowland farms from Caithness to the Borders to create smallholdings for veterans – known as Agricultural Holdings – in the process sub-dividing and modifying the established pattern of 19th century fields and farms. In the north and west of the country crofting townships already existed, but new ones were created for returning veterans. Both frequently resulted in existing farmland being divided into smaller units with standardized white cottages or bungalows. A third strand of post-First World War provision for veterans, but also for the urban working class, were timber-built summer huts, which provided cheap holiday accommodation.

However, these were adaptations of the 19th century landscape. Since the Second World War, industrial-scale farming has taken hold that has affected the size of buildings used for farming as well as the field pattern. These processes intensified in the 1970s when increased mechanisation led to the removal of trees, hedges, fences and drystone dykes, and the amalgamation of fields, particularly in the arable areas of the eastern Lowlands.¹ Clearing the land of stone – including the remains of previous farm buildings – has increased productive capacity. These works have taken place on a large scale along the fertile east of the country, thereby decreasing the visual diversity of some landscapes. In stock-rearing and egg-producing areas farm buildings have been enlarged and vast new sheds have become a feature.² Nevertheless, in some western areas the farmed landscape is little changed from c1900, including parts of lowland Ayrshire and Galloway, and the crofting landscapes of the Western Isles.

As the extent of agricultural farmland and rough grazing has decreased over the 20th century, urbanisation and afforestation have increased in proportion respectively. This is a change of degree in what went before rather than something completely new. Reafforestation was an aspect of the improvers' art, while urban centres had started expanding out of their burghal limits in the 19th century. However, as a result of the extraordinary expansion of these two land uses, in some instances today's landscapes are quite different to those of a century ago. At the same time, there are many others where the time-depth of change is still clearly visible, such as the shale bings visible from the M9 on the edge of Edinburgh, where the various forms and features provide a visual reminder of past times and lost industries (Fig 56).

19th Century–Present Urban, Industrial and Commercial Areas

(MAP 19 & FIG 58)

Urban Expansion by Sine Hood

Today in Scotland virtually everyone has a regular association with built-up areas, as categorised by HLA. It is where we live or work, where we access education or retail, and where much of our leisure time is spent. The locations of these built-up areas range from cities and towns to villages and small pockets of housing or industrial activities. As would be expected, the largest and most concentrated distributions lie across the Forth/Clyde valleys of the Central Belt of Scotland and around the mainland east coast up to the Dornoch Firth. But throughout the whole country there are examples of modern Built-up Areas, however small. They include industrial and commercial buildings, malls and estates. Where the specific origins of a settlement are still present today, as, for example, a medieval burgh, or 18th and 19th century planned industrial or agricultural villages and crofting townships, these are distinguished, having their own historical origins and development (see above, Section 2). Much of the influx of people to these established centres of population was initially absorbed within the existing housing and street pattern, often leading to cramped conditions.

The early decades of the 19th century saw sudden and significant migration of the rural population to the expanding towns. This trend continued through to the end of the century, resulting in nearly 60 percent of people living in towns with populations over 5000. The declining numbers of those who could make a living from agricultural work meant a shift to seeking alternative employment in the growing industries and manufactures centred round fishing, wool and linen. Although these industries began on a relatively small scale and were often centred on settlements specifically built as planned villages for the workers, the growth in these industries and the workforce they required demanded an increase in housing, leading to the enlargement of these settlements.

As heavy industries such as mining and ironworking emerged, the demand for workers was suddenly increased to levels never before imagined and resulted in massive growth in urban settlement, most particularly seen in and around Glasgow (Fig 57a & b). The need for speedier and more reliable transport links gave rise to employment opportunities in building and servicing the roads, canals and railways. And, of course, this led to the provision of housing for the workers and their families on a larger scale than hitherto had been recognised as necessary by the industrialists and entrepreneurs of the new industries, such as the textile mills, the buildings of which still stand in many towns in lowland Scotland.

For those who benefitted economically from the industrial successes, an increasing desire to reflect their raised living standards in the appearance and location of their homes led to new housing being built along the approaches to many towns. Fast and affordable transport links meant that suburbs were developed throughout the Victorian and Edwardian era, including areas of grand detached villas. Similarly, town pride as a consequence of economic achievements was also displayed through impressive new buildings such as banks, municipal buildings and civic halls.

Fig 57a Carntyne, Glasgow housing estate photographed by Aerofilms in 1931. A large-scale housing project taking in farmland for industrial workers. The road through the estate reflects a former rural road. SC1257180.

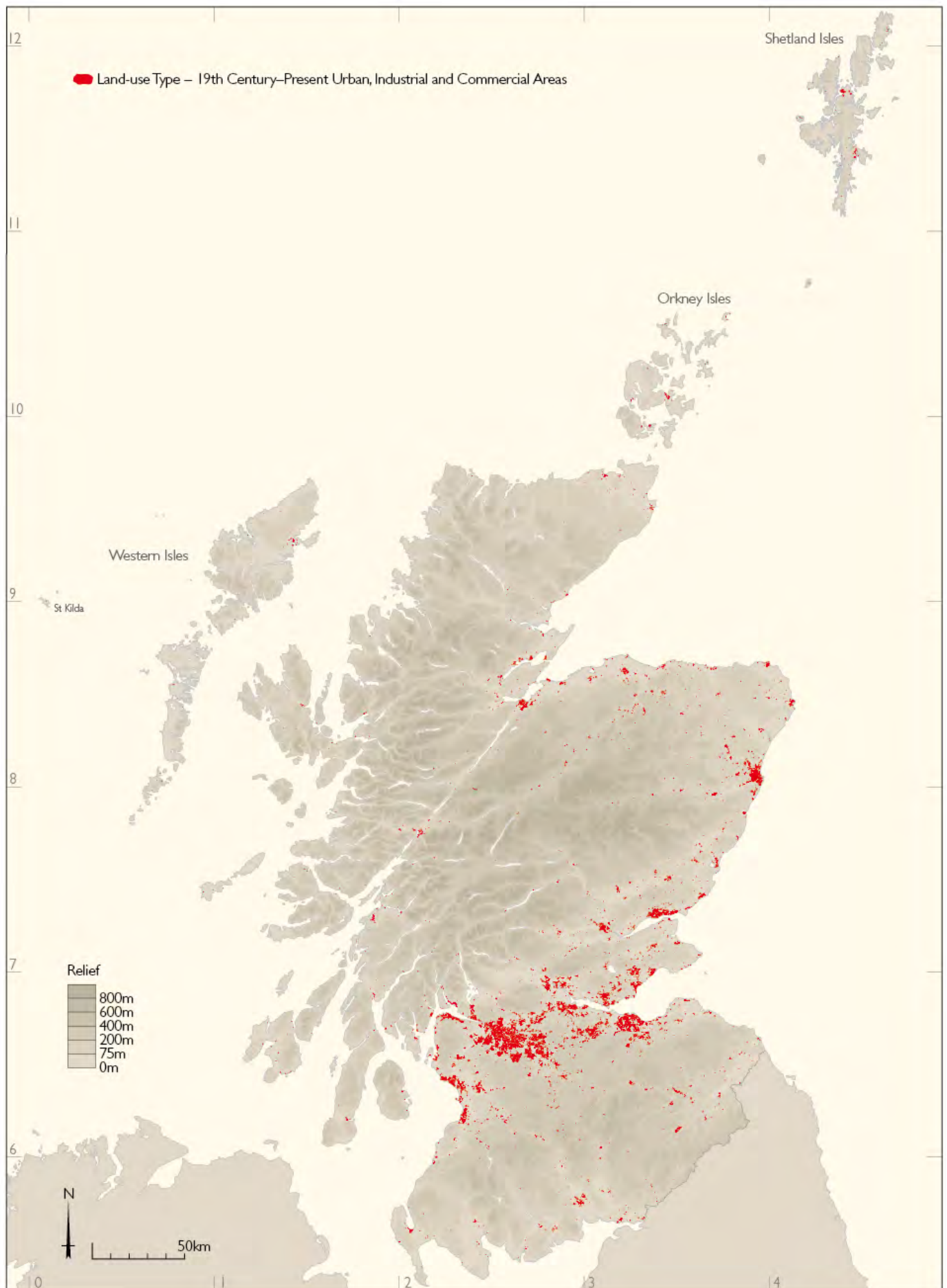




Fig 57b An Aero Pictorial image of Beardmore's Forge, Parkhead, Glasgow in 1947. Formerly farmland, it is now a shopping centre. SC1437789

As the initial industrial boom began to decline, the expansion of urban areas slowed, but after the Second World War the need for new housing, in many cases to replace aging poor-quality homes dismissed as slums, became crucial and led to significant building programmes of large social housing schemes, including low- and high-rise blocks. One solution was to build new towns in rural locations, especially as the slums of Glasgow were cleared. These New Towns of East Kilbride,

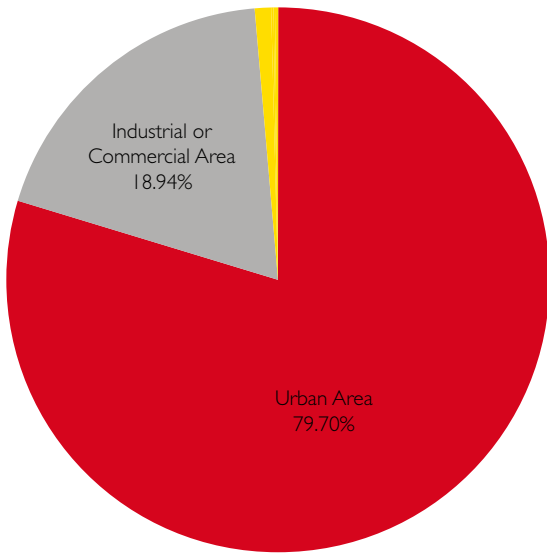
Cumbernauld (Chapter Three, Fig 35), Glenrothes and others were designed to combine housing with schools, shops and community centres as well as a more pleasing parkland environment. In more recent times new housing developments have included the conversion or replacement of some previous industrial sites. Out-of-town retail and industrial developments have become common on the outskirts of many towns, ranging from large complexes to groups of small individual units.³



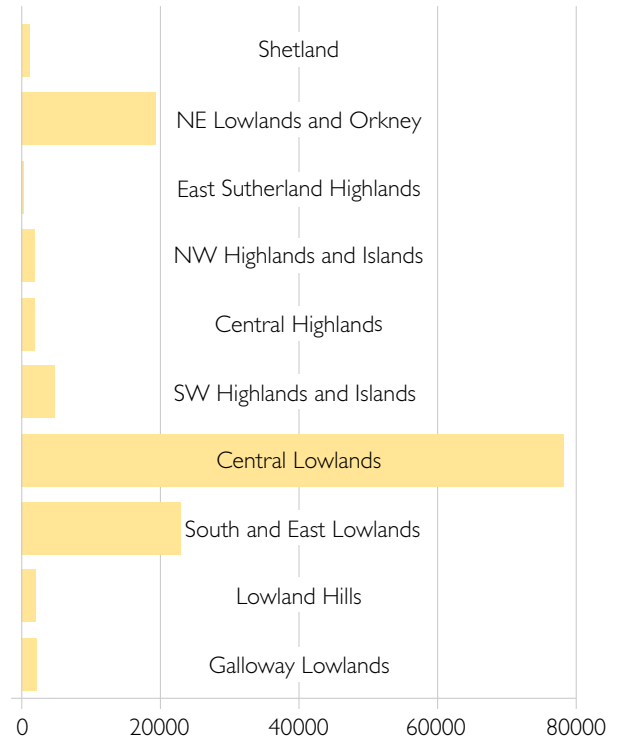
Map 19 Distribution of 19th Century–Present Urban, Industrial and Commercial Areas. GV006872.

Fig 58 Land use and regional distribution. GV006927.

● Others, less than 1%: Rough Grazing, Recreation Area, Managed Woodland, Rectilinear Fields and Farms, Plantation, Golf Course, Smallholdings, Country Park, Reservoir, Industrial-scale Farming Unit, Power Generation, Seashore, Restored Agricultural Land, Monastery or Cathedral



Current Land-use Type of land that has been interpreted as 19th Century–Present Urban, Industrial or Commercial Area



Area (ha) – by region – of land that has been interpreted as 19th Century–Present Urban, Industrial or Commercial Area

20th Century–Present Plantation

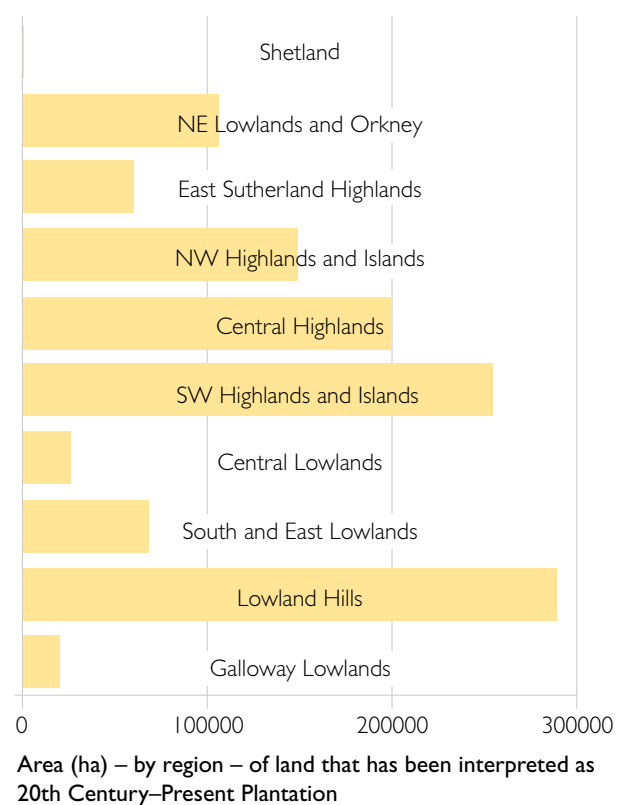
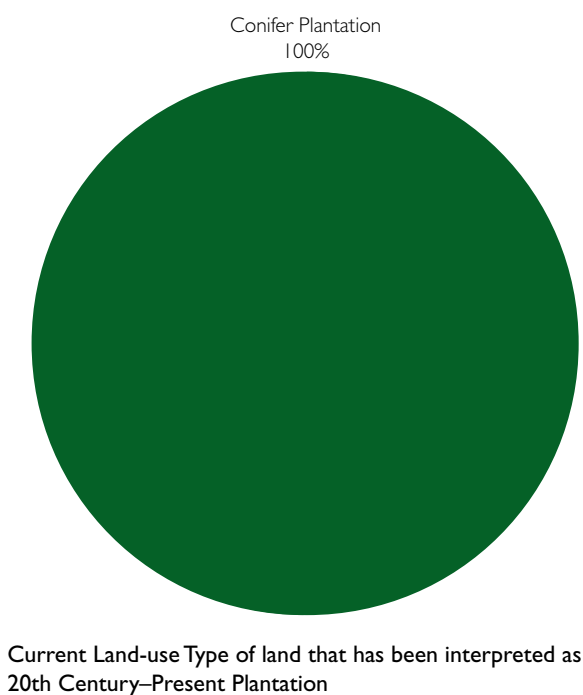
(MAP 20 & FIG 59)

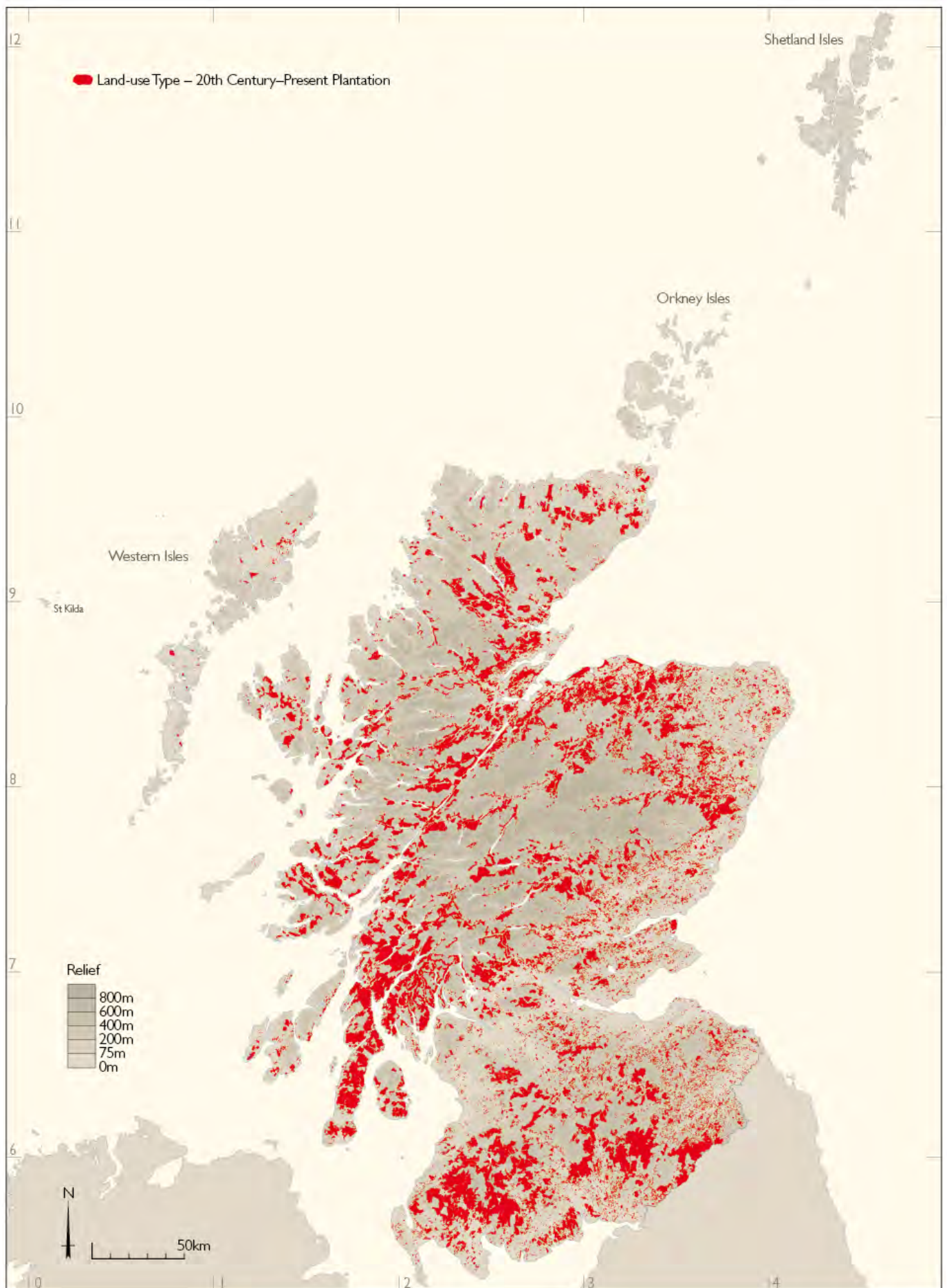
Reafforestation by Sine Hood

During the First World War, woodland across the whole of Britain was a vital element of the war effort. The importation of supplies of timber was severely restricted, resulting in the intensive use of home-grown timber and causing a significant reduction in the already depleted forested areas. After the War, it was felt to be crucial to reverse this decline. Thus in 1919 the Forestry Act that created the Forestry Commission was enacted, with a remit not only to buy up land for planting new trees, but also to develop best practice in woodland management and promote the timber industry. Through grant schemes, the Forestry Commission could also encourage private landowners to introduce and develop areas of forested ground. General economic depression in the post-war era allowed for land to be bought relatively cheaply, and in the early decades of the 20th century considerable new woodlands were established on land that was not being used for agriculture. Heavy industries continued the demand for increasing amounts of timber supplies, so the functions of the Forestry Commission remained vital.

The woodland stock was again depleted by the unparalleled requirements of the Second World War, so there was a continued priority focused on rebuilding the available timber reserves. This policy ceased to be critical after the War and commercial returns on timber became the focus of planting policies. The competing need for agricultural land led to coniferous forestry being planted increasingly on ever more marginal ground, with a concomitant impact on surviving evidence for past land uses. Over the following years huge amounts of new land were taken into the forestry estate as government sought greater returns from timber production. New techniques in planting and felling, and methods for pest control and fertilising were developed, building the efficiency and resilience of coniferous forest management. It also saw the increased mechanisation of planting procedures, with the use of tracked vehicles and ploughs to create a suitable seedbed. Forests planted in this period are recognised by their uncompromising straight edges and near 100 percent conifer planting with few clearings (Fig 60).

Fig 59 Land use and regional distribution. GV006928.





Map 20 Distribution of 20th Century–Present Plantation areas on the highland fringe and across the Southern Uplands. GVO06873.



Fig 60 The straight edges of these conifer plantation at Harburnhead Hill, West Lothian typify pre-1989 plantings in which few concessions were made to amenity. DP055205.

Interest in the environment and its care grew through the mid-20th century, and was reflected in the Countryside Act of 1968. Within its provisions, the Act outlined the need to cater for public access, and a range of recreational pursuits, including areas for camping and picnicking, were introduced. The various grant schemes, established to encourage private planting under Forestry Commission guidance, also included measures for public access. Subsequent concern about the impact of increased afforestation on public benefits, such as amenity, archaeology and natural habitats, led to provisions for the identification and protection of such elements within afforestation schemes. The benefit of this has included the recording and protection of many archaeological features and relict landscapes. In recent years, the planting style of plantations has been adapted to include more use of sinuous lines and fragmented boundaries rather than the previous regimented rectilinear blocks. Broadleaf trees are also often included to create a more pleasing aspect.

The current National Forest Estate in the care of Forestry Commission Scotland represents some 9 percent of the country's land cover, and conifer plantations total almost 15 percent of Scotland. However, approximately one third of the Estate is unplanted open ground that contains mountainous areas, moorland and coastal stretches. Examples of relict land use lie within many of these areas, reflecting all eras of human presence in Scotland from the Neolithic. Prehistoric hillforts, groups of shieling huts and rectilinear fields are among the broad array of archaeological remains that have been recorded by HLA within the National Forest Estate. It is likely that in future the National Forest Estate will continue to expand, in part to contribute to the alleviation of the effects of climate change.⁴

20th Century Holdings

(MAP 21 & FIG 62)

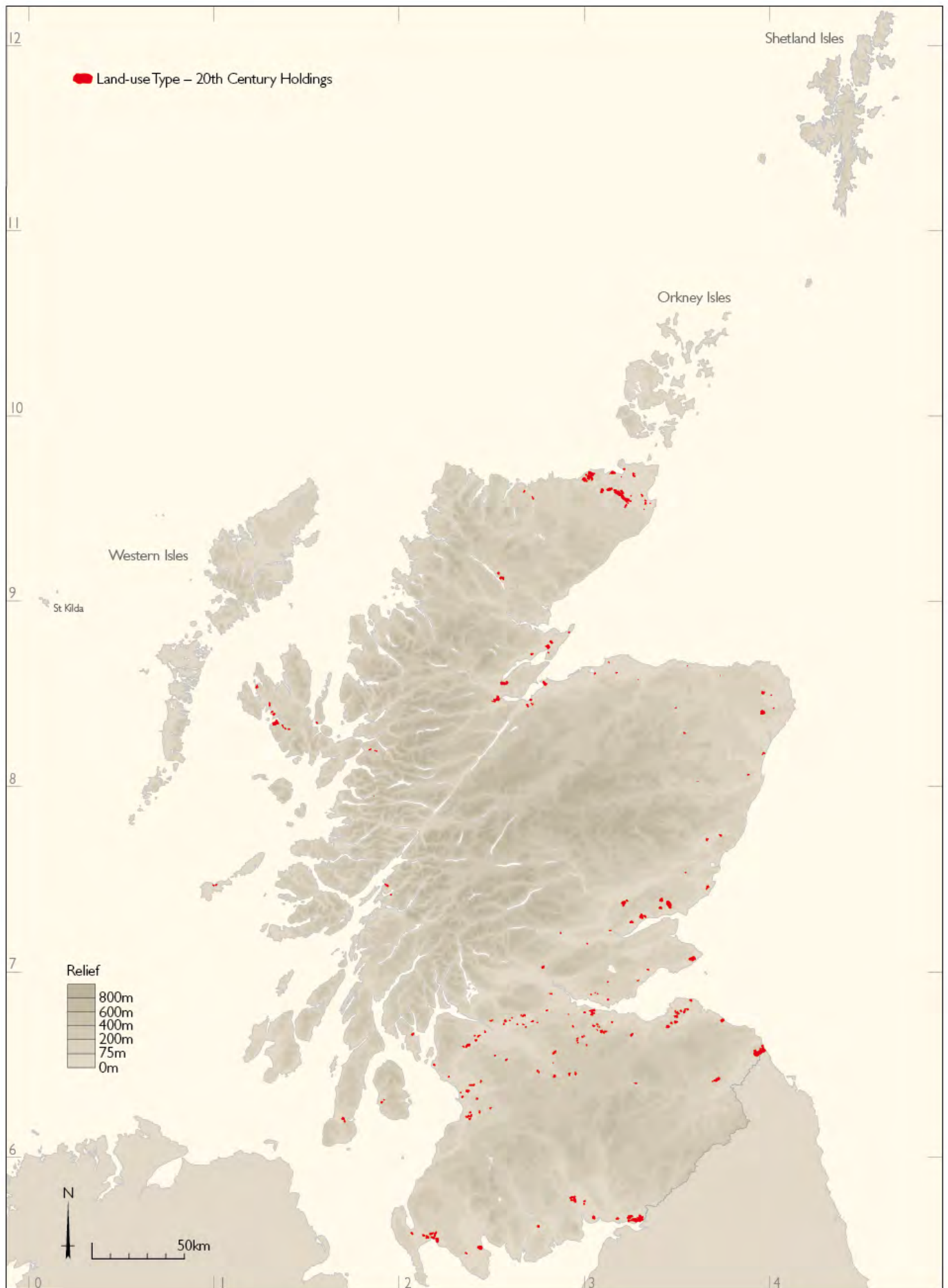
'Homes fit for heroes' by Allan Kilpatrick

At the end of the First World War, the Land Settlement Act 1919 allowed the government to create Agricultural Smallholdings across Scotland. The Act of Parliament was, in part, a response to the demand for smallholdings and the need to fulfil the promise of land for returning veterans. It also prevented depopulation in fertile lowland areas where large farms were increasingly being mechanised. The greatest number of smallholdings was established between 1919 and 1927. Although the distribution is spread across Scotland from Caithness to the Scottish Borders, they were concentrated in the Central Belt, generally close to the main cities and large towns, where markets were readily available. Of those in the more remote rural areas, Caithness has a dense concentration, as have parts of Dumfries and Galloway and the Scottish Borders.

Typically, the holdings were created with the purchase of a farm by the Department of Agriculture (Scotland). These farms ranged from very small to quite large, depending on what land became available for sale. The farmland was then sub-divided into smallholdings of between 2 and 4ha. Each plot was given a house, usually a single-storey hip-roofed four-roomed building with indoor toilet, built to a government design. Other examples were simple one-and-a-half-storey houses. Each house had an outbuilding, normally a large shed, situated to the rear or side of the building, and generally painted white. The sheds varied in size and construction, with most of blockwork and some timber framed, clad with corrugated iron. Droughduil and High Boreland Holdings in Galloway have large tripartite sheds, possibly for livestock farming. If a farmsteading was included in the sale of the farm it appears that it was used as a communal steading, and in some cases, like Arabella Smallholdings in Ross-shire, the steading buildings were converted to houses and attached barns.

Fig 61 Homes fit for heroes, Boggs Holdings, East Lothian, carved out of an existing farm. SC968453.





Map 21 Distribution of 20th Century Holdings; mainly lowland. GVO06874.

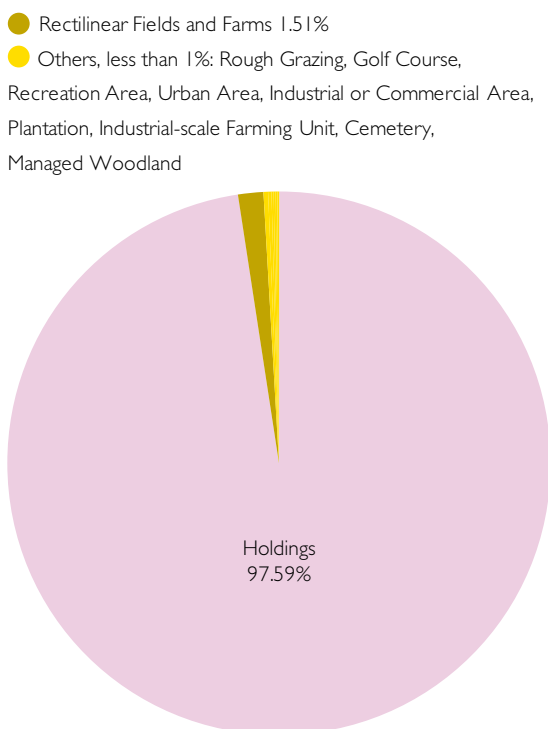
The farmland was divided into plots, with a simple wire fence surrounding the entire plot. The original field boundaries were often kept, however, and the land split between the new smallholdings (Fig 61). The plot size varied from one group of holdings to another, partly due to the quality of farmland. The plots were generally used for potatoes, market-garden crops, pigs and poultry.

The holdings were still in government hands until they were sold off in the 1980s. Almost all of them were bought by the sitting tenants, although in 2005 eight holdings remained in government ownership. The smallholdings today have effectively disappeared, with the farmland sold or rented to neighbouring farmers, and only a few remain as active smallholdings, or have been adapted to recreational activities from horse riding to golf ranges. Some beside the towns or cities have come under development pressure, with the land sold off for housing or industry, while others continue to form a distinctive landscape of small fields

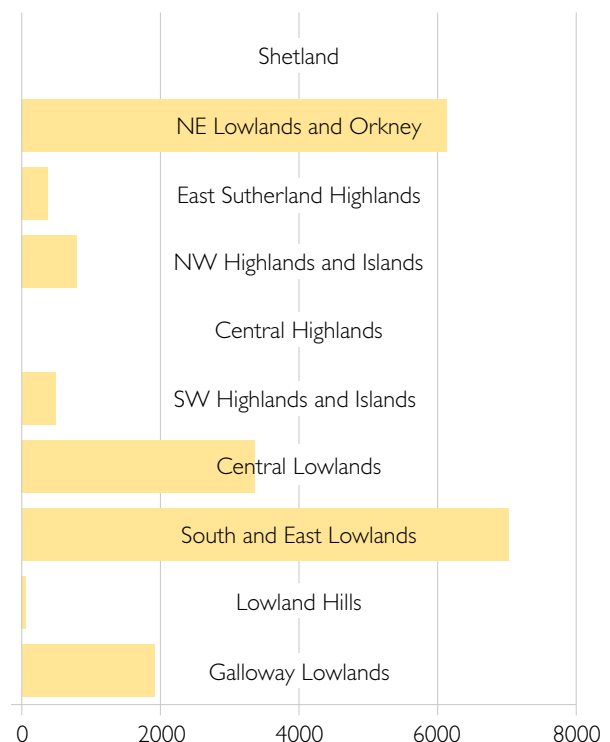
and dense rural housing with a network of roads servicing the holdings in areas which had no such houses or roads prior to 1919. Where sold off, the small field patterns are being lost to the needs of modern farming, which requires larger fields. The housing which was uniform has often been altered with extensions, but increasingly new-build houses are replacing the original smallholding building. The sheds tend to survive even when the houses have been replaced.

Unusually for a rural area, the houses are numbered and are annotated on OS maps as Holdings. Consequently, holdings may still be traced in the modern pattern of rectilinear fields, even where they largely have been returned to farming. Where holdings have been built over, the steading building may stand out amongst the late 20th century housing. In such cases the field pattern, as well as the houses and roads, may survive within the urban area as a footprint in the road pattern, as at Westside of Culloden, Highland.⁵

Fig 62 Land use and regional distribution. GV006929.



Current Land-use Type of land that has been interpreted as 20th Century Holdings



Area (ha) – by region – of land that has been interpreted as 20th Century Holdings

20th Century Recent Crofting Township

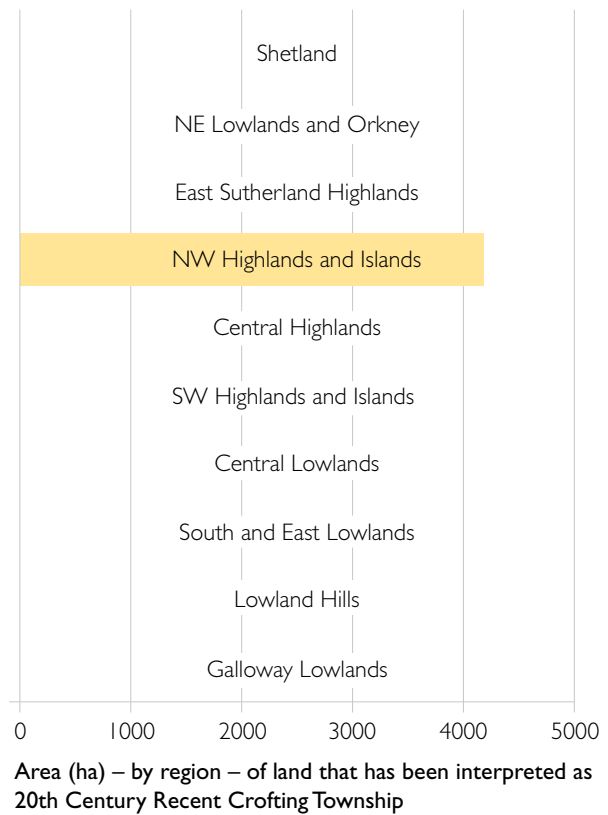
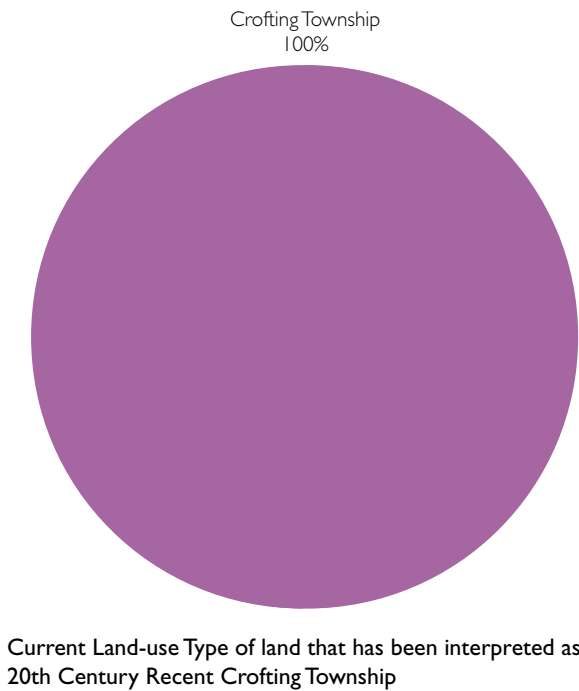
(MAP 22 & FIG 63)

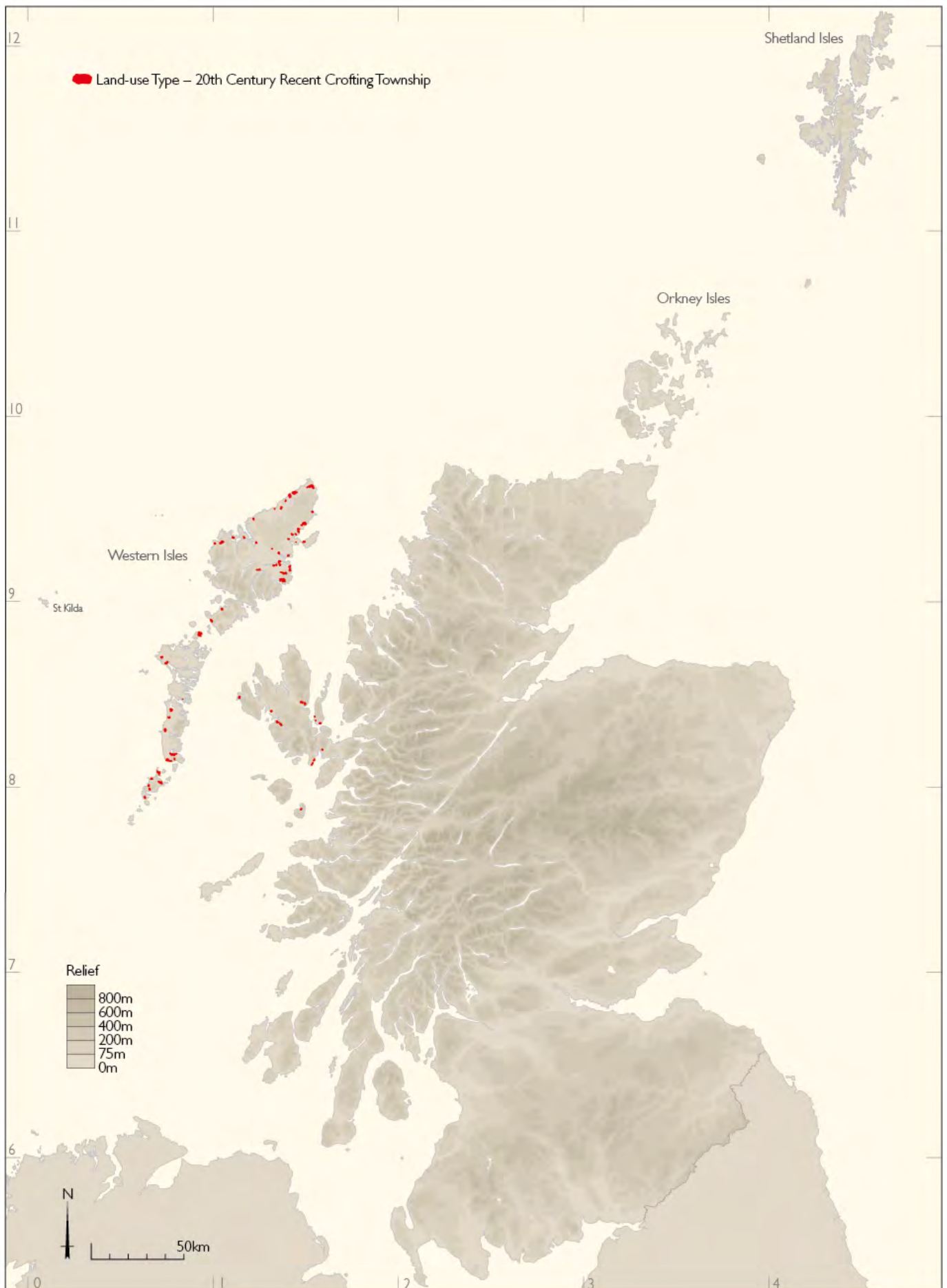
Providing for the Landless by Allan Kilpatrick

Twentieth century crofting townships are mostly found on the Western Isles (Fig 64) and the neighbouring islands of Skye and Raasay. They are similar in character to the early crofting townships, with long regular-shaped plots each with their own similarly designed croft house. Often they were created on existing farms or sites of earlier townships that were cleared of people in the 19th century. For example, the recent crofting township of Gabhsann bho Dheas is on the footprint of Galston Farm, Isle of Lewis, which is depicted on the second-edition Ordnance Survey map. The area also has extensive remains of lazy beds and building footings of an earlier settlement that pre-dates the farm.

These new townships were created in a response to political tensions at the turn of the 20th century as crofters began to farm and live illegally on land that was hitherto unoccupied. The Vatersay Raiders are a famous case of the time.⁶ Descendants of the people cleared from Vatersay returned in 1908 to farm and live without permission of their landlord, Lady Gordon of Cathcart. Eventually, due to public outcry, the government purchased the island to make into crofts. The government continued buying land under various smallholding acts in the Inner and Outer Hebrides after the First World War and before the start of the Second World War. The success of this scheme has led to crofting townships of 20th century origin being a relatively common feature in the Outer Hebrides.

Fig 63 Land use and regional distribution. GV006930.





Map 22 The distribution of 20th Century Recent Crofting Townships is entirely within the north-west Highlands and Islands. GVO06875.



Fig 64 The 20th Century Crofting Township of Col Uarach, Isle of Lewis is typical in that it has 20th century cottages and bungalows but no blackhouses. SC1007558.

The croft houses for these schemes tended to be small cottages built to an agreed plan, such as those at North Talisker on Skye, which gave the township uniformity in appearance. These cottages help distinguish the later crofting townships from earlier ones. The Board of Agriculture for Scotland would supply designs for these buildings; on Skye these were often in the form of stone and concrete gables with corrugated-iron-covered, timber walls and roofs. North Talisker was a large scheme of 68 new holdings,

though not all the houses were built at once. The Board of Agriculture for Scotland supplied wooden huts for the crofters to live in temporarily, which could be transformed into barns at a later point, but often the building of the houses was slow because the huts were too comfortable. Most recent crofting townships survive as working communities, which suggests that it was a very successful government initiative. Perhaps a key to their success is that they copied the style and ethos of their 18th and 19th century predecessors.⁷

20th Century–Present Summer Huts

(MAP 23 & FIG 65)

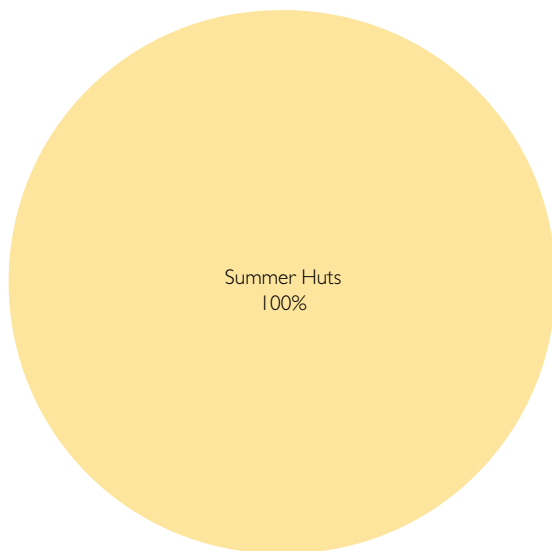
Leisure for the Urban Working Class
by Allan Kilpatrick

After the First World War the advent of ‘hutting’, as it became known, grew out of a popular movement for the working class to get out of the cities and experience the countryside. A few landowners began to allow camping, initially for ex-servicemen and deprived families. In some cases this led to the construction of huts, modest timber constructions, often using recycled wood and built to an individual design (Fig 66). It provided a cheap holiday and freedom from the grim and hardship of the inner cities. As the popularity of outdoor life grew through the 1920s and 1930s so did the number of sites made available for huts, with most huts constructed during the early 1930s; the Scottish Borders examples date from the end of the Second World War. The layout

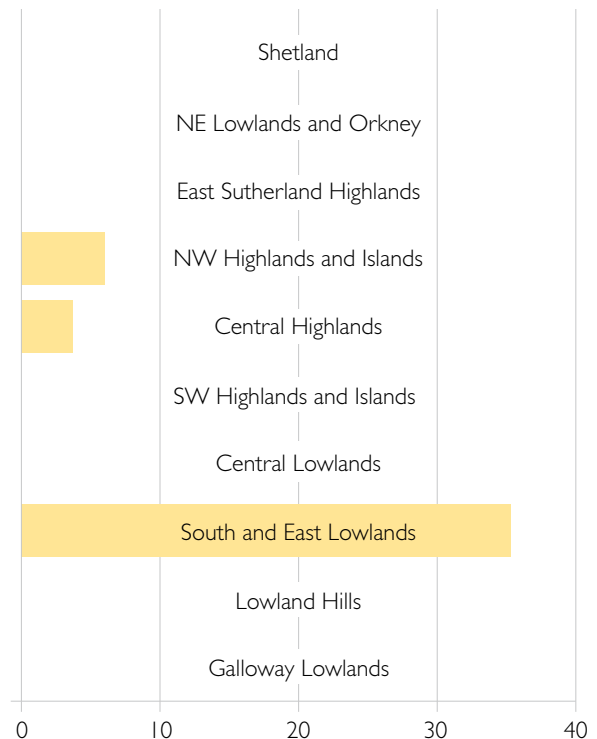
and arrangements of the buildings appear to be informal and dependent on the landowner, with only small rents being paid and no local-authority control of the construction of the huts. In one case a landowner provided a site and materials for bombed-out families from Clydebank during the Second World War. Summer huts reached their peak during or just after the Second World War, and the number of huts and sites has been in decline since, though efforts to re-establish them have been made following the publication of a Scottish Executive report in 2000.⁸

The distribution of the huts is mostly near to cities or the coast. Carbeth is the largest of the Summer Hut sites, comprising 180 huts located inland within a former estate to the north of Glasgow. The huts in Dumfries and Galloway, Renfrew, East Lothian and Ayrshire are all coastal. The single Western Isles’ example owes its origins to the shieling lifestyle practiced in Lewis. A total of 703 huts were recorded at 36 sites in 1999, though other sites may exist, and nationally only seventeen sites are over 1ha in extent.

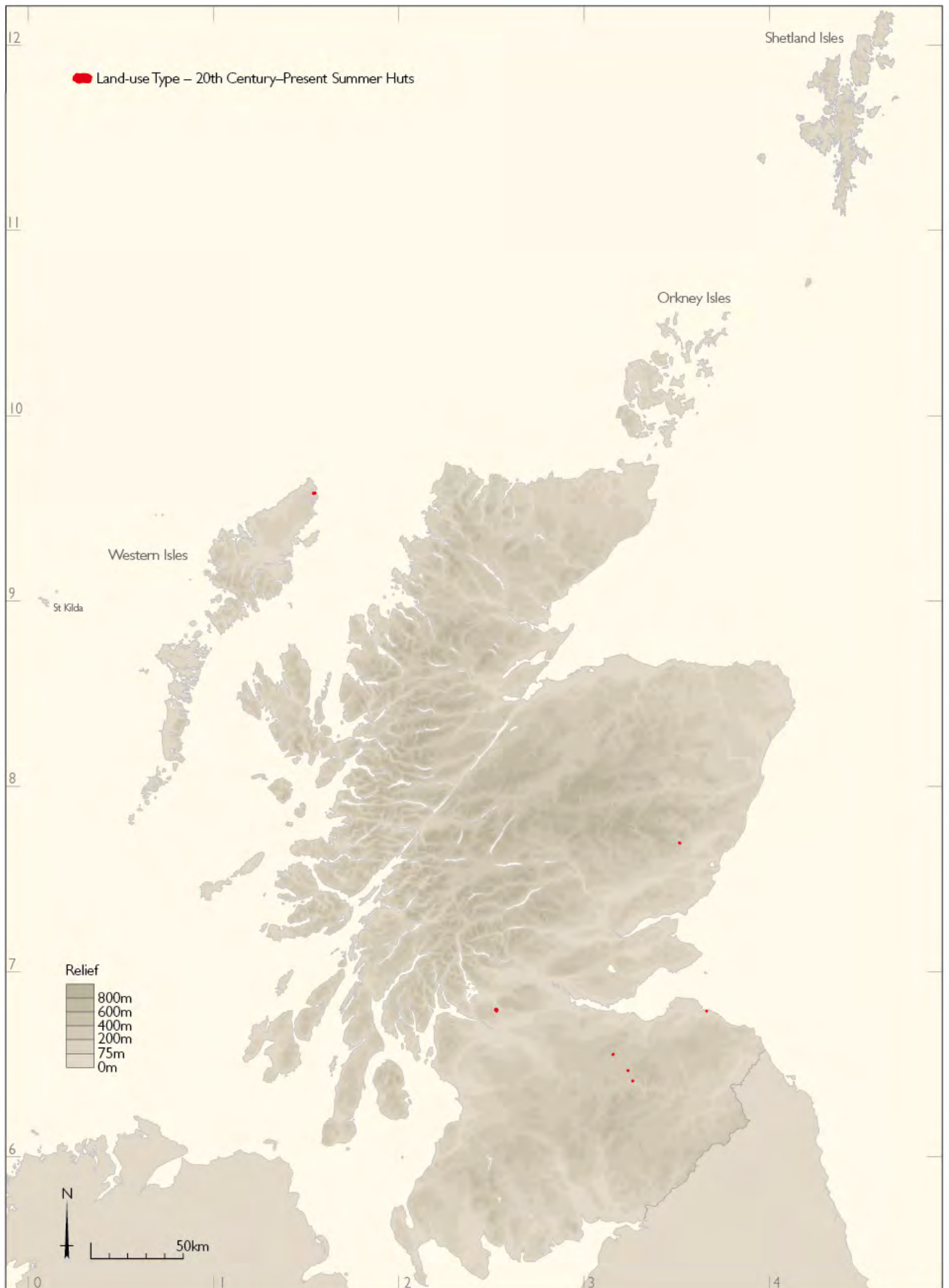
Fig 65 Land use and regional distribution. GV006931.



Current Land-use Type of land that has been interpreted as 20th Century–Present Summer Huts



Area (ha) – by region – of land that has been interpreted as 20th Century–Present Summer Huts



Map 23 Distribution of 20th Century–Present Summer Huts. GVO06876.

The landscapes affected by summer huts are quite small. The site layout was dependent on the local topography, vegetation, water and access. Most Summer Huts sites grew organically, presenting a haphazard appearance, either in groups or isolated huts, many with small enclosures surrounding each building. The early huts tend to be quite small, with no running water or other services. As they were built to an individual plan each hut can have its own unique appearance and layout and display very different architectural styles, ranging from square

sheds to complex buildings with ad hoc extensions added as required. In the example near the Butt of Lewis, a couple of huts follow the blackhouse tradition of building. Internally most have a living room, which acts as a kitchen and dining room, and one or perhaps two bedrooms. The age of huts can be uncertain, but most were built between 1920 and 1960 (61 percent based on a 1999 survey). In 2013, the Carbeth Hutters Community Company bought 90 acres of the estate in the first case of community ownership for ‘hutters’.



Fig 66 Summer Huts at Carlops, Scottish Borders. DPI51435

19th Century–Present Reservoir and Late 20th Century–Present Power Generation

(MAP 24 & FIG 68)

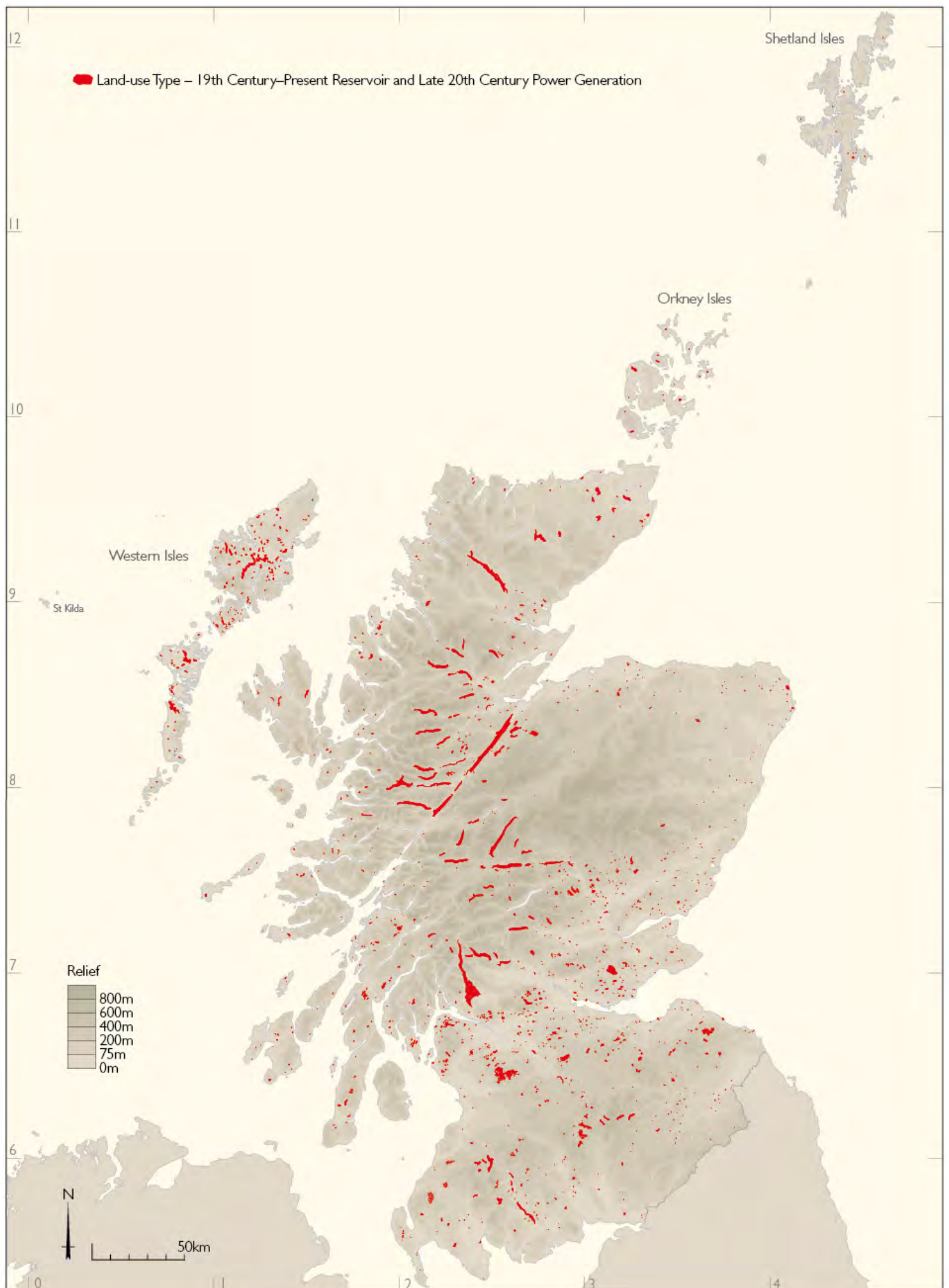
Coal and Nuclear Power by Richard Craig

The use of electricity in industry and domestic homes began in the late 19th century but it was not until the mid-20th century that it was widespread in Scotland. Increased demand led to hydroelectric schemes in the Highlands and the construction of coal-, nuclear-, oil- and gas-fired power stations throughout Scotland. These stations were never common, with just over 20 built. Most were constructed during the 1950s to 1970s, with Pinkston, Glasgow being the earliest coal-fired station, commissioned in 1901. However, with increasing environmental and public-safety concerns most stations have now closed. Torness, East Lothian and Hunterston B, North Ayrshire nuclear power stations, commissioned in the 1970s and '80s,

remain operational and Longannet power station in Fife, the last coal-fired power station in Scotland, is now closed. Longannet is located on the shores of the tidal River Forth and is a large distinctive structure that dominates the landscape. It was constructed on reclaimed land and the original coastline can still be traced to the north. Most power stations of this type were located next to the shore because water is needed to cool waste heat generated during the production of electricity. Water was also needed to pump coal ash out of the plant. Usually this waste was dumped along the coast in purpose-built ash lagoons: a form of landfill (Fig 67). Over time the water would drain off the ash and the area could be used for recreation. Torness power station was commissioned in 1988 and was the last of the second-generation nuclear power plants to be built in the United Kingdom. Located to the south-east of Dunbar, East Lothian the plant is similar in size to a coal-fired station with a large generating building but without the large chimney stack. This power station is capable of supplying electricity to over 2 million homes.



Fig 67 Longannet power station, with its chimney visible in the background, produced huge quantities of ash that was stored in the lagoon at Preston Island. DPO88447.



Map 24 Distribution of Late 20th Century Power Generation and 19th Century–Present Reservoirs. GV006877.

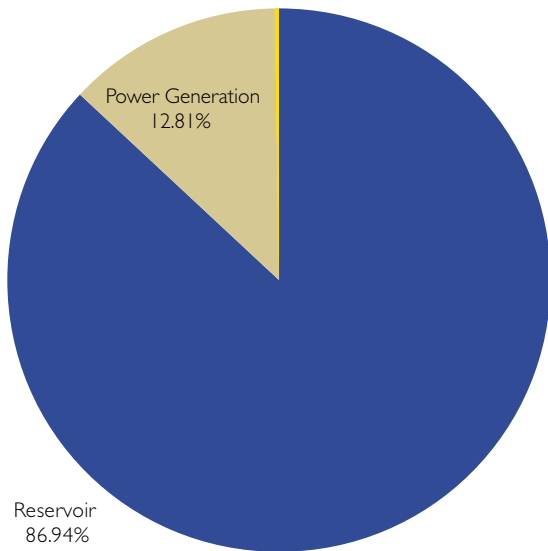
Fossil fuel and nuclear power stations are a reliable and economic way to produce electricity on a large scale. Unfortunately, the burning of coal gives out large quantities of carbon dioxide and other pollutants. This has meant that governments are actively looking to other more environmentally friendly ways to produce power. Hydro-schemes, first built in Scotland in the early 20th century, are a good alternative, as are wind farms, which have become popular in the early 21st century.

Wind and Hydro Power by Richard Craig

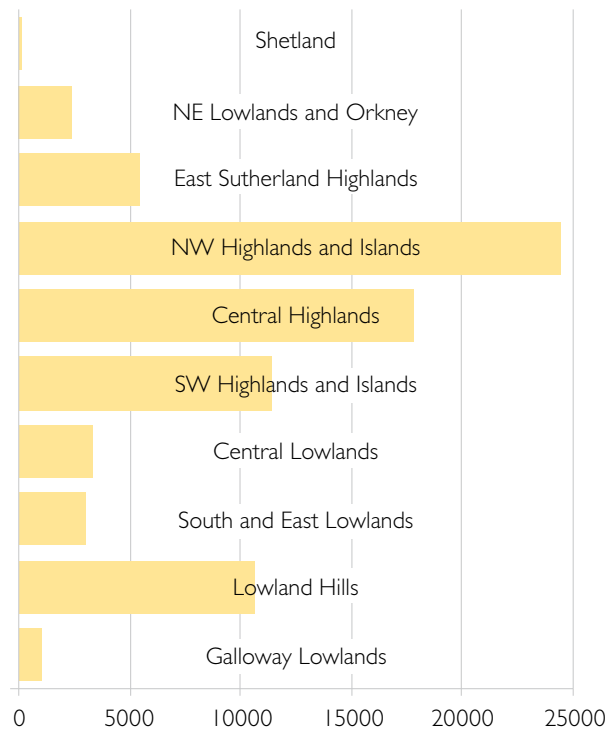
Today environmental concerns mean that governments are keen to move away from producing electricity in fossil and nuclear power stations to renewable energy sources like hydroelectric schemes and wind farms. Hydroelectric schemes have been around since the late 19th and early 20th centuries and produce around 12 percent of Scotland’s electricity. They are found throughout the country, with a concentration of sites in the Highlands (Fig 69). The oldest schemes were constructed to provide power for the aluminium industry, like the Kinlochleven power station, but many date from after 1948 when the electricity supply was nationalised.

Fig 68 Land use and regional distribution. GV006932.

● Others, less than 1%: Rough Grazing, Managed Woodland, Rectilinear Fields and Farms, Landfill Site, Quarry, Recreation Area, Plantation, Opencast Site



Current Land-use Type of land that has been interpreted as 19th Century–Present Reservoir and Late 20th Century Power Generation



Area (ha) – by region – of land that has been interpreted as 19th Century–Present Reservoir and Late 20th Century Power Generation

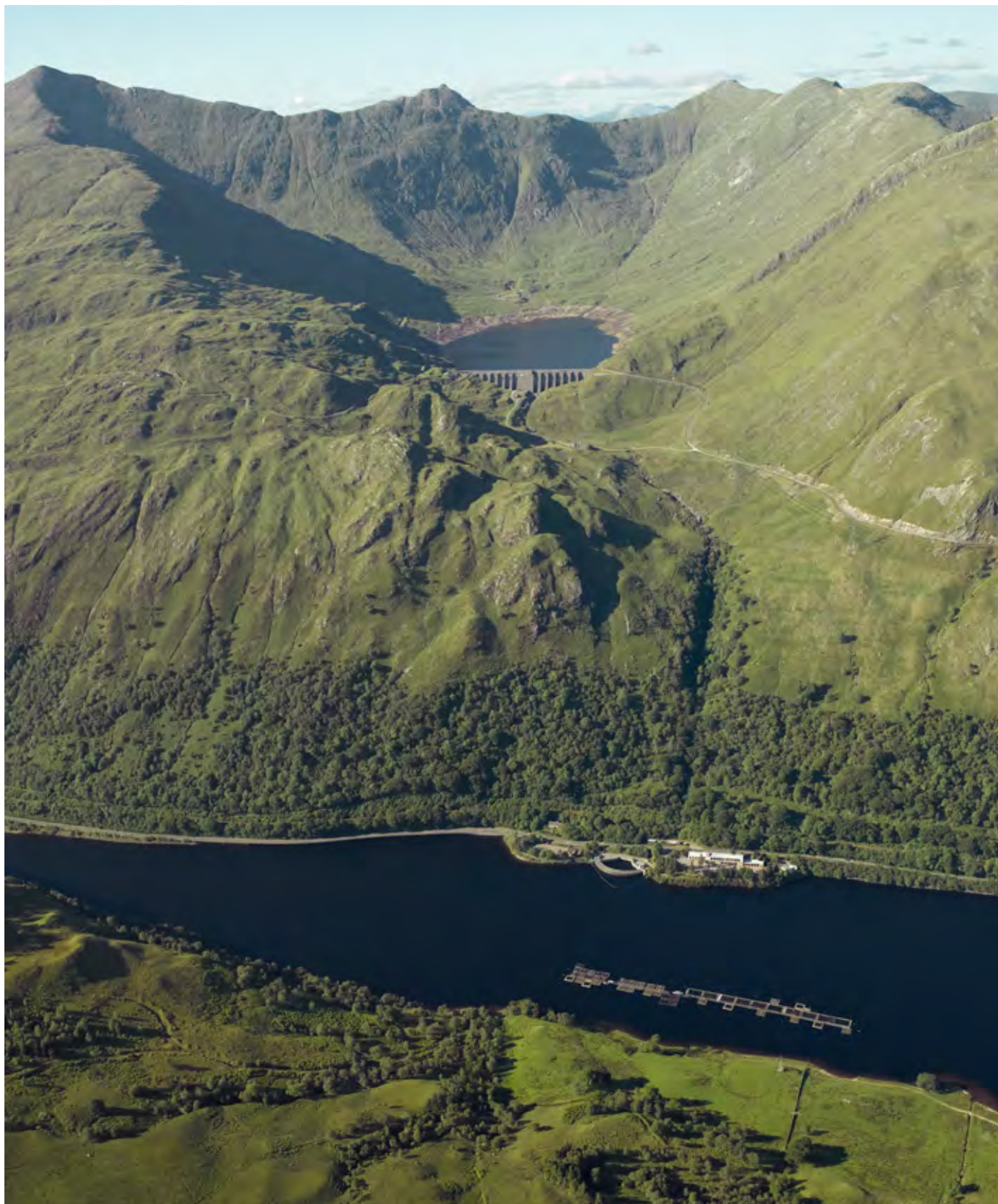


Fig 69 Ben Cruachan hydro scheme, Argyll, showing the reservoir in the hanging valley of the mountain. DP017797

The Kinlochleven hydro-scheme and aluminium works was a massive undertaking and involved creating the Blackwater Reservoir and a planned village for workers at the site. Water was channelled a distance of around 4 miles from the reservoir to the power station and then discharged into the River Leven. The aluminium works is now demolished but the power station survives in working order. It is more usual to find the hydropower station next to a reservoir, like the Pitlochry power station, opened 1950, on the south-east side of Loch Faskally reservoir in Perthshire. The construction of this reservoir led to the flooding of the golf course of Pitlochry Golf Club, and farms and even complete villages were often lost under water as a result of these schemes. Not all reservoirs were built for power supplies; they also provide drinking water, the most famous being the Glasgow Corporation Water Works which raised the level of Loch Katrine for this purpose. Power plants themselves rarely extend over a hectare in extent, and only the larger ones are therefore recorded on the HLA map.

Wind farms can be found next to built-up areas but they are mostly constructed on hilly ground or in forests in rural areas. Harnessing power from the wind to produce electricity was first achieved by James Blyth in 1887 and in 1951 the first wind turbine, in Orkney, was connected to the national grid. Recently there has been a rapid increase in the construction of wind farms and there are now over 200 operational wind farms in Scotland, with at least 2400 turbines. This boom has meant that since 2014 wind farms can produce enough electricity to supply all Scottish households when there is sufficient wind.

This rapid expansion of wind farms has been met with some opposition because of their visual impact and that of their associated infrastructure. For example, the Drone Hill wind farm in the Scottish Borders covers some 2½ square miles of moorland and farmland with its turbines connected by a network of roads; the rectilinear fields and moorland survive under the turbines, though reduced by the road network. Reservoirs for hydro-schemes also take up large amounts of land and can have severe impacts on other land uses: Loch Faskally reservoir, Perth and Kinross is spread over 3 square miles and evidence for previous land use has been submerged.⁹

Late 20th Century–Present Motorways and Major Roads

(MAP 25 & FIG 70)

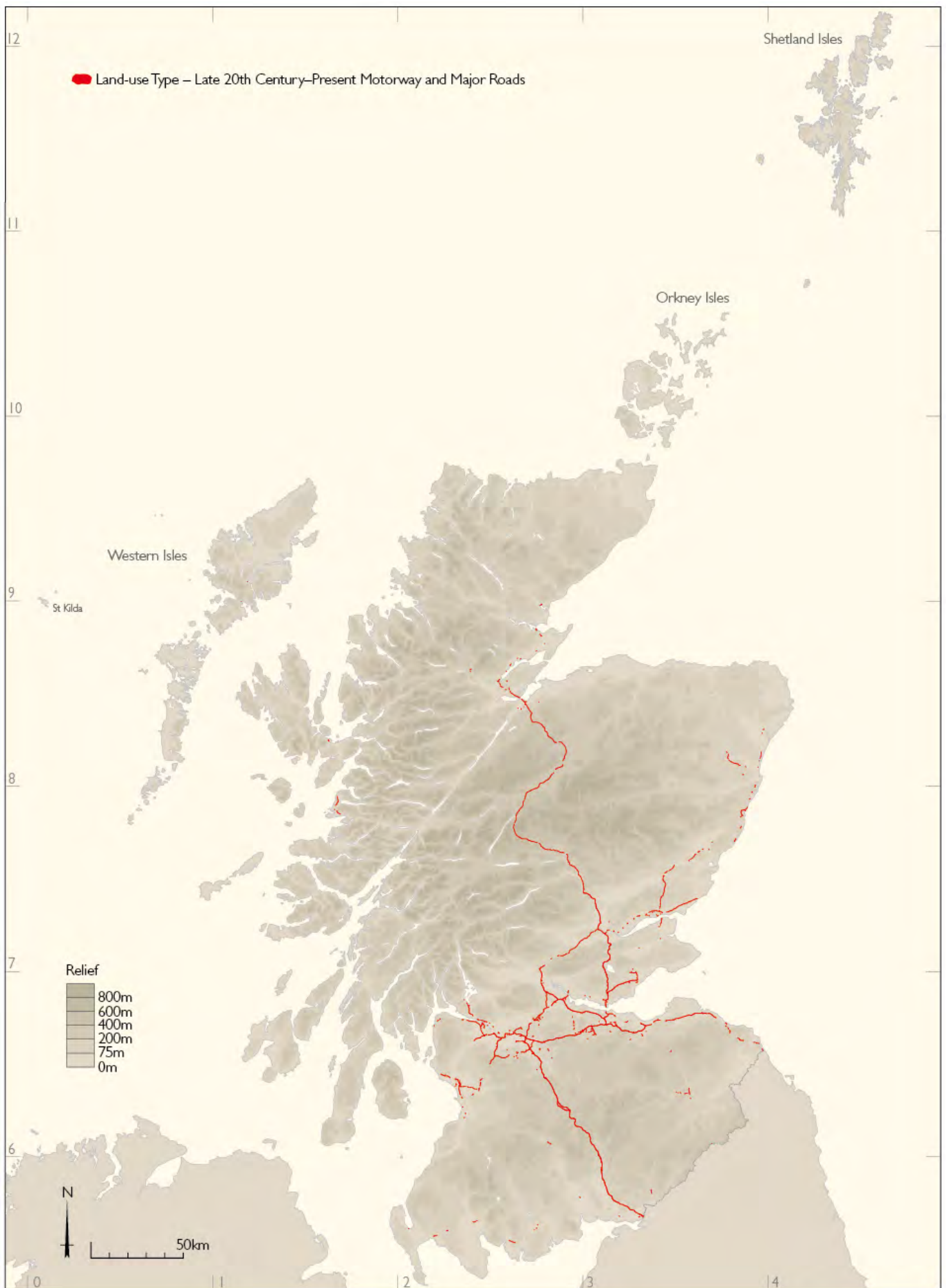
A New Network for the Motor Car by Richard Craig

The current motorway network in Scotland links all the main cities, covers over 380km, and carries over 5300 million vehicle journeys annually. The limitation of scale adopted for the HLA map, which only includes motorways and roads with embankments that extend over 40m in width, nevertheless means that most of the main roads in and around Glasgow and Edinburgh have been recorded, as well as the A74 and A9 connecting Gretna Green in the south with Inverness to the north. Motorway service stations, park-and-ride schemes, like Ferrytoll at Inverkeithing, are also part of this transport and communications Land-use Type.

Motorway development was largely due to improvements in the production of the automobile and private ownership of cars. Car usage in the United Kingdom increased from the 1930s and by 1970 the number of licensed cars in the UK was over 10 million.

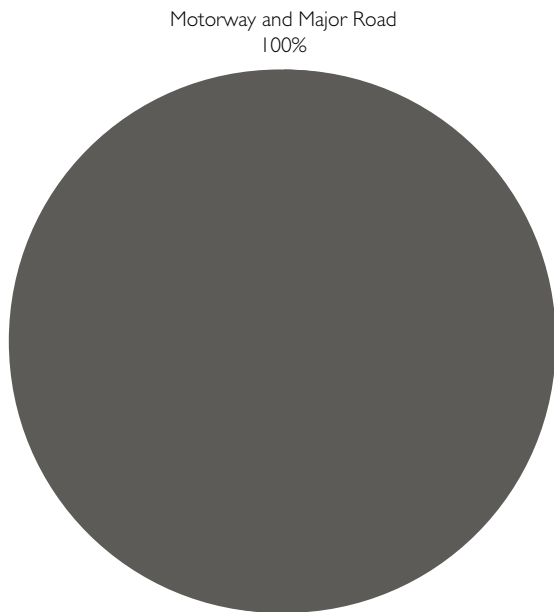
Demand for purpose-built roads to enable car journeys to be done at speed was seen as an important step in modernising communication networks, and plans were made in 1938 for a motorway network to connect Glasgow to London. However it was not until after the Second World War that motorway development began; the 8¼-mile-long M6 Preston Bypass was opened in December 1958 and was the UK's first motorway. The 1960s to 1980s saw an explosion in the construction of dual-carriageway roads which were met with almost universal approval. By 1980 a basic motorway network was in place.¹⁰

As a consequence of the increased use in car and bus transport in the first half of the 20th century rail transport was reduced. Railway lines started to be closed from the 1920s and by the 1960s over 6000 miles of railway track had been removed following the Beeching report in 1963. With the railway network shrinking in size, more goods were moved through the expanding motorway system. Because of the relatively narrow gauge of many branch lines, only the larger parts of the network have been mapped as railway features in this assessment, such as the major junctions and depots, whether or not in active use.

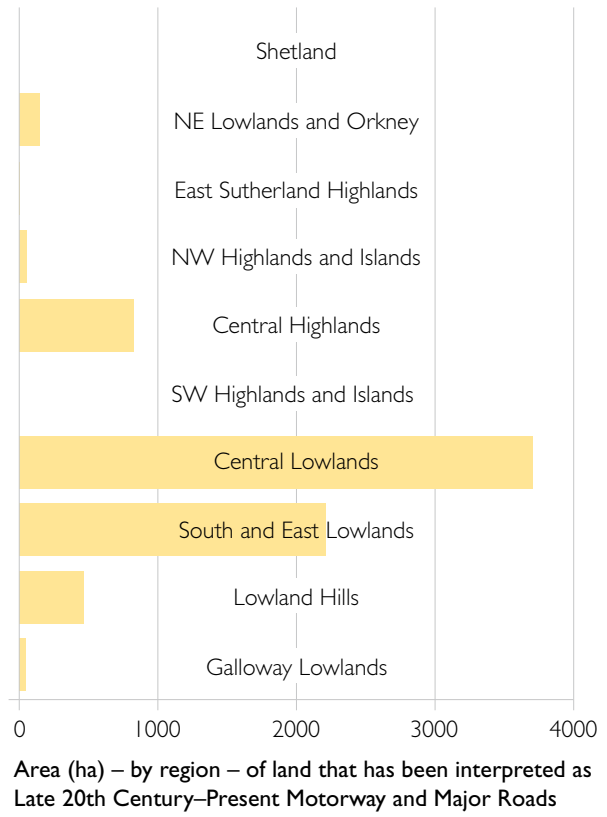


Map 25 Motorway and major road network as mapped by HLA. GVO06878.

Fig 70 Land use and regional distribution. GV006933.



Current Land-use Type of land that has been interpreted as Late 20th Century–Present Motorway and Major Roads



Area (ha) – by region – of land that has been interpreted as Late 20th Century–Present Motorway and Major Roads

20th Century–Present Airfield

(MAP 26 & FIG 72)

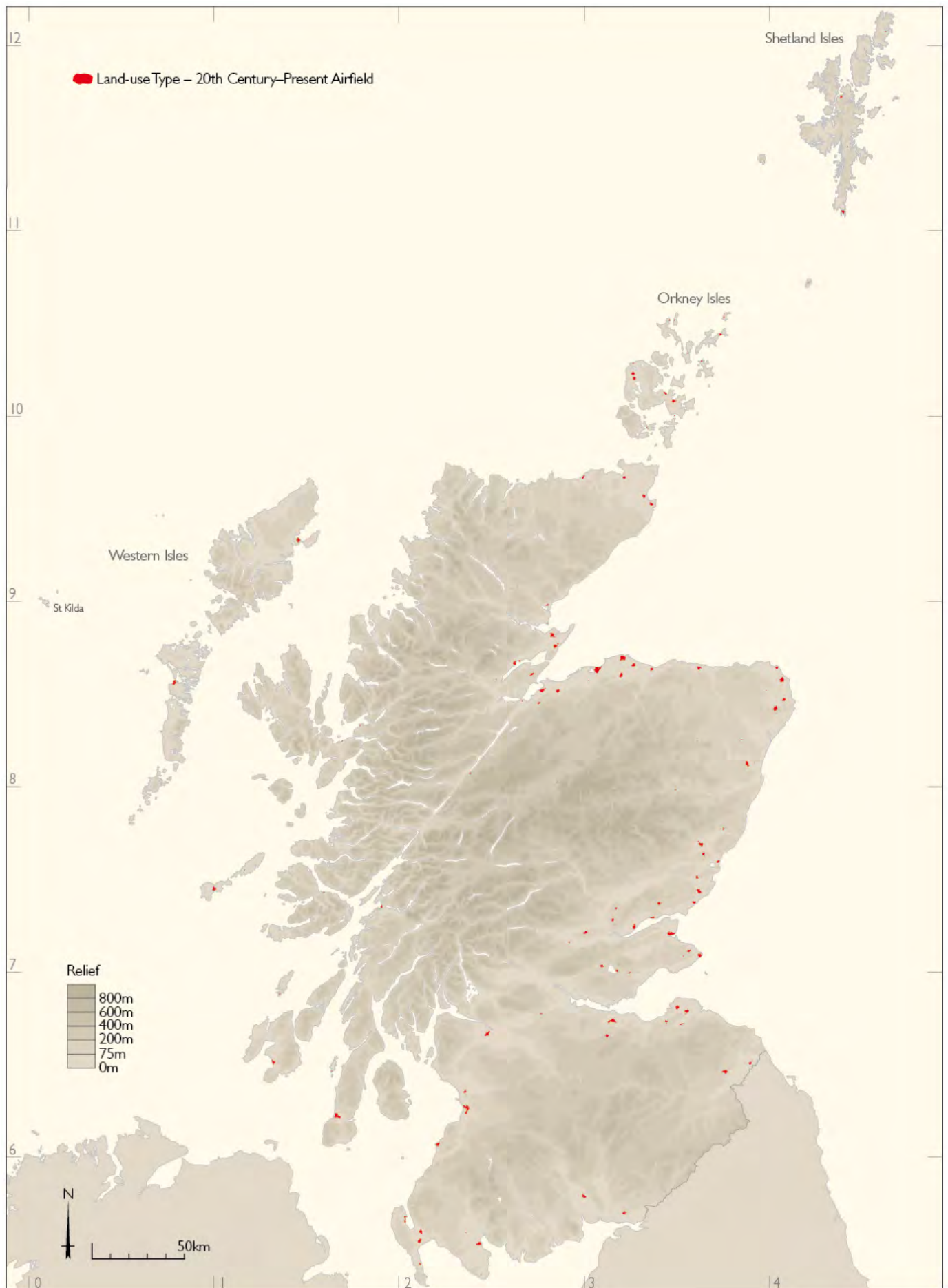
Aerodromes by Allan Kilpatrick

The growth in importance of aerial warfare during the 20th century has left a lasting impression on the Scottish landscapes. The First World War saw the first large airfield and airship stations constructed across Scotland. The number of sites was small, although the airship stations were very large. In the Second World War almost every airfield was reused and a large number rebuilt. The number of airfields grew massively with the very different demands of

the Second World War, and all major civilian airfields owe their origins to the RAF Second World War airfield expansions. Both military and civilian airfields require extensive land for runways and associated infrastructure. The growth of civil traffic in the late 1960s and particularly since 1997 has seen large expansions of the passenger terminals and associated servicing and maintenance areas. Glasgow, Edinburgh and Prestwick all saw new or extended runways added to cope with jet-engine aircraft, as did military airfields. A number of small civilian airfields have been built for limited commercial and recreational flying, in particular the many small airfields serving the Western and Northern Isles, Glenrothes, Cumbernauld and glider flights out of Portmoak in Fife.



Fig 71 The military airfield at Turnberry, Ayrshire is now Trump Turnberry Golf Course and was previously parkland belonging to the castle on which the lighthouse sits. DP040245.



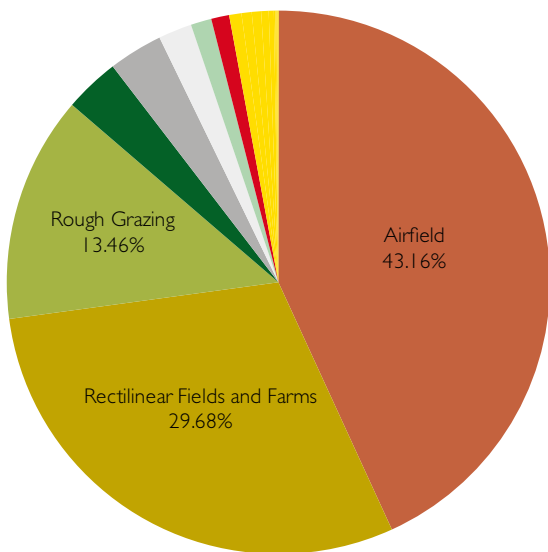
Most military airfields have now been abandoned (Fig 71). Of the First World War airfields, East Fortune and Montrose survive but are incorporated in later Second World War airfields. Lenabo in Aberdeenshire was never rebuilt and its remains survive under forestry. The number of Second World War airfields exceeds 90, ranging from the large bomber bases to small landing grounds. The standard arrangement of runways resembled a letter A, where three runways intersected each other. Two naval air stations, Crail, Fife and Hatston, Orkney had four runways. Others were limited to one or two due to their location and local topography. These large airfields had many buildings, from hangars, workshops, bomb depots, dispersal areas, extensive accommodation camps to accommodate up to 2000 servicemen and women, and defensive buildings such as pillboxes. Depending on the date of the airfield the servicing and

accommodation were either grouped together to one small area, as in pre-Second World War examples at Lossiemouth, Moray, Montrose, Angus and Turnhouse, City of Edinburgh or the camps and hangars were dispersed around the edge of the airfield, as was the practice during the war, for example at Tain and Fearn, Highland.

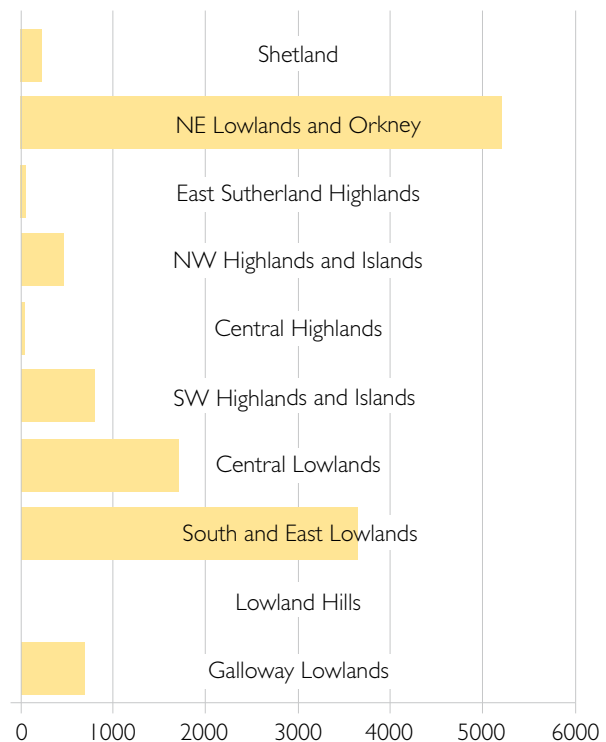
Of those not in use, many features often survive and have not been subject to large-scale developments because of their size and location. Runways, especially those that were paved, can still be found. Hangars often remain, reused for agricultural or industrial purposes. However, many buildings have been lost to time, and even more are in varying states of decay, though some have been restored and given a new life, such as the airfield control tower at Fearn.¹¹

Fig 72 Land use and regional distribution. GVO06934.

- Plantation 3.28%
- Industrial or Commercial Area 3.21%
- Military Site 1.99%
- Recreation Area 1.23%
- Urban Area 1.06%
- Others, less than 1%: Golf Course, Power Generation, Industrial-scale Farming Unit, Planned Rectilinear Fields and Farms, Restored Agricultural Land, Managed Woodland, Quarry, Designed Landscape, Smallholdings, Seashore



Current Land-use Type of land that has been interpreted as 20th Century–Present Airfield



Area (ha) – by region – of land that has been interpreted as 20th Century–Present Airfield

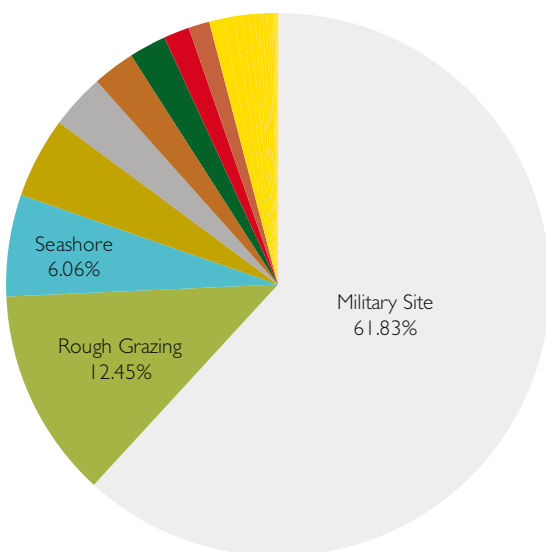
20th Century–Present Military Site (MAP 27 & FIG 73)

Defence in the Two World Wars and After
by Allan Kilpatrick

The two World Wars of the 20th century left a huge mark on the landscape of Scotland. The military – army, navy and air force – have used the land for every aspect of their roles, for recruitment, training and strategic location; all essential to the defence of the UK.

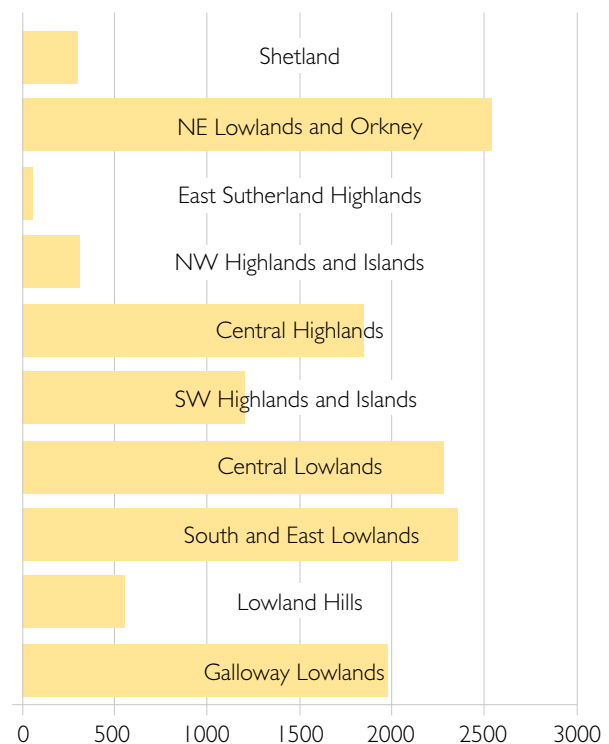
Fig 73 Land use and regional distribution. GV006935.

- Rectilinear Fields and Farms 4.79%
- Industrial or Commercial Area 3.28%
- Recreation Area 2.51%
- Plantation 2.21%
- Urban Area 1.53%
- Airfield 1.24%
- Others, less than 1%: Managed Woodland, Maritime Installation, Quarry, Holdings, Country Park, Designed Landscape, Traditional Peat Cutting, Cultivated Former Parkland, Golf Course, Planned Rectilinear Fields and Farms, Planned Smallholdings, Unenclosed Improved Pasture, Opencast Site, Restored Agricultural Land, Crofting Township, Industrial-scale Farming Unit, Reservoir, Power Generation

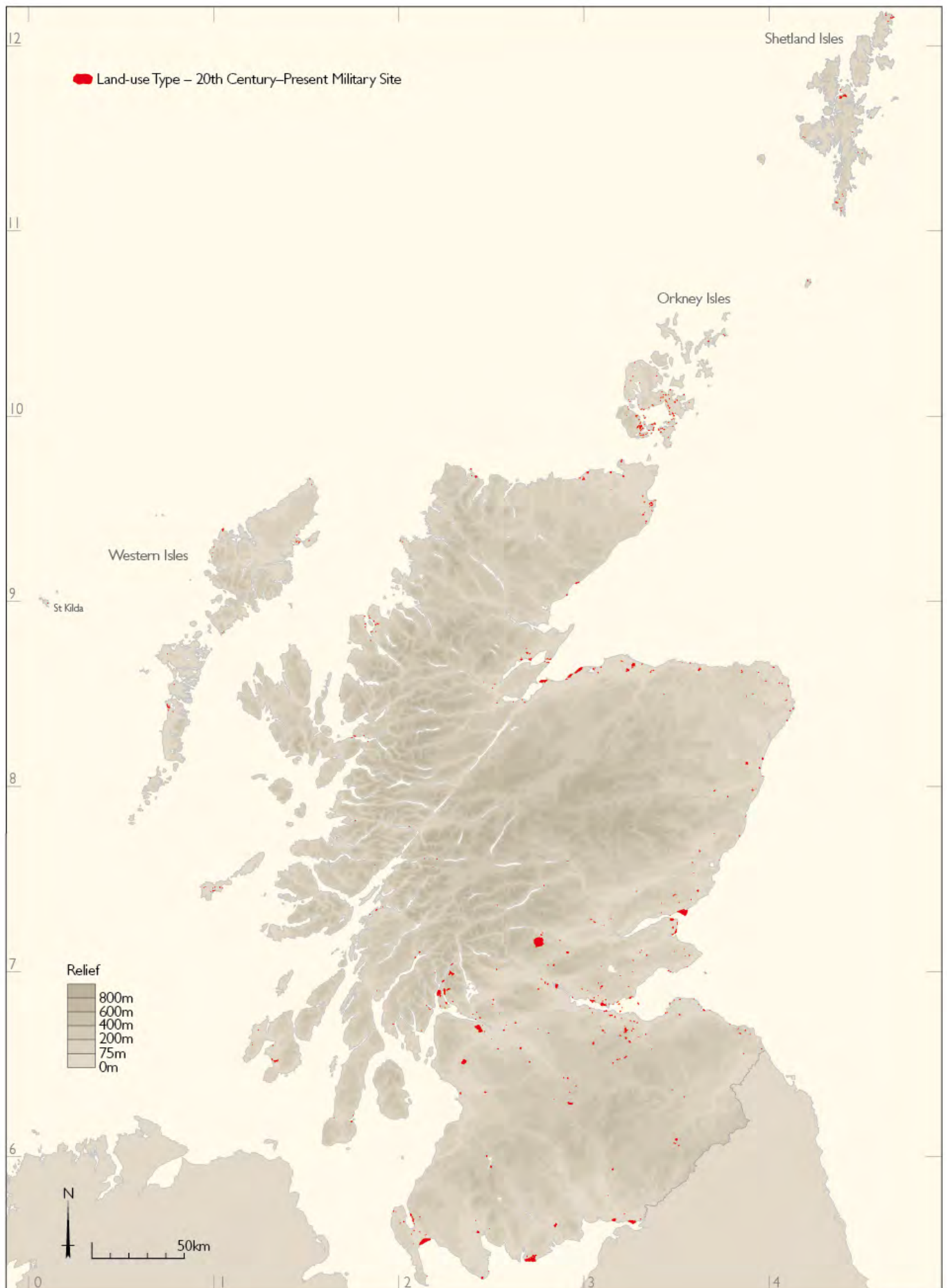


Current Land-use Type of land that has been interpreted as 20th Century–Present Military Site

While these sites can be large and upstanding, the anti-invasion and coastal defences were often linear and very narrow and consequently have not been recorded by HLA. However the coastal batteries of both wars occupy large areas and the flat intertidal zone has clear evidence of anti-glider poles. Most east-coast ports had onshore batteries, many of which survive, in particular those around the largest naval base of both wars at Scapa Flow, Orkney. Accommodation camps including internment and PoW camps, depots, radar sites and barracks left their mark on the mainland (Fig 74). These sites tend to be marked by the foundations of buildings, mostly concrete bases of Nissen huts, but some do remain upstanding. Radar stations tend to be fairly well spread out and located by the coast and mostly on high ground. Many military sites were completely removed after the Second World War and camps in particular were lost. The distribution is widespread across Scotland, but is mainly coastal, or focused in the Central Belt. In rural areas the remains may survive intact, but those near or beside towns on good farmland have often been lost.



Area (ha) – by region – of land that has been interpreted as 20th Century–Present Military Site



Map 27 The location of military bases and estates is partly related to coastal firing zones and training areas. GVO06880.



Fig 74 The First World War Internment and POW camp at Stobs, Scottish Borders showing the rows of bases of the long barrack-block buildings. DP224760.

Aside from airfields, the military still has plenty of activity, albeit recent cutbacks are having an effect on the number of active bases and training areas. There are substantial naval bases on the Clyde, home to the UK nuclear deterrent and associated infrastructure for the nuclear weapons; at Rosyth on the Forth; as well as the refuelling bases at Campbelltown and Loch Ewe. The army has military barracks and training areas across Scotland and is expanding by taking over the former airfields of Kinloss and Leuchars to house the returning former army of the Rhine from Germany. There are large

training areas beside the barracks that exist at Fort George, Inverness-shire, Barry Buddon, Angus, Pentlands (Castlelaw and Dreghorn), Midlothian and Kirkcudbright. The result of the occupation by the army of these areas is that the previous landscape has been fossilised, preserving areas rich with prehistoric and medieval archaeology, in particular at the Kirkcudbright ranges. Within urban areas, some military complexes have been turned over to the Army Reserves (formerly the TA), as at Stirling. Radar and radio stations are also present but not in large numbers or occupying large areas.¹²

20th Century–Present Commercial Peat Cutting

(MAP 28 & FIG 75)

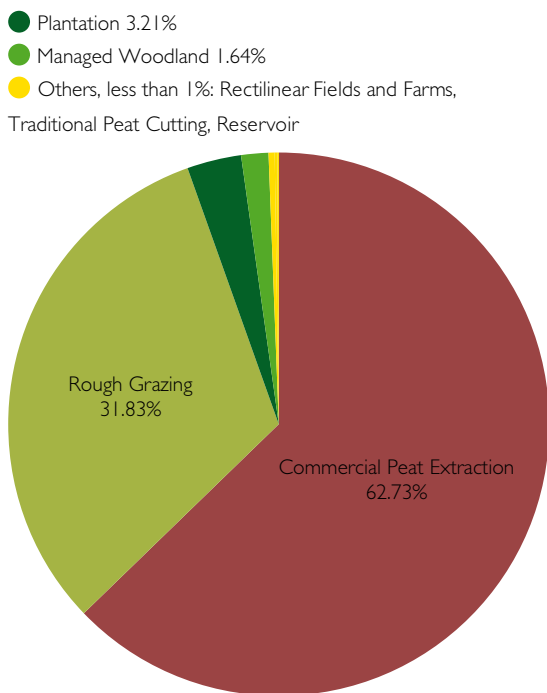
Large-scale Peat Extraction by Richard Craig

Commercial peat-cutting areas are found throughout Scotland, with a concentration of sites in the Western Isles and along the Central Belt (Fig 76). Moorland that has been commercially stripped of peat differs in appearance to spade-cut moors, as the moor is completely cleared of all vegetation in a systematic pattern of parallel strips, and drains are usually cut to ensure the peat bog does not become waterlogged. Often narrow-gauge railways are constructed to enable

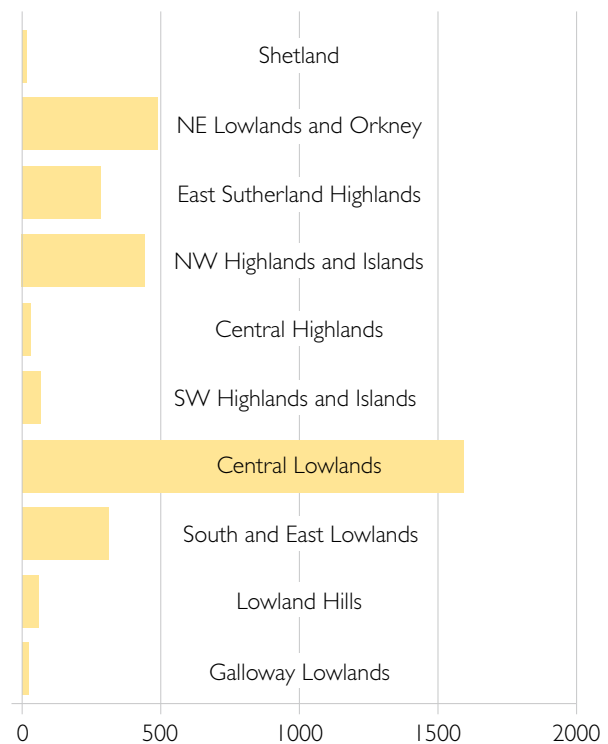
the cut peat to be transported from the moor into processing buildings such as at the former Moss Moran peat works, Fife. These sites, if abandoned, are clearly visible on aerial photographs as industrial wastelands, which if left unattended slowly return to scrub.

Fuel and compost are common uses for peat but an important market is found in the distilling industry where peat is burnt to dry barley grain, and hence gives whisky its smoky flavour. Spade-dug peats would originally have been used by the distilleries but developments in machinery from the late 19th century enabled businesses to flourish by milling peat. Peat used for fuel and whisky distilling is now harvested by large machines that cuts the peat and processes it into regular-shaped briquettes.

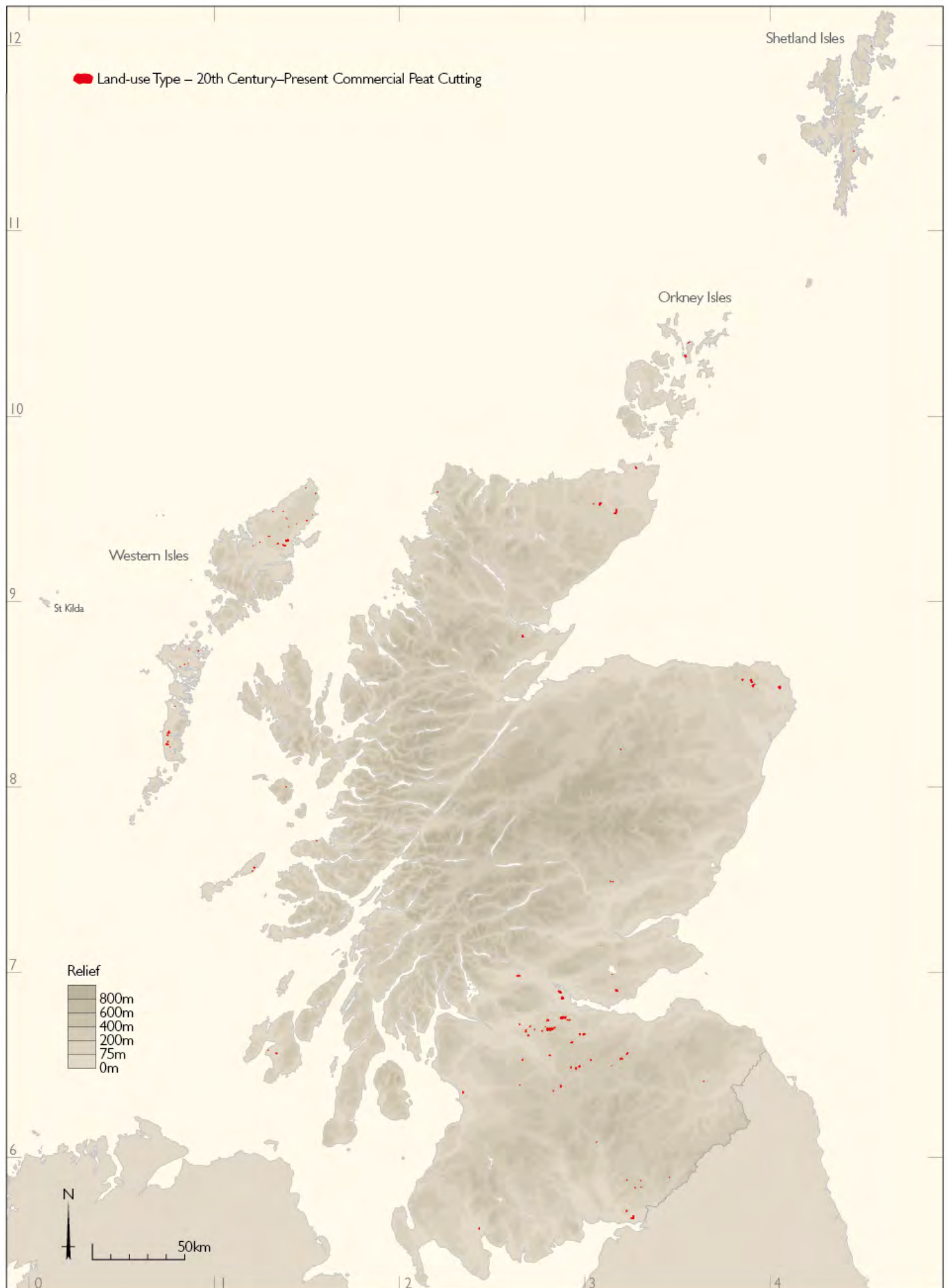
Fig 75 Land use and regional distribution. GV006936.



Current Land-use Type of land that has been interpreted as 20th Century–Present Commercial Peat Cutting



Area (ha) – by region – of land that has been interpreted as 20th Century–Present Commercial Peat Cutting



Map 28 Commercial peat extraction has both a Lowland and Highland distribution. GVO06881.

Crofters supplemented their income by selling hand-cut peats to distilleries, for example on Islay, and as fuel. Cutting peat by hand is very time consuming and labour intensive and is a practice that is becoming less common in highland Scotland. Some crofters are now starting to use machines to extract peat from moorland surrounding their crofts. The peat-cutting machine used for this process is smaller than the harvesters used by commercial firms but large enough to need a tractor to pull it across the moor. It resembles a large chainsaw that cuts into the ground extracting the peat,

which passes through the machine and is expelled as long sausages to the side. These long sausages are left to dry on the moorland before being cut into briquettes.

Environmental concerns about the destruction of peat bogs and the carbon released when peat burns means that its use is not encouraged, and peat-free composts are now becoming popular with gardeners. Nevertheless, commercial peat extraction has left unmistakable patterns of parallel strips on the Scottish landscape.



Fig 76 The access roads and rectangular extraction blocks of commercial peat cutting may be seen at Letham Moss, Falkirk in the Upper Forth Valley. DP009505.

Section Four:

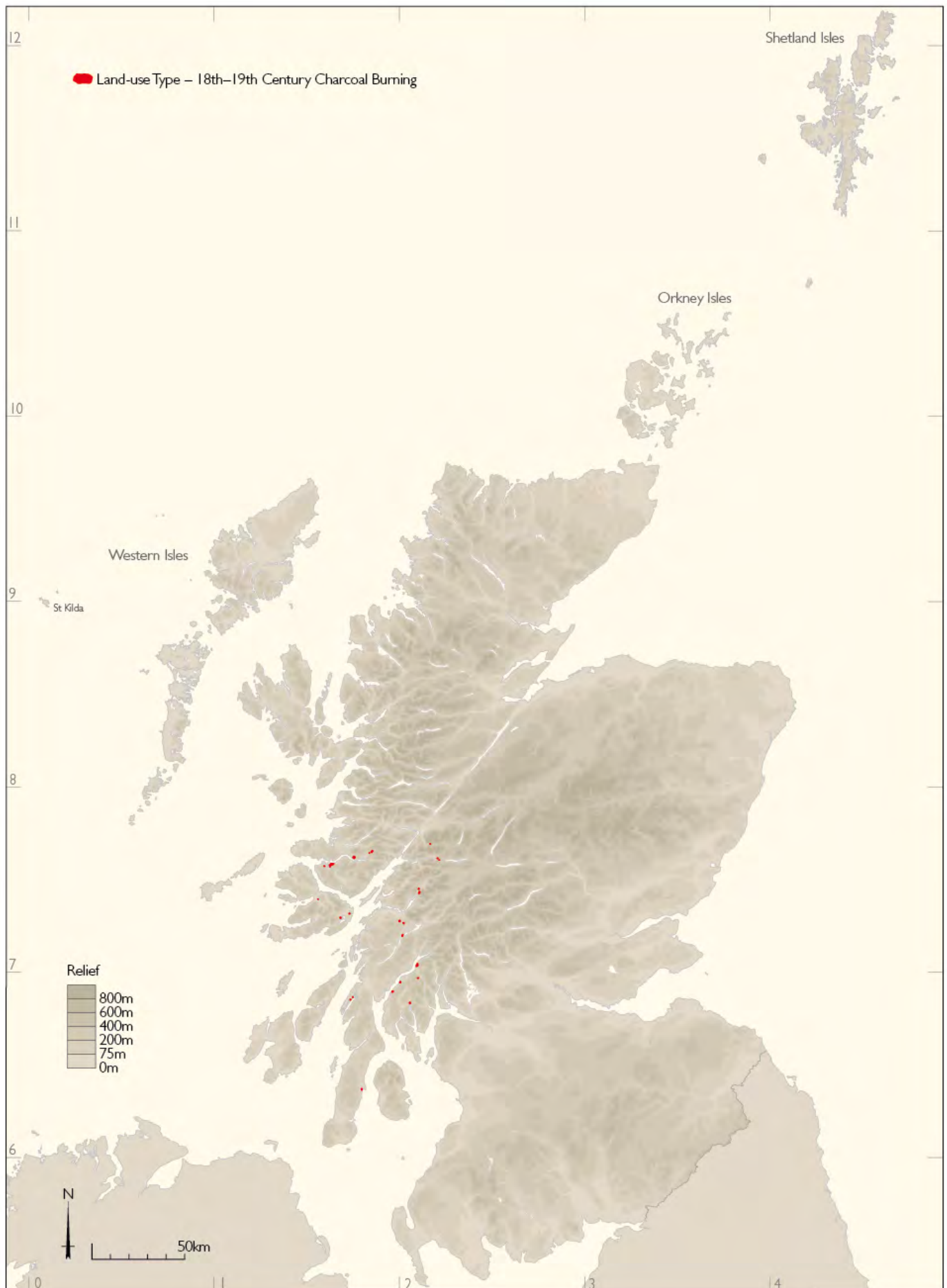
REDUNDANT LAND USES OF THE 18th AND 20th CENTURIES

The land uses identified above created the landscape with which we are familiar today. The following sections describe some less well-known land uses of the 18th and 19th centuries that were common before and during the agricultural and industrial revolutions but subsequently ceased to operate and became redundant, to be replaced by more recent land uses. These past land uses disappeared as a consequence of the economic, technological and social changes of the 20th century. They range from forgotten classes of agriculture such as water meadows, to timber ponds that were once vital methods of supporting the shipping industry, and relics of war like the numerous military airfields. Some redundancies, such as the canal network, have been covered in an earlier section, because they have been maintained as modern recreational benefits, and others like peat cutting have become almost redundant as communities in the north-west have moved to modern heating methods and commercial extraction under pressure of 'green' environmental policies.

18th–19th Century Charcoal Burning (MAP 29 & FIG 77)

The Archaeology of Charcoal Burning
by George Geddes

Charcoal-burning platforms and associated features related to the extraction of charcoal as fuel for furnaces are often found in association with managed oak woodlands of 18th century date. They are located in particular alongside the indented coastline of western Scotland where suitable woodland survived beside transport routes within reach of the embryonic iron industries, such as that at Bonawe, Argyll. The number of individual platforms at a site can range from one or two to dozens dispersed across several acres of ground. The hundred or more sites recorded in Canmore are found in Argyll, Dumfries and Galloway, Moray and Perthshire, and give only an indication of overall distribution.¹³ However, those that are extensive enough to be mapped by HLA are confined to Argyll and the south-west Highlands. The process of manufacture in Scotland was described by Lord Teignmouth in 1836 and, in some cases, documentation survives that details the contract arrangements that were in place between the estate owners and the furnace companies, for example in the Buccleuch or Breadalbane Papers in the National Records of Scotland.

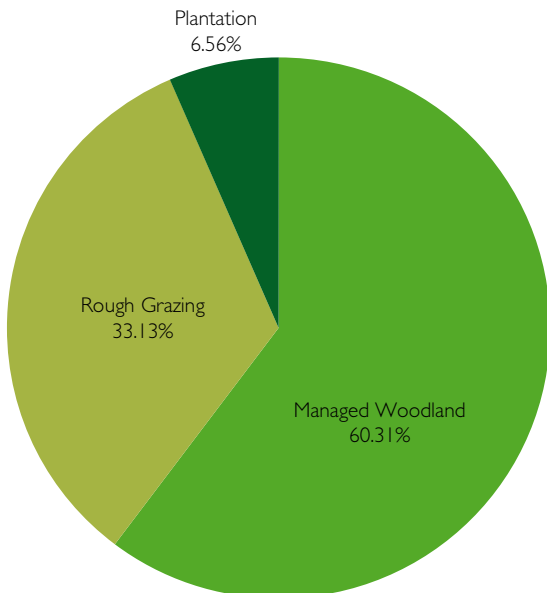


Map 29 Distribution of 18th–19th Century Charcoal Burning. Charcoal Burning was once more widespread but is best known in relation to the oak woodlands of Argyll which were exploited for charcoal and for tan bark. GVO06882.

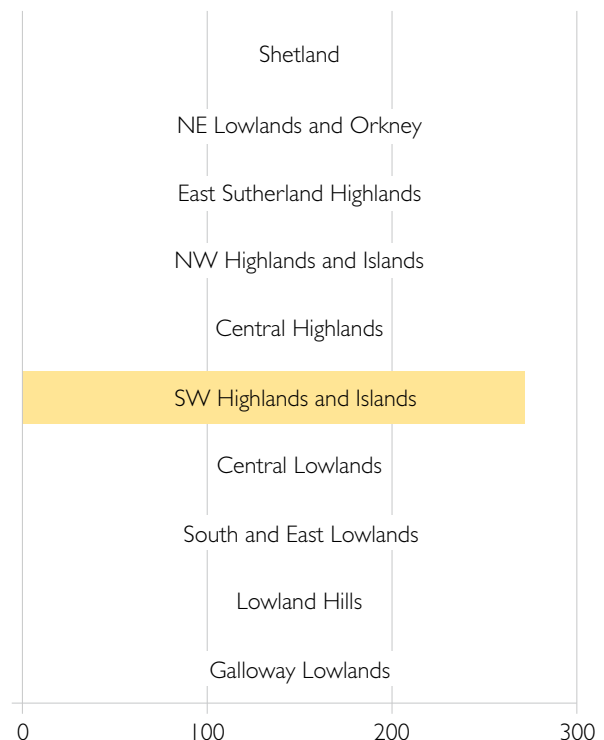
In what was perhaps the first study of the production of iron in Scotland in 1867, Macadam referred to bloomeries and charcoal production at Stuckreoch, Argyll, which supplied the Kames Gunpowder Works.¹⁴ However, the earliest examples of charcoal-burning platforms that were noted as part of an archaeological survey were recorded at Skipness, Kintyre, in 1919,¹⁵ while the first record by the Ordnance Survey was made in 1962 after the interrogation of aerial photographs of Allt Coire Lotha, Loch Etive, Argyll. A series of similar features, some with explicit documentary evidence, were noted in the RCAHMS Inventories of the County of Argyll between 1968 and 1988, including Achanlochan; Loch Creran and Loch Etive; Loch Ba; Ardentraive; Dunloskin Wood (Fig 78); Lephinchapel and Taynish. Typically the platforms are circular levelled areas about 7–8m in diameter, which are set into the slope of the ground at the back and terraced at the front. The front and back may be edged with stone to provide a stable base.

Leaving these individual records aside, the only large-scale survey of the numerous recessed platforms in Argyll was begun in the 1960s by Betty Rennie and the Cowal Archaeological Society who identified as many as 2000 examples which they interpreted as unenclosed platform settlements.¹⁶ Ten of the platforms were subsequently excavated, and although evidence for charcoal burning was found in the majority, Rennie considered them to have been constructed as prehistoric or early historic hut platforms. While the taphonomy and function of these sites makes excavation and dating difficult, early radiocarbon dates from these excavations suggest that charcoal production may have started much earlier than usually suggested, or that, in some cases, earlier roundhouse sites may have been reused. However, a 2003 excavation at Taynish produced unequivocal evidence of charcoal production.¹⁷

Fig 77 Land use and regional distribution. GV006937.



Current Land-use Type of land that has been interpreted as 18th–19th Century Charcoal Burning



Area (ha) – by region – of land that has been interpreted as 18th–19th Century Charcoal Burning



Fig 78 Charcoal platform at Dunloskin Wood, Argyll. DP213496.

The classification of the features identified during field survey as charcoal-burning platforms still relies on a number of factors: the occurrence in large numbers distributed over a large area, often an area associated with managed oak woodland of evident historic character; the morphology of the

features themselves; and documentary evidence. Uncertainty of classification is compounded by a lack of associated features one might expect from settlements, such as cultivation remains, and for the absence of domestic finds or hearths in excavation.¹⁸

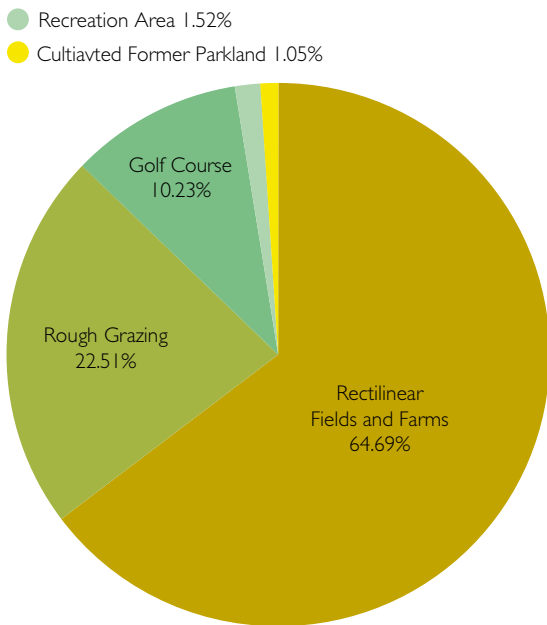
18th–19th Century Water Meadow (MAP 30 & FIG 79)

Water Meadows in Scotland by Iain Fraser

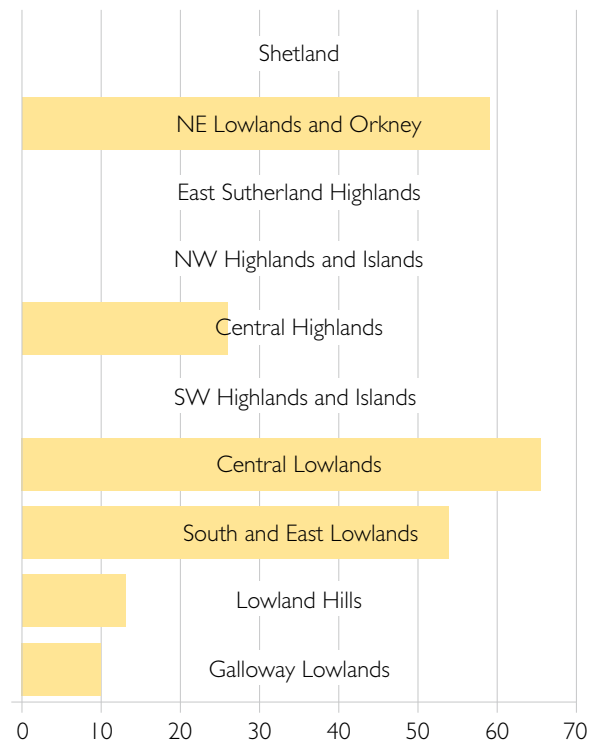
Over 200 water meadows have been identified through HLA so far in Scotland, concentrated in the Lowlands. Where they have been robbed of their associated structures, such as sluices, and the drains have been filled, they only survive as areas of low ridges, inconspicuous at ground level, but sometimes retaining traces of the tell-tale groove of crest-line feeder gullies. On aerial photographs they are more distinctive, although at first sight may appear to be nothing more than an area of rough grazing, dissected by reed-choked drains. Closer examination reveals the fine detail of weirs, lades, sluices, rig, conductors and drains.

Artificial irrigation is not a technique usually associated with Scotland, a country whose climate benefits from frequent rainfall throughout the year. However, from at least the early 17th century water was occasionally manipulated in an attempt to improve coarsely vegetated hill ground, or to feed arable fields and plantations. The system of water meadows employed in southern England, which formed a crucial element of the pastoral economies of Hampshire, Wiltshire, Dorset and Gloucestershire, was a technique that began to be experimented with elsewhere in the later 18th century.

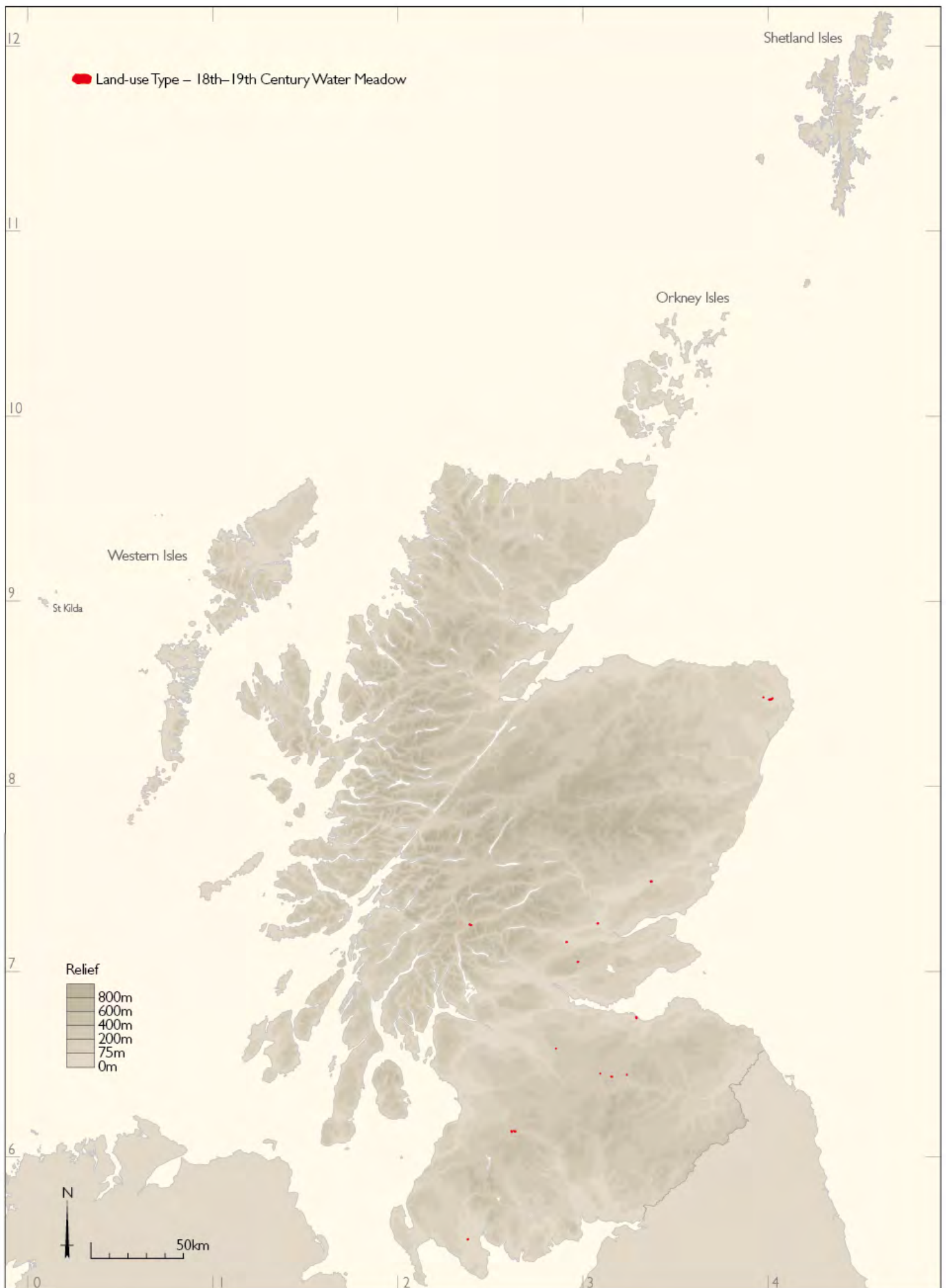
Fig 79 Land use and regional distribution. GV006938.



Current Land-use Type of land that has been interpreted as 18th–19th Century Water Meadow



Area (ha) – by region – of land that has been interpreted as 18th–19th Century Water Meadow



Map 30 The distribution of 18th–19th Century Water Meadows. Only a scatter of water meadows have been mapped, generally with a lowland bias. GVO06883.



Fig 80 The furrows and ridges of this water meadow are fed by a header drain that curves around the end. Townhead Farm, Lanarkshire. SC505315.

In the 1790s the Highland Agricultural Society invited the Gloucestershire ‘flooder’, Charles Stephens, to introduce the technique to Scotland. An ambitious scheme saw meadows established across the Buccleuch estates; however, a combination of inappropriate location and demand for arable land saw most of these ploughed up after only a few years. The 1820s to the 1840s saw a second period of interest, with meadows being established through much of the country from Caithness to Galloway, but with a particular concentration around the upper Tweed. Many of these appear to have been more successful, and continued in use until gradually rendered obsolete by new fodder crops and mechanization later in the century. Many meadows survived largely intact as rough grazing until after the Second World War and were recorded in aerial photography of the 1940s to 1960s.

Simply put, a water meadow comprised an area of haughland beside a river or sizeable burn. This would be laid out in broad, gently sloping rigs, separated from each other by a drain. Upstream, a weir across the stream would throw the water into a lade that would carry it to the meadow. A series of small sluices and hatches would allow the water to be directed into a shallow furrow that ran along the crest of each rig: once full, the water would then overflow and run down the sloping flanks of the rigs in a thin sheet of water (Fig 80). Conventionally, water would be let on to the meadow for a couple of weeks in late winter: the water had the effect of warming the soil, relative to air temperature, so bringing on an early growth of grass. Once the field had been left to dry, sheep would be let on to graze on this unseasonal supply of fresh grass. After this had been eaten off, the meadow would be irrigated and dried again, and the grass left to grow until the summer, when a hay crop would be taken off it, to further supplement the winter fodder supply.¹⁹

18th–19th Century Fish Trap

(MAP 31 & FIG 82)

Fishing the Seashore by Alex Hale

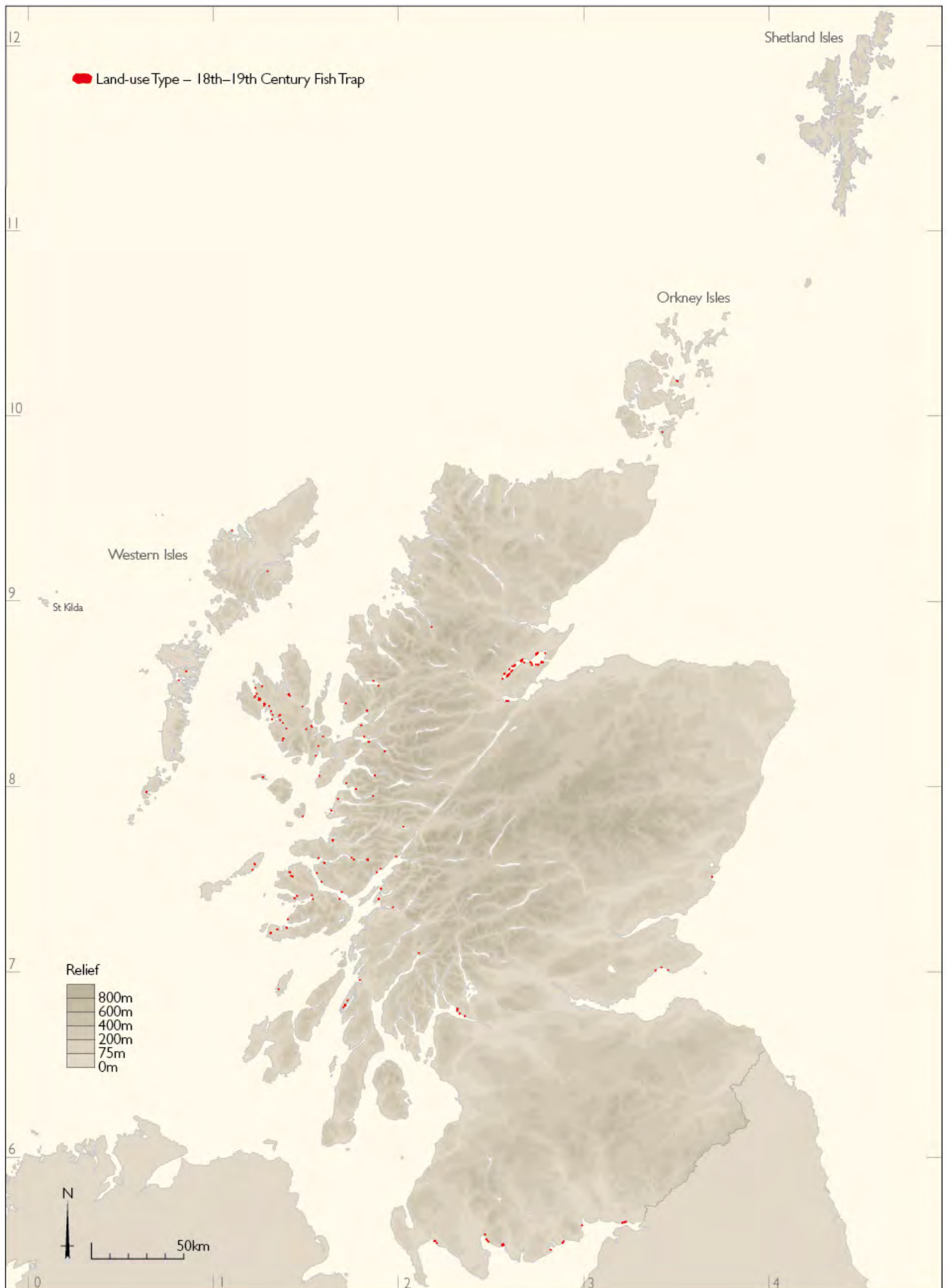
Fish traps are found in all manner of different landscape contexts around the coastline of Scotland. They are designed to catch fish at the mouths of burns and on intertidal mudflats. In construction terms they range from loosely built stone walls (Fig 83) to lines of timber poles, with nets strung between them (Fig 81). Salmon fishing nets are still in use today in parts of Scotland, which means the skills required to use and maintain these structures still survive. The function of fish traps is straightforward: to trap fish

either by blocking their routes and enabling people to net them, or to create a barrier that traps the fish in a static net. The forms of the traps are defined by the local topography, while their construction materials are defined by what is locally available and what type of fish they are designed to trap.

Fish traps are particularly hard to date. Stone-walled fish traps are dated by association with shoreline occupation sites and through documentary research. Timber traps can be dated quite specifically, through radiocarbon and potentially tree-ring dating techniques. However, occasionally historical documentary sources survive that contain evidence for the construction and use dates of certain fish traps.



Fig 81 Stake net fish traps in Fleet Bay, Dumfries and Galloway. DP184423.

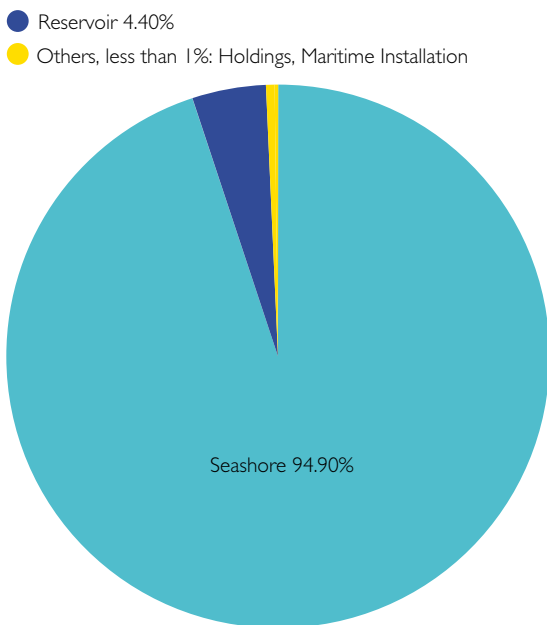


Map 31 Distribution of 18th–19th Century Fish Traps are by their nature coastal and tidal. Many more may yet be located. GVO06884.

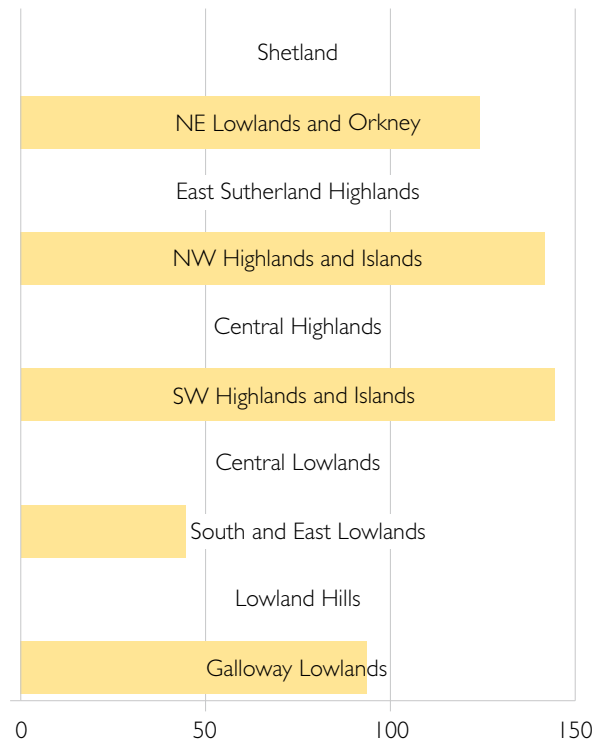
In landscape terms, many fish traps are to be found close to settlement sites, dating back to the last 200–300 years. Case studies have explored the proximity of fish traps to settlement sites at Dingwall, Highland, for example.²⁰ Through historical documentary research and archaeological fieldwork, it is possible to understand how the structures were built and what the social and economic context was to enable the traps to be built and used.

Some timber fish traps are still in use today. Ethnographic evidence about fish traps that were still in use in Scotland until the 1990s sheds light on their socio-cultural significance. In some cases, fishermen who had retired from off-shore fishing were given rights to use and maintain fish traps, as a part of their retirement. Additionally, it appears that traps were built, maintained and used by subsequent members of the same family. This would have ensured that knowledge could be passed on across generations, such as the fish types that could be caught, what form the trap should take and the knowledge of construction techniques needed to maintain the trap.²¹

Fig 82 Land use and regional distribution. GV006939.



Current Land-use Type of land that has been interpreted as 18th–19th Century Fish Trap



Area (ha) – by region – of land that has been interpreted as 18th–19th Century Fish Trap



Fig 83 Tidal fish trap at Fasag, Torridon, Highland. DP156410.

18th Century–Present Reed Beds

(MAP 32)

For Roofs and Baskets: A Redundant Natural Resource by Richard Craig

Reeds were used as roof thatch for buildings around Britain, but reed beds have only been recorded by the HLA to the south-east of Errol on the banks of the Firth of Tay (Fig 84), even though reeds grow wherever wet ground and lochs occur and were more common in the Lowlands before the drainage schemes of the agricultural improvements. Tayreed Company began harvesting the reeds in 1974 but closed in 2005 due to pressure from cheaper Eastern European imports. However the 410ha site continues to be maintained by the RSPB, who manage part of it as a 210ha nature reserve. The reed beds were first planted in 1830 to protect newly reclaimed arable land from erosion, and a use for the reeds would have been as thatch for local buildings. Several houses in nearby Longforan, Perthshire had thatched roofs and a few still remain today, like Hawthorne Cottage on Main Street. Many Scottish buildings were originally thatched or covered in turf, but by the 19th century pantiles and slates were becoming the favoured choice for roofing. Thatch was an effective roof covering but would need a yearly inspection to repair holes caused by birds, weathering or the weather. This, and the fire risk of the material, caused its decline in Scotland as a building material.

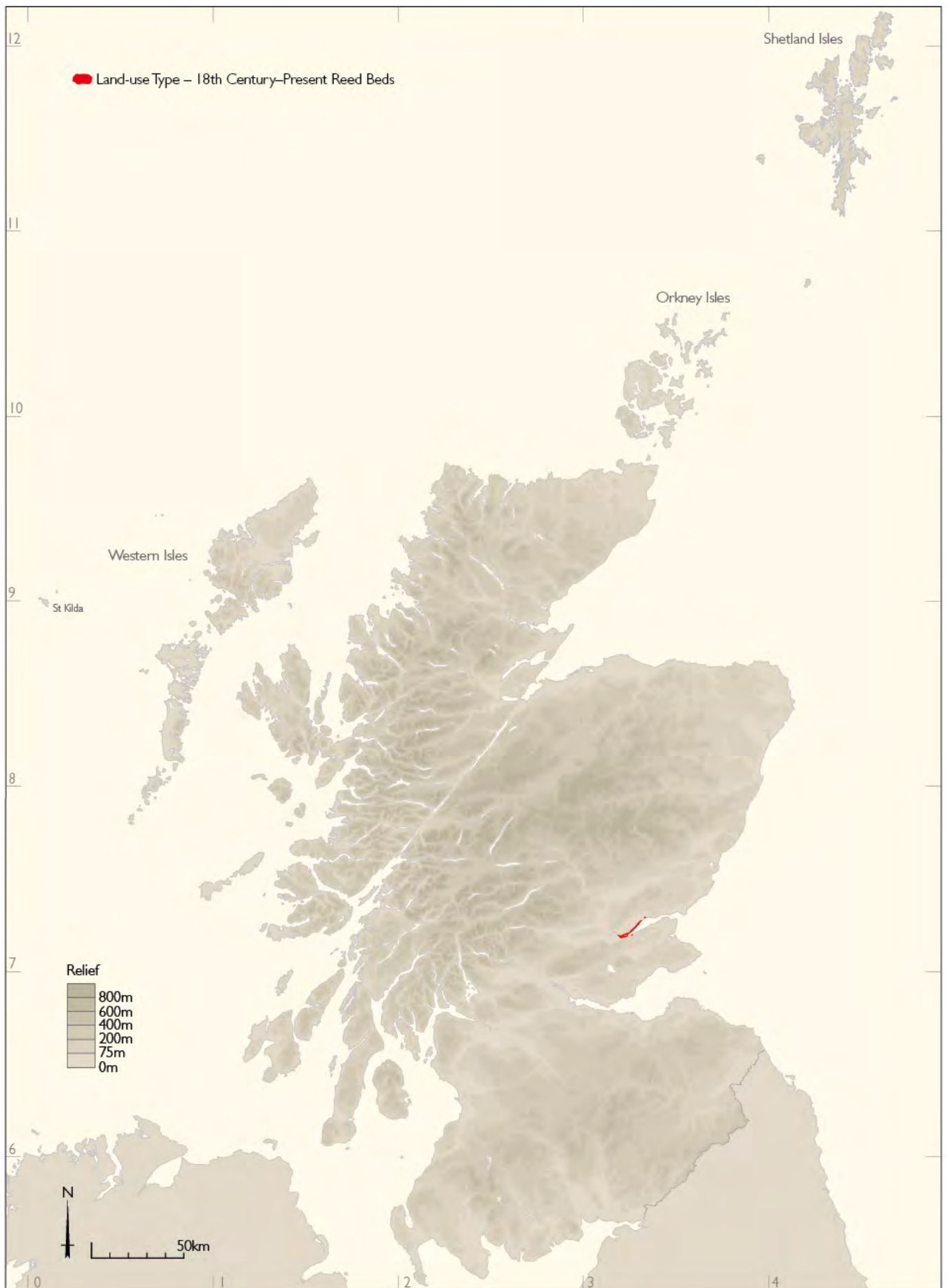
Reeds that are grown in wetlands where sluices control the level of the water tend to be of a better quality and a more controlled product. The Tay Estuary is tidal, and the beds produced tall reeds that were often not suitable for thatching. Consequently, markets for this product are limited and it may only be used for garden compost.

The traditional method of harvesting reeds was labour intensive and involved cutting by hand with a scythe, gathering the reeds together, fastening with twine and raking loose debris out of the bundle. The bases of the reeds are knocked on a board to create a tight parcel which is then taken elsewhere to dry. Machines resembling large lawnmowers are more likely to be used for the harvest now, unless the site is environmentally sensitive.

The reed beds and their mudflats on the Firth of Tay are an important habitat for wild birds, including the Reed Buntings and Sedge Warblers. The Bearded Tit is a rare bird that is only found on wetlands planted with reeds. These birds will not flourish in marshlands that become overgrown, which means annual management of the site is necessary. Rectangular-shaped blocks are cut out during the winter leaving nesting habitat in between. The area is maintained in much the same way today as it was when it was a commercial venture.²²



Fig 84 The pattern of reed beds on the Tay near Errol, Perthshire in April 2015, showing the harvested strips. DP209603.



Map 32 Only the tidal zone of the Tay preserves what was once a common rural industry. GVO06885.

18th Century–Present Mining Area, 19th Century–Present Quarry and Late 20th Century–Present Opencast Site

(MAP 33 & FIG 87)

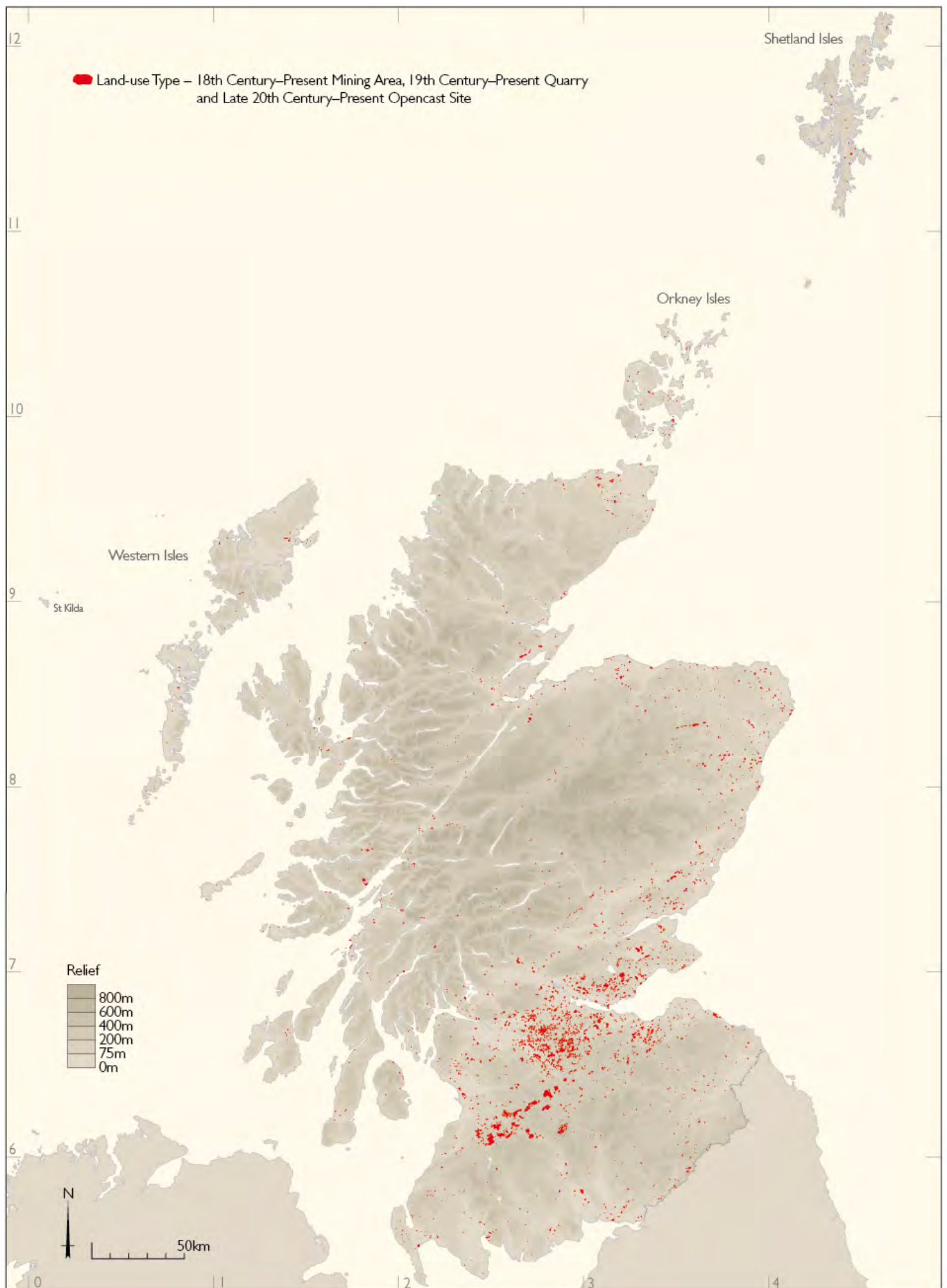
The landscape of central Scotland tells a remarkable story of the development of the Scottish economy from the beginning of the industrial revolution. Much of this took place in remote rural communities spread across the Central Lowlands of Scotland that were thrust into the forefront of industrial development by entrepreneurs and by fluctuating fortunes as resources were won, exhausted and abandoned. Throughout this region are to be found the shafts and spoil tips of old coal mines; the scars and dumps of overburden from disused ironstone and limestone quarries; the lades and reservoirs that once supplied long-vanished water wheels and steam engines; the successive networks of tracks, tram roads, inclined

planes, railways and canals that carried material to the furnaces of the ironworks and beyond; and the footings of the miners' rows where the families lived.

The remains of 18th century and earlier workings rarely survived the continuing development and modernisation of coal mining and its related industries in the 19th and 20th centuries. The villages of Wanlockhead and Leadhills, Lanarkshire (Fig 85), with their terraced cottages and garden plots, are surrounded by the small bings and tramways of the early period of industrialisation. In central Scotland around Shotts, North Lanarkshire and Slamannan, Falkirk the story of coal extraction in the 19th century is told through the developing rail network, now mostly abandoned, and the increasing scale of the bings, from the pimpled mounds of bell pits, to crows-foot shaped ones made by the successive tramway-operated dumps of spoil, to the great conveyor mounds of the 20th century.



Fig 85 Leadhills mining village and mines of various periods, South Lanarkshire. DP208812.



Map 33 Coal, limestone and iron were the key extraction industries of the Central Belt of Scotland. GVO06886.



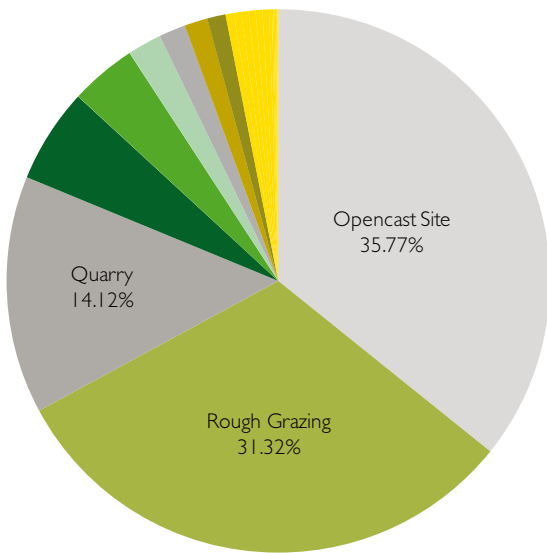
Fig 86 Westfield open castmine, Fife, now used as a wind farm. DP153383.

In the late 20th century, opencast mining began to take over from shaft mining and great swathes of Fife, the Lothians and Ayrshire have been completely modified by the drive for coal-to-fire power stations. Latterly, these large holes have provided opportunities for artistic landscaping and recreation, or for landfill, but more often the restored land has been returned to agriculture, if not always for arable. Some have left scars that are just too large to fill (St Ninian's, Fife, Chapter Three, Fig 34), but

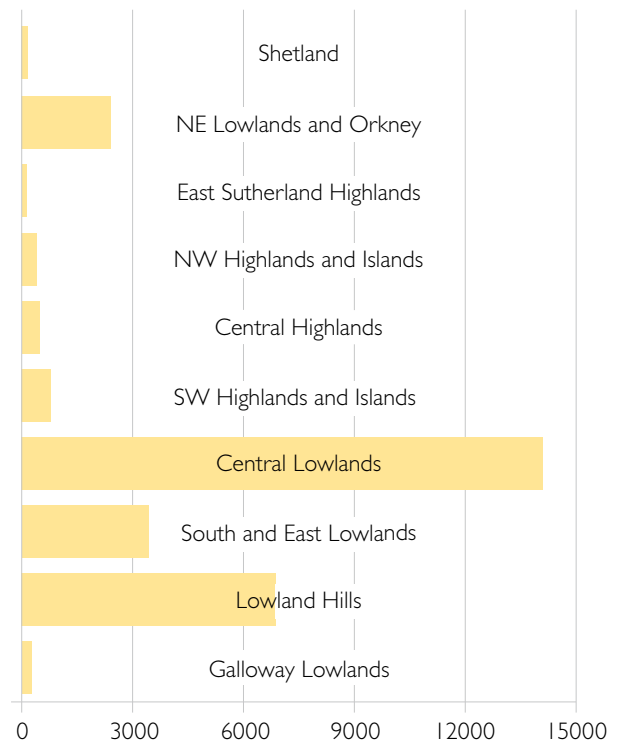
imaginatively Westfield, Fife has been used for a wind farm (Fig 86). With the closure of the remaining mines in the last decades of the 20th century, Lady Victoria Colliery, Newtongrange has become a museum, but in many cases the pit-head buildings and bings have been removed and the areas landscaped. Today, the only mine that is still worked is the recently reopened gold mine high on the hillside above at Tyndrum, and opencast is itself becoming a fossil with the closure of all of Scotland's coal-fired power stations.²³

Fig 87 Land use and regional distribution. GVO06941.

- Plantation 5.64%
- Managed Woodland 3.95%
- Recreation Area 2.03%
- Industrial or Commercial Area 1.59%
- Rectilinear Fields and Farms 1.37%
- Landfill Site 1.08%
- Others, less than 1%: Golf Course, Country Park, Reservoir, Freshwater Area, Urban Area, Restored Agricultural Land, Designed Landscape, Power Generation, Industrial-scale Farming Unit, Smallholdings, Monastery or Cathedral, Cultivated Former Parkland, Unenclosed Improved Pasture, Cemetery, Mining Area, Motorway, Maritime Installation, Planned Rectilinear Fields and Farms, Seashore, Crofting Township



Current Land-use Type of land that has been interpreted as 18th Century–Present Mining Area, 19th Century–Present Quarry and Late 20th Century–Present Opencast Site



Area (ha) – by region – of land that has been interpreted as 18th Century–Present Mining Area, 19th Century–Present Quarry and Late 20th Century–Present Opencast Site

Muirkirk: A Mining Landscape of the Industrial Revolution by Angela Gannon

The founding of a tar works in 1786 by Archibald Cochrane, ninth Earl of Dundonald, was an important catalyst in the industrialisation of Muirkirk, Ayrshire. The lease was subsequently bought by John Loudon MacAdam, but the works struggled to survive and they were never profitable thereafter and finally closed in 1809; MacAdam later found fame as a road engineer and his contribution is commemorated in the process he invented – ‘macadamisation’. The bank of kilns belonging to the tar works can still be seen, alongside the foundations of the still house and several other buildings. Immediately to the west are the shafts of the coal mines, characterised by a rounded spoil tip with a central shaft, and beside many are the remains of a circular horse-engine platform that would originally have powered the lifting gear (Fig 88).

The large quantities of coke provided as a by-product of the tar works were no doubt an additional incentive to the Glasgow entrepreneurs who set up at the ironworks at Muirkirk in 1787.²⁴ By 1796 the ironworks was fully operational, with three large blast furnaces in production. Though now demolished, a sketch dated to around 1840 gives an impressive representation of the ironworks before

the introduction of the railway.²⁵ The view shows the locations of the furnaces, forges, rolling mill and coking oven, and the majority of these buildings can be recognised on the first edition of the Ordnance Survey 25-inch map, published 16 years later.

The sketch does not capture the dramatic impact of the ironworks on the moorland to the south. From here the raw materials for the blast furnaces of the ironworks have all been wrought – iron ore, coal and limestone – and the extensive remains of the pits and quarries remain plain to see, interwoven in a web of communication routes. Limestone quarries fringe the southern extent of the area; their spoil dumps dwarf those of the coal mines and display a pattern of dumping in well-defined barrow runs (DP087020). Water management is also a feature of the landscape, and several lades have been constructed, the most impressive being that known as the Great Lade, which provided power to drain the coal mines near the ironworks. The quality of the iron produced at Muirkirk was celebrated and no doubt a key factor in the survival of the ironworks throughout the 19th century. However, the exhaustion of the blackband ironstone seams in 1901 sealed its fate, and the works finally closed in 1923. Coal continued to be mined at Kames until 1968, the same year that the ironworks was demolished.²⁶



Fig 88 Kames tar works and successive phases of coal pits, Muirkirk, Ayrshire. DP051706.

18th Century–Present Land Reclamation

(MAP 34 & FIG 91)

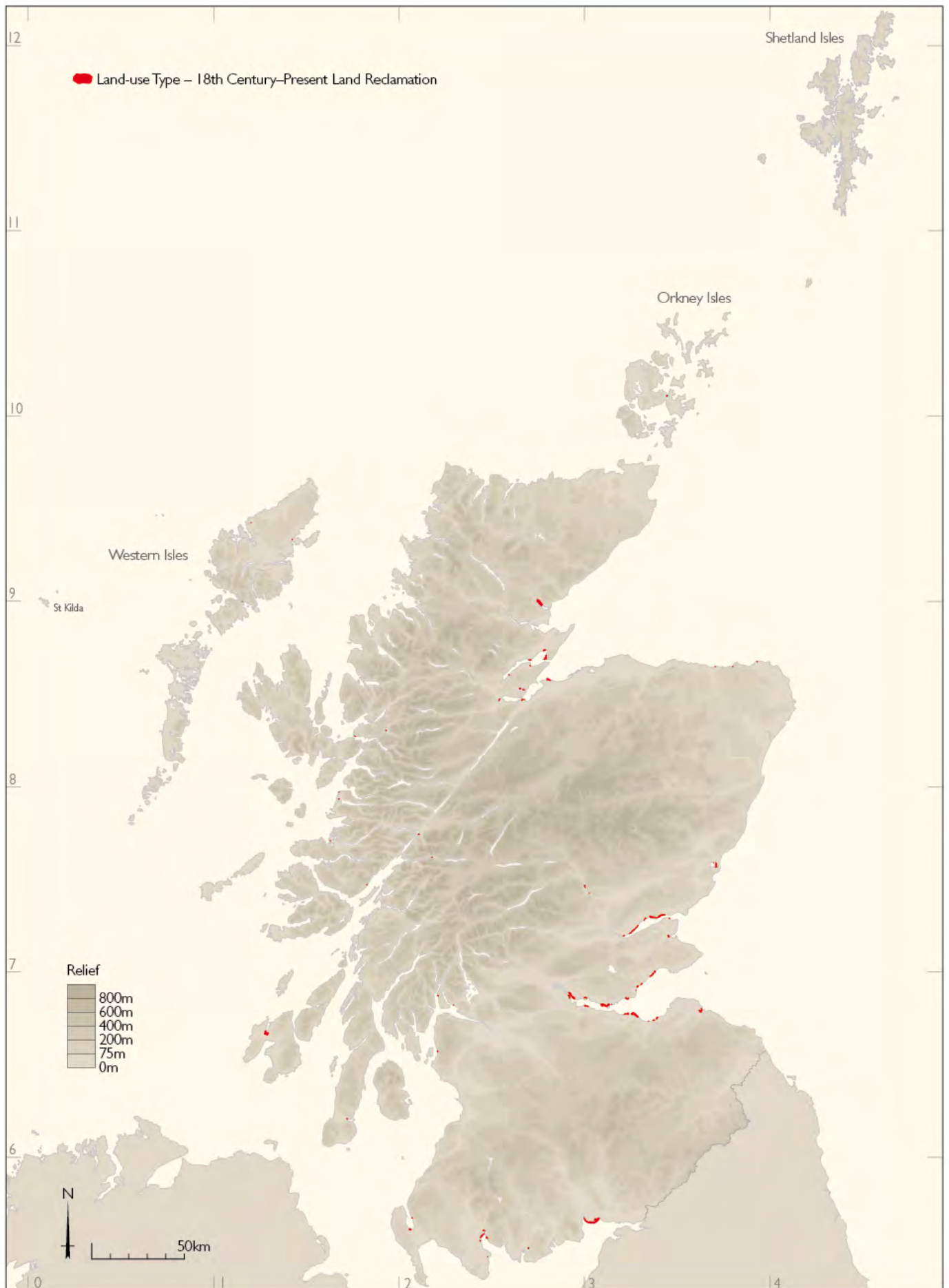
Coastal Reclamation by Richard Craig

Land reclamation is widespread throughout Scotland and is an activity concerned with creating new land from ground which was previously below the high-water mark of the sea. Land for agriculture can be brought into existence but often ground for harbours and industrial areas in large cities were fabricated in the 19th century. These areas may have been further developed since the late 20th century for recreation, commercial and residential uses.

Creating good-quality farmland out of rough ground or moorland was a time-consuming task in the past and it was often easier to regain new land from a silted-up estuary. At Eden Croft, Guardbridge, Fife a straight-edged high-water mark to the north of the railway line is depicted on the first edition of the Ordnance Survey enclosing land reclaimed from the Eden Estuary. On aerial photographs parallel drains enclosed by a dyke are visible at this site. Often, retrieved land is identifiable from the high-water mark appearing artificially straight on Ordnance Survey maps. Traditionally boggy ground next to the foreshore would be drained and dykes constructed enclosing the land thus creating areas suitable to be farmed relatively cheaply and easily. This practice intensified during the agricultural improvements in the 19th century, where efforts were being made to create as much fertile ground as possible, as on the carse lands of the Forth, where evidence for this may be seen at Powfoulis near Airth, Falkirk (Fig 89).

Fig 89 Powfoulis House lies on the edge of the carse land along the Forth near Airth, which lies in the background. Much of the land near Airth has been reclaimed. Names like Greendyke, for the road running across the picture from left to right, suggest a former sea dyke. DP114594.





Map 34 The firths of Scotland have been prime ground for reclamation since the medieval period. GVO06887.

Increasing land reclamation is being used to create large areas of ground next to cities where land for development is expensive or in short supply. This usually involves filling a large area with rocks, earth or similar substances to provide a stable area which can be built on. Redundant harbours are often filled in and used for developments that commonly contain a mix of different land uses ranging from shopping arcades, recreation areas and residential flats and houses. Many of the old docks at Dundee have been reused in this way, and this location was redeveloped in 2015 for the new V&A Museum (Fig 90).

Coal-fired power stations were often located on the coast and generated huge quantities of coal ash that was usually pumped in a slurry out of the generating plant and dumped nearby, creating large ash lagoons. These huge areas could easily be sculptured into flat recreation areas, or transformed into areas for wildlife such as Levenhall Links, Musselburgh.

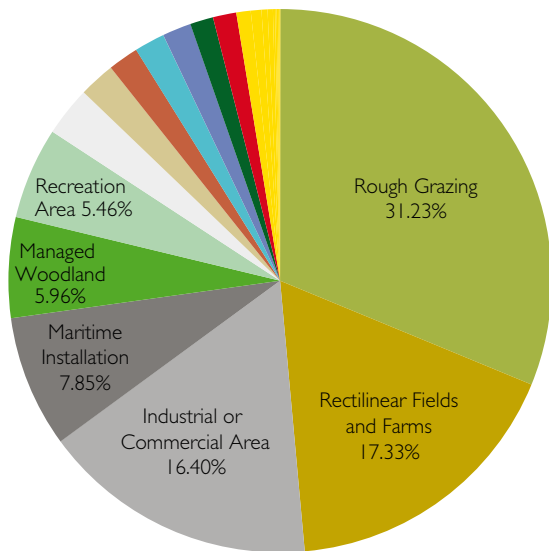
Land reclamation is an activity which can cause environmental concerns as natural habitats can be destroyed through the dumping of materials or the draining of estuaries. However, large parcels of land within a city tend to be difficult to secure, which makes creating new land on the shore the only viable option.²⁷



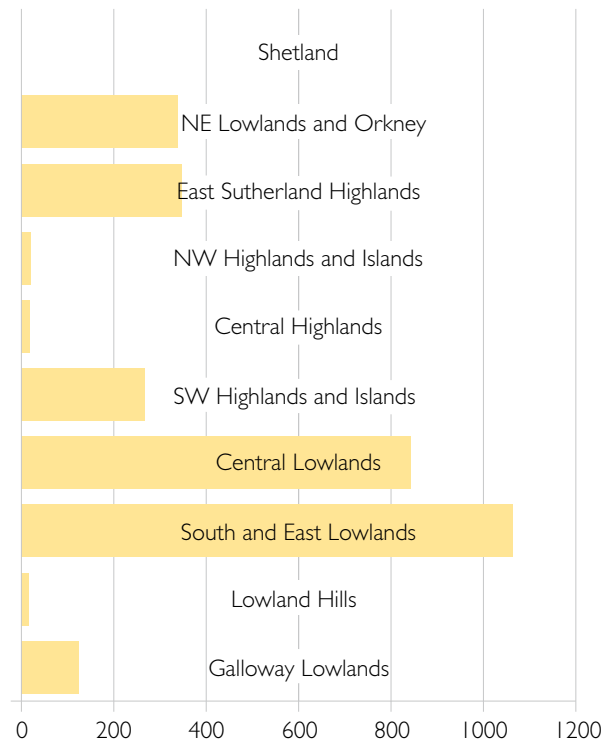
Fig 90 The Old Harbour, Dundee is being converted to a branch of the V&A Museum. DP211315.

Fig 91 Land use and regional distribution. GV006942.

- Military Site 2.94%
- Power Generation 2.15%
- Airfield 1.81%
- Seashore 1.80%
- Reed Beds 1.71%
- Plantation 1.39%
- Urban Area 1.38%
- Others, less than 1%: Planned Rectilinear Fields and Farms, Mototway, Railway Features, Reservoir, Landfill Site, Industrial-scale Farming Unit, Quany, Crofting Township, Medieval Town



Current Land-use Type of land that has been interpreted as 18th Century–Present Land Reclamation



Area (ha) – by region – of land that has been interpreted as 18th Century–Present Land Reclamation

18th Century–Present Orchard

(MAP 35 & FIG 93)

A Lost Fruit Industry by Richard Craig

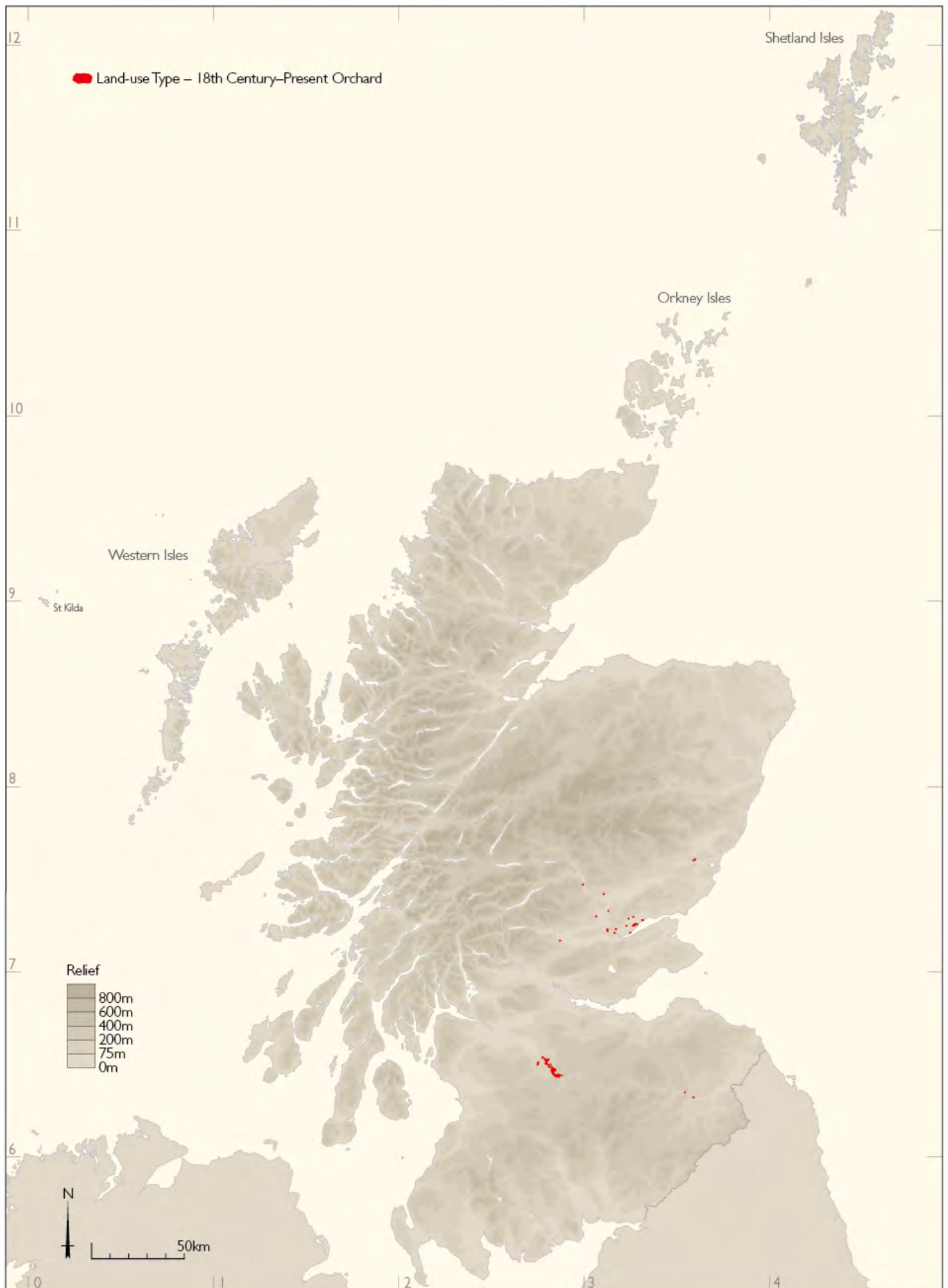
The earliest known orchard sites in Scotland originate from the 12th–14th centuries and were planted by monks from local monasteries. Remains of these early orchards are rare but examples dating from the 18th century, and perhaps earlier, are to be found in the Carse of Gowrie, Perthshire where fruit trees well over 100 years of age survive on ridge and furrow cultivation in a mainly post-improvement landscape of rectilinear fields (Fig 92). The Clyde Valley was one of the leading commercial fruit-producing areas in the 19th century and orchards were common. The remains of this activity are evident by the 19th century planned village of Hazelbank, Lanarkshire

and surrounding cottages and farms. Here, gardens and fields are still covered in fruit trees, some old and dying but others young and growing. Other orchards in the county have not been maintained and have become overgrown with non-fruit trees and bushes, or in most cases removed for other crops.

Orchards were spread throughout the whole of Scotland by the middle of the 19th century because fruit was a valuable crop at this time. Improvement-period fields were planted with fruit trees and an undercrop of soft fruit plants. The price of home-grown fruit started to fall in the late 19th century through produce being imported from abroad. Orchards declined rapidly in the 20th century as farmers cleared away the trees to plant a more profitable crop. The only trace many of these orchards leave in the landscape may be the external boundary or footprint of the area used to grow fruit.



Fig 92 Grange Orchard, Perth and Kinross lies on the Carse of Gowrie. DP039522.



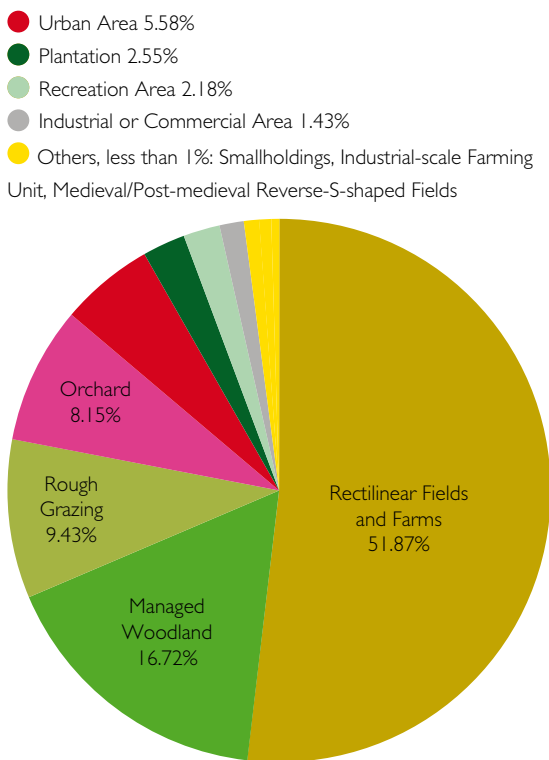
Map 35 Orchards are found mainly in Perthshire and Lanarkshire. GVO06888.

While landowners often created large commercial orchards on their estates, they also made smaller ones within the designed landscapes around the country house. The fruit from these smaller orchards would most likely have been used by the laird’s family or, if a bumper harvest, sold commercially. Several fruit trees remain on ridge and furrow cultivation of a substantial orchard on the north tip of the pleasure grounds of Megginch Castle, Perthshire, but these orchards are part of the gardens and designed landscape. Similarly, houses in medieval burghs and villages often had long back plots and it is not uncommon for these

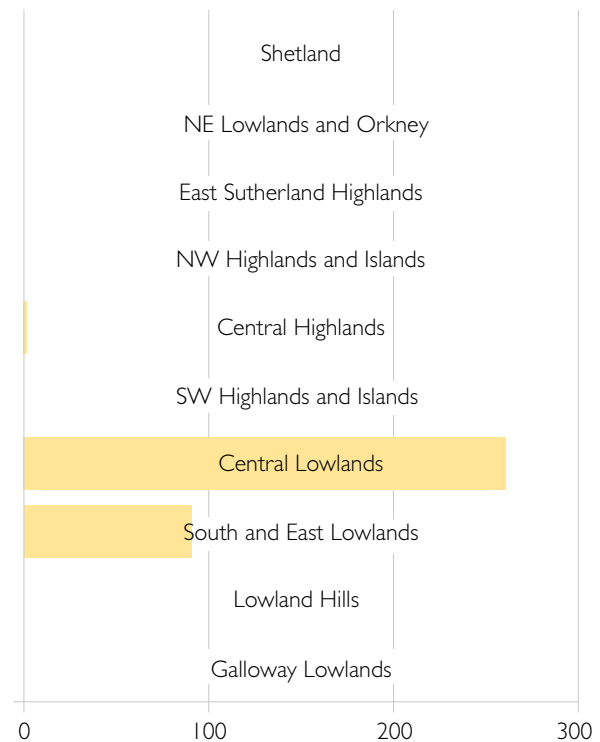
gardens to be planted with fruit trees. Back plots still survive on the western half of Newburgh, Fife that were planted with plum, pear, cooking- and eating-apple trees.

Within recent years there has been a resurgence of interest in orchards, and specialist groups are beginning to record and conserve them. Many owners of orchards find a use for the fruit but few sell it on a commercial scale. New housing developments sometimes include fruit trees in gardens or as community orchards.²⁸

Fig 93 Land use and regional distribution. GV006943.



Current Land-use Type of land that has been interpreted as 18th Century–Present Orchard



Area (ha) – by region – of land that has been interpreted as 18th Century–Present Orchard

19th–20th Century Timber Ponds

A Forgotten Relic of Shipbuilding

by Richard Craig

Timber ponds are rare in Scotland with only a very few sites leaving a trace on the landscape. They were set up in the 19th century in the vicinity of shipbuilding centres on the firths of Clyde and Forth to provide vast quantities of thoroughly seasoned timber for the construction of boats. These ponds are particularly visible along the southern shore of the River Clyde, where they occupied the area between Port Glasgow, Inverclyde and Langbank, Renfrewshire (Fig 93), with shipyards along most of the shoreline from central Greenock to eastern Port Glasgow. At their peak, the ponds extended north into Gare Loch, but by 1914 the arrival of pre-cut timber and of steel

construction meant that few remained in use. On the Forth, examples were recorded at Grangemouth and Bo'ness, and it is likely that they were maintained elsewhere too, wherever shipbuilding was carried out before iron-clad ships became the norm.

Wood that is not seasoned is liable to crack through shrinking and swelling, which could cause serious problems if it is being used in the shipbuilding industry. Current practice is to place green, unseasoned timber in vast kilns, gradually reducing the moisture content until the sawn material is stable. This technology was not available in earlier years, when the ancient practice was to leave the unsawn logs to lie on the tidal mudflats and season, for months or even years. The foreshore around Port Glasgow was the perfect environment for this process.



Fig 93 View of the timber ponds at Finlaystone Point, near Port Glasgow, Renfrewshire. DP242873.

The demand was so high in the 19th century that timber was brought across the Atlantic from North America and Quebec. In 1825 some 19,000 tons were imported, rising to 28,000 tons by 1834. The timber was not cut to a standard size but transported across the ocean in its raw form. Ships with bow doors had to be used because the tree trunks would not fit through cargo hatches. The logs were unloaded at the mid-harbour where they were measured and graded, then chained together with rafters and floated to the ponds. The ponds prevented the timber from floating away and allowed the logs to be organised according to type, length of seasoning and ownership. Extreme weather could result in the logs breaking free of the ponds, closing the river until they were recovered.²⁹

Remnants of the timber ponds by Port Glasgow are depicted on modern Ordnance Survey maps as a series of irregularly shaped dashed-edged rectangles below the high-water mark. Lines of rotting vertical wooden posts sticking out of the muddy foreshore are visible on aerial photographs and on the ground. The stakes are constantly being exposed and covered by the tide and remain as a reminder of a thriving 19th century industry.

19th–20th Century Out-of-town Hospital

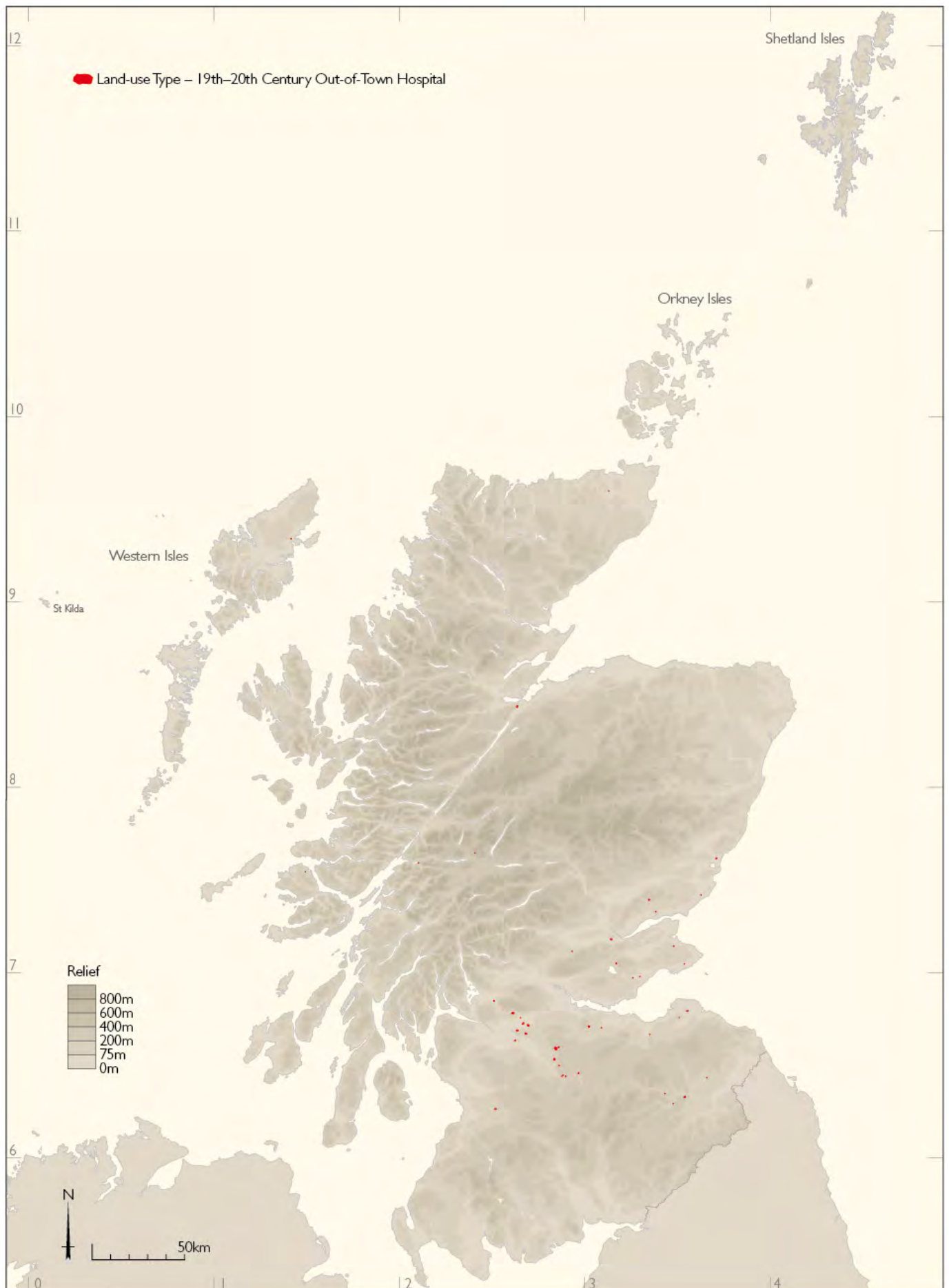
(MAP 36 & FIG 95)

Asylums and Isolation Hospitals by Richard Craig

Out-of-town hospitals are mostly located within a few miles of the outskirts of a town or village and are found throughout Scotland, with a concentration of sites along the Central Belt. Mostly these institutions were built in the 19th century on farmland as lunatic asylums or as hospitals for the treatment of infectious diseases. Some were built as cottage hospitals which, as the name suggests, are small in scale but adequate to serve the local communities where transportation to large city hospitals might be problematic.

The main cities of Scotland had a purpose-built asylum by the mid-19th century and most poorhouses would admit mentally ill people. The 1857 Lunacy (Scotland) Act established a central ‘Board of Lunacy’ to comment on designs and approve the building of district asylums or alterations to existing ones. The district asylums were large, impressive buildings with landscaped grounds and had farms attached where patients were encouraged to participate in the growing and harvesting of vegetables that would be used in the hospital’s kitchen. Accommodation for the doctors and staff would also be provided on site, which would create communities of staff and patients living and working together. These asylums were within easy reach of main cities; for example, Rosslynlee Hospital, Midlothian was only a few miles away from the capital on the Edinburgh to Peebles railway.

The Victorians also understood that, given the right conditions, infectious diseases would spread quickly and easily. The Public Health (Scotland) Act in 1867 gave provision for the construction of fever hospitals as well as tackling the squalor in large cities. The construction of these hospitals continued well into the 20th century and they were often innovative in design and of architectural importance. Nordrach-on-Dee Sanatorium near Aberdeen was opened in 1900 and was based on the principle of an open-air system of treatment. The building, located on the top of a hill and within a pine forest, was an impressive structure with verandas and large south-facing windows to let in light and fresh air.

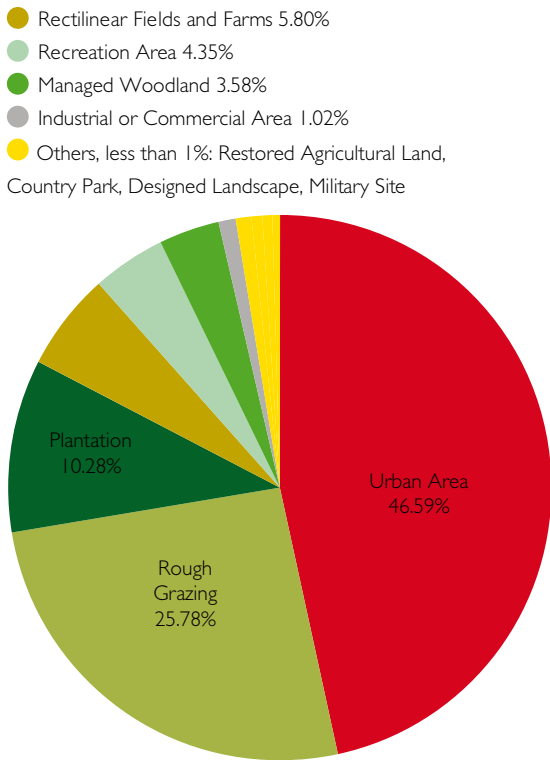


Map 36 Asylum, isolation and recuperation hospitals were built away from settlement. GVO06889.

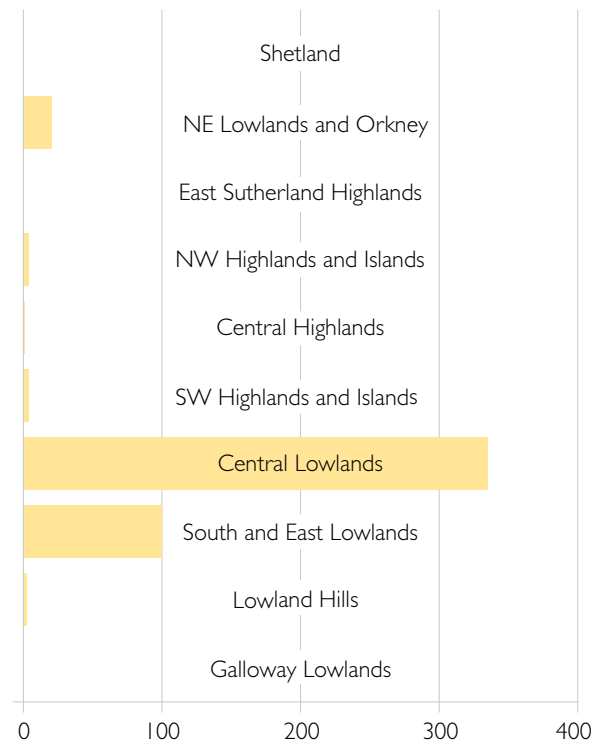
Changes in perceptions on how ill people should be treated, combined with the large maintenance costs of these hospitals, led to many of these institutions closing. Bangour General Hospital, Dechmont, West Lothian was built as an addition to Bangour Village Hospital in the 1940s as a series of single-storey brick-built wards (Fig 96). The General Hospital closed in the 1990s and the buildings were

demolished, leaving a pattern of roads within the external footprint of the site. Most Victorian-built hospitals are of architectural interest and in sound condition that makes them ideal for conversion into residential use. Dingleton Hospital in the Scottish Borders, opened in 1872 as an asylum and closed in 2001, has been converted into flats with modern houses built in the grounds.³⁰

Fig 95 Land use and regional distribution. GV006944.



Current Land-use Type of land that has been interpreted as 19th–20th Century Out-of-Town Hospital



Area (ha) – by region – of land that has been interpreted as 19th–20th Century Out-of-Town Hospital



Fig 96 Bangour Village Hospital, West Lothian, originally a lunatic asylum. DP211195.

ENDNOTES

- 1 Gannon, A. and Dixon, P., 2007, 'Chapter 9, The Transformation of the Rural Landscape', in RCAHMS, *In the Shadow of Bennachie: A Field Archaeology of Donside*. Society of Antiquaries Monograph: Edinburgh.
- 2 Dixon, P. (ed), 2008, *Buildings of the Land: Scotland's Farms 1750–2000*. RCAHMS: Edinburgh, pp. 157–176.
- 3 Knox, W. W., *A History of Scottish People: Urban Housing in Scotland 1840–1940*, http://www.scran.ac.uk/scotland/pdf/SP2_4Housing.pdf [2015].
- 4 Anderson, M. L., 1967, *A History of Scottish Forestry*, Vol. 2. Nelson: London; MacDonald, A. R., Smout, T. C. and Watson, F., *A History of the Native Woodlands of Scotland, 1500–1920*. Edinburgh University Press: Edinburgh, pp. 258–289.
- 5 Dixon, P. (ed), *Buildings of the Land*, pp. 143–6.
- 6 Buxton, B., 2008, *The Vatersay Raiders*. Birlinn: Edinburgh.
- 7 Chambers, B., 2013, *For Want of Land*, PhD, University of Aberdeen.
- 8 The Scottish Executive Central Research Unit 2000, 'Huts' and 'Hutters' in Scotland, Research Consultancy Services, <http://www.gov.scot/resource/doc/156526/0042031.pdf> [accessed 2015].
- 9 <http://www.hi-energy.org.uk/renewables/hydro-energy.htm> [accessed 2015]; Hunter, R., 1933, *The Water Supply of Glasgow: An Historical and Modern Survey of the Water Supply of Glasgow from the Beginning to the Year 1932*. Glasgow.
- 10 West, G., 2000, *The Technical Development of Roads in Britain*. Aldershot: Ashgate.
- 11 Delve, K., 2010, *The Military Airfields of Britain: Scotland and Northern Ireland*. Crowood Press: Ramsbury.
- 12 Cowley, D. C., 2003, *Kirkcudbright Training Area: An Archaeological Survey*. RCAHMS: Edinburgh; Hale, A. and Sherriff, J., 2006, *Castlelaw and Dreghorn Training Area: An Archaeological Survey*. RCAHMS: Edinburgh.
- 13 <https://canmore.org.uk/site/search/result?SITETYPE=823&SITECOUNTRY=1> [accessed 2018].
- 14 Macadam, W. I., 1867, 'Notes on the Ancient Iron Industry of Scotland', *Proceedings of the Society of Antiquaries of Scotland* 21 (1886–7). Society of Antiquaries: Edinburgh, pp. 89–131.
- 15 Graham, A., 1919, 'A Survey of the Ancient Monuments of Skipness', *Proceedings of the Society of Antiquaries of Scotland* 53. Society of Antiquaries: Edinburgh, pp. 76–118.
- 16 Rennie, E. B., 1997, *The Recessed Platforms of Argyll, Bute and Inverness*, BAR 253. Tempus Reparatum: Oxford.
- 17 Sneddon, D., 2003, 'Lochan Taynish, Platform 18', *Discovery and Excavation in Scotland* New Series 4, p. 39.
- 18 RCAHMS, 1992, *Argyll Volume 7, Mid Argyll and Cowal: Medieval and Later Monuments*. HMSO: Edinburgh.
- 19 Cook, H. and Williamson, T. (eds), 2007, *Water Meadows: History, Ecology and Conservation*. Windgather Press: Oxford; Fraser, I., 2001, 'Three Perthshire Water Meadows: Strathallan, Glendevon and Bertha', *Tayside Fife Archaeological Journal*, Vol. 7, 2001, pp. 133–147; Stephens, G., 1835, *The Practical Irrigator and Drainer*. Wm Blackwood: Edinburgh; Robertson, G., 1813, *General View of the Agriculture of Kincardineshire or the Mearns Drawn Up for the Consideration of the Board of Agriculture and Internal Improvement*. Sherwood, Neely and Jones: London.
- 20 Hale, A., 2003, 'Fishtraps in Scotland: Construction, Supply, Demand and Destruction', in Klapste, J. (ed), *Water Management in the Medieval Rural Economy*, Rurality V. Brepols Publishers: Turnhout, pp. 119–126.
- 21 Bathgate, T. D., 1949, 'Ancient Fish-Traps or Yairs in Scotland', *Proceedings of the Society of Antiquaries of Scotland* 83, Society of Antiquaries: Edinburgh, pp. 98–102; Hale, A., 2003, 'Fish Traps in Scotland: Construction, Supply, Demand and Destruction' in Klapste, J. (ed), *Water Management in the Medieval Rural Economy*, Rurality V. Brepols Publishers: Turnhout, pp. 119–126.
- 22 <http://www.rspb.org.uk/groups/aberdeen/reports/250445/> [accessed 2015].
- 23 Butt, J., 1967, *The Industrial Archaeology of Scotland*, Industrial Archaeology of the British Isles series. David & Charles: Newton Abbot, pp. 147–8; RCAHMS, 1998, *Forts, Farms and Furnaces: Archaeology in the Central Scotland Forest*, Edinburgh.

- 24 <https://canmore.org.uk/collection/436104> [accessed 2018].
- 25 Butt, J., Donnachie, I. L. and Hume, J. R., 1968, *Scotland - Industrial History in Pictures*. David & Charles: Newton Abbot, p. 70.
- 26 Hume, J. R. and Butt, J., 1966, 'Muirkirk 1786–1802: The Creation of a Scottish Industrial Community', *Scottish Historical Review*, Vol. 45, pp. 160–183; RCAHMS, 1996, *Muirkirk, Ayrshire: An Industrial Landscape, RCAHMS Broadsheet 1*. RCAHMS: Edinburgh.
- 27 Smout, T. C. and Stewart, M., 2012, *The Firth of Forth: An Environmental History*. Birlinn: Edinburgh.
- 28 Robertson, F. W., 2007, 'A History of Apples in Scottish Orchards', *Garden History* Vol. 35, 1, pp. 37–50.
- 29 Maynard, A., 1969. Stumps in the Sand: The Story of the Old Timber Ponds of Port Glasgow, *Scotland's Magazine*, Vol. 65 Part 7, pp. 45–46.
- 30 Historic Scotland, 2010, *Building up our Health: The Architecture of Scotland's Historic Hospitals*. Historic Scotland: Edinburgh.

Historic Land-use Assessment of Scotland, 1996–2015



HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

Chapter Three: REGIONAL CHARACTER



Designed landscape and parkland

Rough grazing and site of iron age fort

Former medieval settlement and modern golf course

18th – 20th century managed woodland

18th – 21st century cemetery

18th – 19th century crofts and small holdings

Medieval village

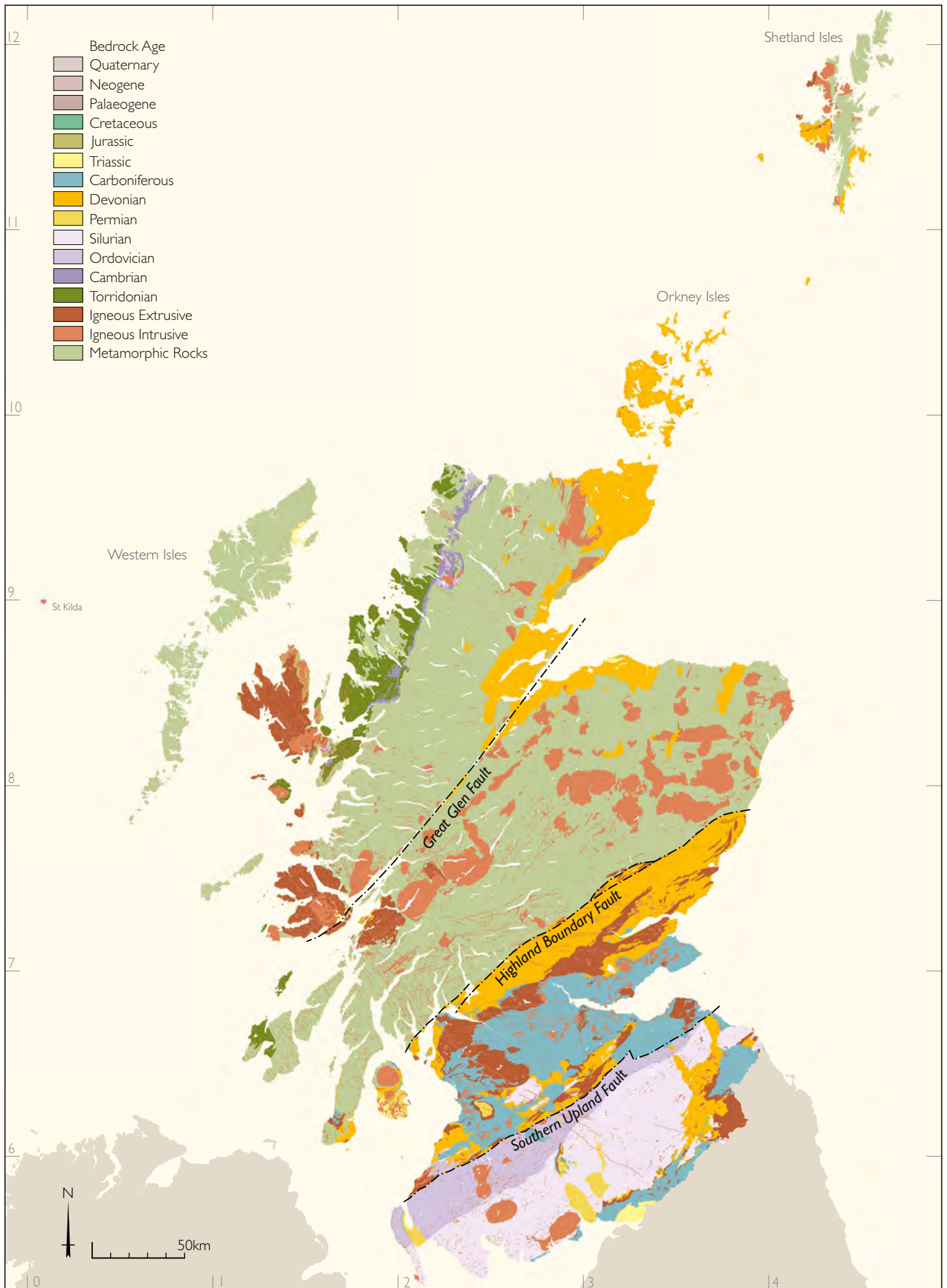
19th – 21st century urban area

18th – 19th century rectilinear fields and Roman military site

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Map 1 Solid geology of Scotland. Derived from British Geological Survey Bedrock Geology. GVO06895.

DEFINING REGIONAL CHARACTER

Scotland is a land of strong contrasts as a result of its geography and the revolutionary changes in farming and industry that took place in the 18th and 19th centuries. The impact of the agricultural and industrial revolutions on the landscape, while not exclusive to Scotland or indeed Britain, is starkly drawn in the contrasting land use of the Lowlands and Highlands. The best way to appreciate it is to take a journey north from Edinburgh to Inverness. Starting in the industrialised central Lowlands of Lothian and Fife, replete with built-up urban landscapes and relics of 19th and 20th century industry, such as the shale bings, one progresses through the sparsely populated, neat arable farms and farmland of Kinross and Perthshire, with their rectilinear field boundaries that reflect the agricultural improvements of the 18th and 19th centuries, to the dramatic terrace of heather-clad hills of the highland edge, managed for their grazing and grouse since the 19th century but increasingly exploited for forestry and wind farms in the modern era. The Highlands preserve the remains of abandoned and deserted settlements along the edges of the straths, while lowland farmland occasionally reveals glimpses of past settlement in the marks displayed by growing and ripening crops in the summer. Scotland's landscape has not so much evolved as been recreated in new form in the last 250 years. The work of the HLA has shown that despite the dramatic changes the landscape has undergone, traces of medieval and prehistoric landscapes may still be seen and influence present land uses. This interplay of past and present interacting with the topography and geography gives the landscape its regional character.

The landscape is influenced by geology and soils, and by past and present land use. It is, however, clear that geology and geography are key components of regional character (Maps 1 & 2).¹ The Highland Line that runs from Bute in the south-west to Stonehaven and is based upon the change from softer sedimentary rocks of the Lowlands, Devonian and Carboniferous in date, to the largely hard and metamorphosed rocks of the Highlands, is a fundamental physical feature in the character of

Scotland and delimits the north-west edge of the central and eastern Lowlands. Within the Lowlands, there are significant ranges of hills that give large swathes their typical hill-grazing character, of which the Southern Uplands are the best known. These hills are largely made up of hard, metamorphic, Silurian-greywacke sandstone. They are bounded on the north by the Southern Upland Fault which is most recognisable as the steep edge of the Lammermuirs skirting the Lothian plain. The hills have been moulded and smoothed by episodes of glaciation that have left debris along the valley sides of the Tweed, with hummocky drumlins spread like a rash along the Solway coast of Galloway. This geology is reflected in the pattern of settlement and agriculture, with scattered farms and squared fields predominating in the eastern and southern Lowlands, whereas in the uplands of the north and west and in the Southern Uplands, grazing is the dominant land use. The drumlin country of Galloway imposes particular variations in the patterns of present and past fields of the area, while the coal-bearing carboniferous rocks of the central lowland plain have determined the industrial exploitation and landscape of that area.

The other key components that make up regional character are the land use and management, which have changed over time. For the modern landscape this character is formed by the enclosed and fenced fields, with their rectilinear shapes that separate farmland from rough grazing (Introduction, Map 1). Scotland may be divided into ten broad landscape Regions (Map 2). The lowland farming regions, which extend from Orkney in the north to the Scottish Borders in the south, are sub-divided into four, based on variations in field and settlement pattern, and on past land use. The upland grazing areas are sub-divided into six regions, by factors of geography and settlement, past and present. The grassy Southern Uplands and other hill ranges largely grazed by sheep that lie amongst the lowland farming regions are characterised as an upland grazing region. Consequently neither the Uplands nor the Lowlands are a single entity in terms of landscape character.

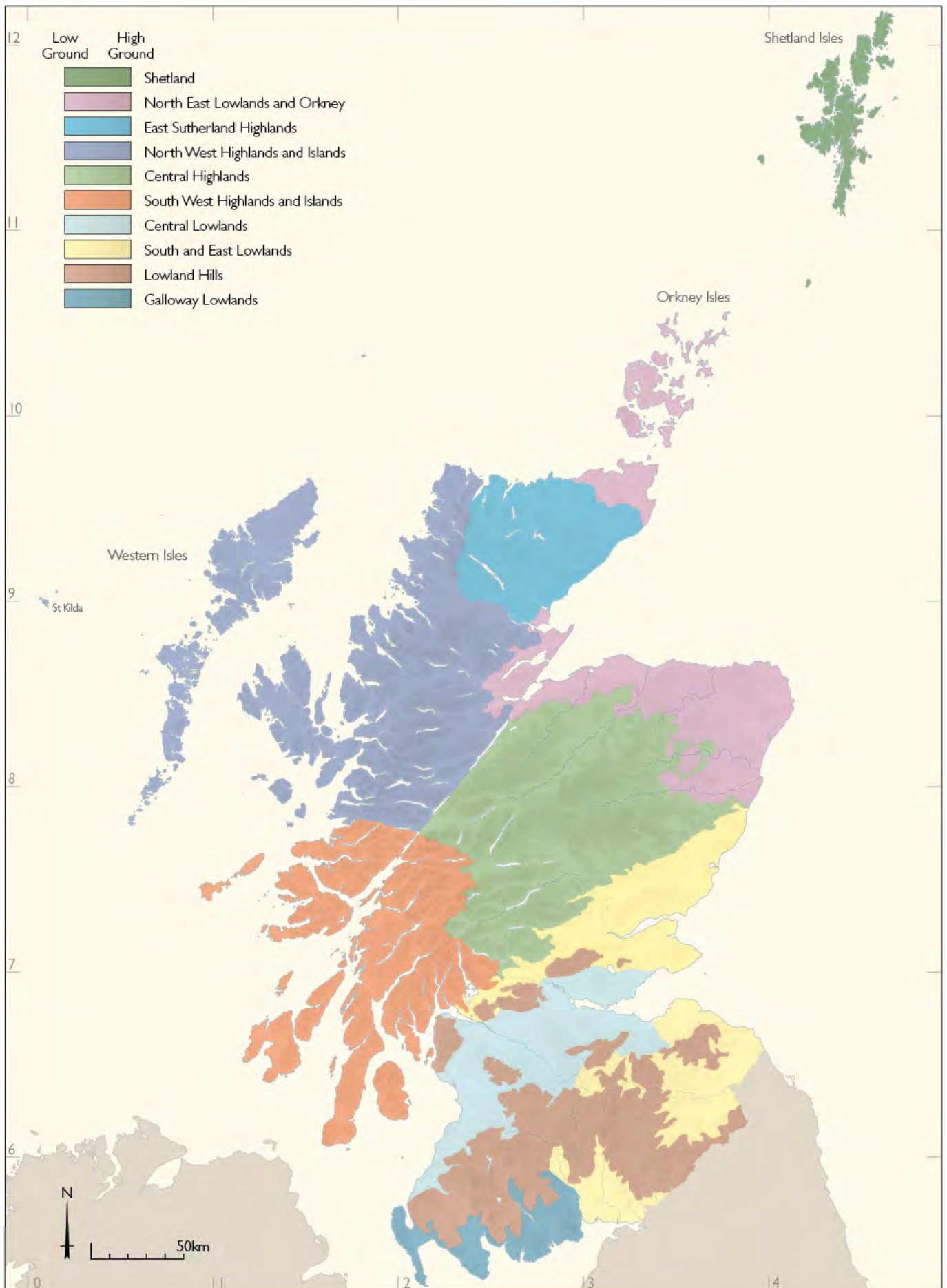
The four lowland regions each have a distinct character. The north-east Lowlands are uniquely characterised by 19th century crofts and smallholdings, which are an improvement-period reinterpretation by landowners of a pre-improvement form of land-holding.² By contrast these are almost unknown in the south-east, and only in Perthshire are smallholdings, known as pendicles, to be found. The south-east is the key area for the preservation of reverse-S-shaped field boundaries, which, although the boundaries are themselves modern, enclosed what had once been medieval strip fields, and are indicative of its past history as the main area for the development of medieval burghs. These were the urban centres of the medieval period and form the cores of many of our modern towns and cities (see Chapter One). The south-east also has many villages of medieval origin, where open-field strip farming with intermixed landholding was most developed and freeholdings were more common.³ The central Lowlands history of extractive and manufacturing industry gives it its unique quality, but otherwise in farming and rural settlement terms it is similar to the rest of the south and east. The Galloway coastal Lowlands has all the qualities of the south-east Lowlands in terms of improvement-period fields but is unique because of the glaciated broken terrain and drumlins that give its field pattern its distinctive irregular character, characterising the fields of both pre- and post-improvement origin.

Similarly the Highlands are divided east and west of the Great Glen, a geological fault line, and influenced by climate. Settled areas in the east rise much higher into the Cairngorm massif than they do in the wetter terrain of the western Highlands, where the moist air from the Atlantic deposits high quantities of precipitation. This also divides west Sutherland, and particularly Assynt, from the drier eastern part of the county. The settlement distribution on the west is predominantly coastal and low-lying, with crofting townships of mostly 19th century origin dominating the modern settlement pattern, and large areas of poor-quality grazing mostly used for deer stalking

and modern forestry. These land uses, in conjunction with its mountainous terrain, the paucity of ancient and managed woodland and the closeness of the sea, are essential qualities of the north-west. Northern and eastern Sutherland, because of the particular 19th century clearance history, preserves a distinctive landscape of deserted townships, and the present land use of deer stalking and fishing divides the county from the north-west. Shetland, with its extensive heather-covered peat moorland and localised clusters of crofts reusing land used by the pre-crofting inhabitants, has the character of the north-west Highlands and Islands rather than the lowland farming landscape of neighbouring Orkney. Yet unlike the Hebrides and north-west mainland, the hinterland of Shetland is not occupied by shieling grounds but by deep peat that has been inimical to settlement since the Bronze Age. In contrast, Argyll forms a region of its own: its lushly wooded upland, reflecting both past and present land use, with few crofting settlements, numerous small fishing villages and the scars of past and present extractive industry.

To define and map regional character, some generalisation has been necessary. Where the areas of farmland are narrow strips adjacent to upland grazing, such as in the Spey, Tay or Tweed valleys, they are included in what is essentially an upland region, since grazing is by far the dominant activity in farming terms over the small amount of in-bye land. This works both ways, with small hilltop expanses of upland grazing being included in the adjacent lowland regions. However, it is the division between the monoculture of neatly managed enclosed fields and the varied vegetation of areas of rough grazing which makes such a strong contrast in the landscape, and marks the boundary between upland and lowland land use and character.

In the following section the regions of the upland and lowland zones are grouped together and are described in turn in terms of their current land use and patterns of relict landscape.



Map 2 The ten Historic Land-use Regions of Scotland. GV006896.

UPLAND GRAZING REGIONS

Shetland

The islands of Shetland are dominated by water; when on land the voes, firths or open seas are never more than 5km away. The coastal edges of cliffs, rocky shores and occasional sandy bays contain a windswept hinterland. Around this coast is a settlement pattern that is characterised by numerous dispersed habitations looking out to sea (Fig 1). The majority are smallholdings, although there is an occasional crofting township – the main difference being the earlier period of establishment and the elongated, similar-sized holdings of the crofting townships, as at Quendale or Ireland on South Mainland (Fig 2).⁴ In some instances these areas of small farms are located inland, but all have their backs to the low rolling hills of rough grazing and traditional peat cuttings.

While there is a remarkable density and distribution of these holdings, they are not just an indication of agricultural changes during the 19th century. They are also a reflection of the ties between landowners and their numerous small tenants, through the imposition of rents from fishing rather than agricultural produce. Proprietors needed to keep people on the land so that there would be sufficient men and boys going to sea. To ensure the link was maintained, townships and common lands were sub-divided and land was enclosed to create small individual holdings. Traditional farming practices associated with communal farming waned and, as the population grew bigger, additional smallholdings were created on areas not previously farmed. Landowners had already created their own larger farms with rectilinear fields on the better ground, embracing the methods of agricultural improvement of mainland Scotland, but here the fields are often small by comparison with the mainland, as at Belmont, Unst (Fig 3).



The reorganisation of medieval/post-medieval townships in the 1820s–1840s and again in the 1860s–1870s has not led to their complete obliteration. Extensive areas of smallholdings, with a dwelling, arable and pasture land, are still peppered with evidence of farming that stretches back for generations – there were over 700 Shetland townships in the 18th century.⁵ Their degree of survival is striking, particularly as many of the small tenants stayed on the land, rather than being moved off, though clearance did occur on specific estates as elsewhere in Scotland, such as Weisdale on Mainland, or Sandwick on Unst (Fig 4).

The pre-improvement townships consisted of arable fields, visible as rectangular plots delimited by earthen banks (Fig 5), such as those at Skaw on Unst; and meadows, visible as strips cut by drains (Fig 2), with access to rough grazing and peat cuttings beyond the head dyke. Generally it is the ruinous structures that have survived. Some are located in areas that were never taken in hand by the agricultural improvers and are now moorland, as on parts of Fetlar and Unst. By contrast, the larger farms stand out from the crofts, with larger rectilinear fields, often with stone dykes that were created in the later 18th century and early 19th century, such as Sand Lodge, Mainland.



Fig 1 Aerial view of mainland showing the Shetland landscape of heather moorland, grassland around the crofts and the port and settlement at Scalloway with its medieval castle. Note the fish farm in the foreground. DPO81241.



Fig 2 The clustered buildings of the township of Ireland, South Mainland, are derived from the pre-improvement settlement, but the crofters' strips running down to the sea are typical of crofting townships and the drained meadow in the boggy area in the background is particular to Shetland. DP081282.

Despite the considerable changes in farming on Shetland in the later 18th and 19th centuries, evidence of early settlement and agriculture still survives. Rather than numerous small areas of later prehistoric round houses and field systems found in other parts of the country, Shetland boasts extensive areas of early prehistoric farming, particularly on West Mainland (Fig 6). Such early traces of land use are a

feature of Shetland, and the islands preserve the best examples of those quintessential Iron Age towers, known as brochs, to be found anywhere in Scotland. That at Jarlshof became the focus of Viking and Norse settlement in the early medieval period, a time which has also left its mark on the archipelago, with excavated examples of Norse longhouses at Underhoull and Belmont on Unst (Fig 7).



Fig 3 Belmont estate and its rectilinear fields overlooking the ferry terminal. A rare example of an improved farm on Shetland centred on a country house. DP145664.

As already noted, the sea has always been of great importance to the way of life on Shetland. There are numerous piers and jetties at sheltered points along the coast, along with clusters of small buildings of the fishing stations (Fig 8). All have a history, but only

the largest appear in this assessment. They include the safe harbour of Scalloway, now on both sides of the main voe; the port of Lerwick which stretches for almost 2km along Bressay Sound; and the oil terminal at Sullom Voe (Fig 9).



Fig 4 The farms in Sandwich Bay, Unst were cleared in the mid-19th century and replaced by large pasture enclosures for sheep. ©Getmapping.⁶



Fig 5 Earth-banked strip fields of pre-improvement date survive within the modern pattern of crofts at Sandsound. Ridging is rarely to be found on Shetland and is usually improvement period in date. DP145739.



Fig 6 Early Prehistoric Settlement at South Stany Fields, West Mainland, on the left is a plantigrub. DP196994.



Fig 7 Norse House at Belmont, Unst. DP276318.



Fig 8 19th century fishing station at Heogan, Bressay. DP196751.



Fig 9 Sullom Voe Oil Terminal makes a significant impact on the landscape with its storage tanks. DP145855.

The North-west Highlands and Islands

Today this vast region is characterised by its coastal settlements, with numerous crofting townships originating in the 19th century as well as smallholdings (Fig 10), or recent townships created in the early decades of the 20th century. On the mainland in particular, there are also a few large villages originally established in the later 18th century as planned industrial fishing centres, such as Ullapool and Shieldaig, and a scatter of small country mansions as at Dundonnell or Applecross (Fig 11), with associated intimate designed landscapes. Here, and on Skye, ancient managed woodlands and more recent forestry plantations are scattered throughout the empty moorland.

Away from the coastal edges, the impressive hills, uninhabited glens and broad moorlands comprise outcropping bedrock, peat bog, heather and deergrass, peppered with numerous freshwater lochs, lochans and long narrow reservoirs for hydro-power constructed in the mid-20th century. While the Western Isles are largely treeless, conifers planted in the 20th century, as in Glen Carron, cover occasional areas of hillside across the rest of the region.

In this region, evidence for medieval/post-medieval townships is extensive around the coast, with turf and stone blackhouses as well as expanses of spade-dug rig (*feannagan*), head dykes, peat cuttings and common grazings (Fig 12). These settlements rarely extend far inland and complement the crofting settlements in hugging the coast. The narrow glens and high hills are less favourable locations for subsistence farming than the broad straths on the other side of the country. Instead, medieval/post-medieval land use is highlighted by summer grazing grounds (shielings) – small, bright patches of green in an otherwise fairly inhospitable environment. Population pressures and clearances in the later 18th and 19th centuries meant that some of these shieling sites were adapted for more permanent settlement by shepherds, but these habitations may only have been occupied a few years.





Fig 10 The squared plots of this crofting township at Sand, Gairloch, Wester Ross indicate its origin as estate-planned smallholdings, in this case by the Mackenzies of Brahan in Easter Ross. The caravan park occupies the site of a sheep farm that was the flip side of the creation of crofts. DP110004.



Fig 11 Applecross country house and designed landscape occupies the best ground in the small valley stretching inland, with fish traps (right) along the shore in the bay. DP110050.



Fig 12 Aerial view of medieval/post-medieval township of Nisishie on the Isle of Harris with extensive lazy-bed rig and turf-grown buildings along the break of slope and common grazings above the head dyke. DP110631.

The later 18th and 19th century clearances associated with this region resulted in very significant decreases in population. Landowners' incomes were maximised by taking rents from larger sheep-farm tenancies and deer forests. But some families remained, eking out a living on poor ground on the edge of the more fertile areas and common grazings. Eventually, in the later 19th century, legal rights were established for the landless and their emergent crofting townships. On the machair of the Western Isles their land was augmented by unenclosed strips of land for potatoes or oats, detached from the crofts to which they were linked (Allotted Cultivation Plots), maintaining an ancient runrig method in a modern context; this unique way of farming (Fig 13) has its origins in the medieval period.

On Skye the extent of the coastal crofting townships is considerable, while on the mainland they tend to be smaller in area, as the broken geography dictates. Some parts of the region, particularly in Wester Ross, are characterised by extensive areas of planned smallholdings, such as that created by a paternalistic landowner on the Mackenzie estates of Gairloch (Fig 10). On the Western Isles and Skye all or parts of larger farms were subsequently broken up into smallholdings and new crofting townships, often as a result of a change of ownership. Evidence for this is prevalent in the Western Isles where, mainly during the 1920s and 1930s, the rectilinear fields were sub-divided to create a building plot with a few acres of arable and pasture. This smallholding or crofting settlement pattern around the coast typifies this region.



Fig 13 The terrain of South Uist is divided into three zones: the machair cultivated by the crofters in unenclosed strips (beside the loch in the foreground), the crofts with their white houses set further inland, and the rough grazing and hill ground beyond. SC991615.

The Central Highlands

The central and eastern Highlands largely consist of the broad, 1000m-high plateaux of the Cairngorms, the slightly lower Monadhliath to the north-west and the rest of the Grampian Mountains to the south-west as far as Ben Nevis. From a land-use perspective the glens and straths with flat valley floors are of greatest interest. Rectilinear fields of various sizes sub-divide the narrow strip of farmland in the valley bottoms, and the associated farmsteads, often quite small, are generally protected by shelter belts of trees. The immediate slopes are mainly wooded, the plantations or managed woodland being interspersed with pasture fields. This is a pattern that is largely a reflection of 18th and 19th century agricultural improvements (Fig 14).

The area is renowned for its large private estates that focus on hunting and fishing from large shooting lodges. Some are at a distance from the original core of the land ownership – a medieval castle or 16th/17th century mansion; for example, Dalnamein Lodge is 12km from Blair Castle. The designed landscapes surrounding the older foci of ancient estates are clear markers of their medieval origins, in which mature trees survive in extensive grazed parklands beside planted deciduous woodlands. Their sometimes sinuous rather than linear boundaries can be particularly distinctive, as at Ballindalloch Castle, north-west of Grantown-on-Spey (Fig 15).

The contiguous estate plantations that are common in much of the area reveal a similar origin. There are varying extents of ancient woodland that have been managed for centuries for their timber or coppice wood. Some survive but others are difficult to spot, their only footprint being the enclosing wood banks concealed in modern forestry plantations or visible in rough grazing. These banks were created before the 19th century to keep deer and other browsing animals away from growing trees.



Woodland enclosures are not the only hidden features dating to before 1800 that may be found. Both within the conifers and amongst the small upland farms and rough grazing are numerous remains of medieval/post-medieval agricultural townships and their ridged plough lands, as in Glen Ernán by Strathdon (Fig 16). Some were abandoned, others were cleared by estate owners for sheep or deer, as on the Mar estate, Aberdeenshire, or when tenancies were re-ordered and improved farms established. Some of

the ruins are mere stone rickles of sub-rectangular shape amongst rushes or rank grass, but others are more substantial. Higher up the glens, indeed higher than anywhere else in Scotland, patches of vivid green beside the burns stand out from the moorland vegetation – a sign of summer huts known as shielings (Fig 18). They were visited annually by the inhabitants of the townships, before estate improvements were imposed and the summer grazing was given over to sheep, grouse and red deer.



Fig 14 Spey valley at Kingussie, Highland, with Ruthven Barracks in the foreground. The flood plain lies between the barracks and the 18th century planned town of Kingussie, and includes the best arable land when not flooded. Beyond lies the first terrace, the location for prehistoric and medieval/post-medieval settlements, now covered with conifer plantations and Kingussie Golf Course, with the hill ground and former summer grazings beyond, in the Monadhliath mountains, now used for sheep and deer. DP204777.



Fig 15 Ballindalloch Castle, Highland is of medieval origin and its designed landscape is well placed beside the confluence of the River Avon and the Spey, adjacent to some of the best arable land on the Spey. DP214426.

In the vicinity of these long-deserted farm buildings and shielings are even older features. In rough grazing and on heather moorland up to c450m there are the slight remains of later prehistoric settlements and agriculture, some extending over a number of hectares. They have largely survived in areas where farming and forestry have had only a minor impact, visible as discrete areas of lumps and bumps on an otherwise open strath floor, or on terraces high on the glen side. Uniquely, in the Perthshire straths

and Angus glens there are early medieval Pictish settlements visible as long turf-walled houses, examples of which at Pitcarmick Burn and Lair in Glenshee have been excavated (Fig 17).

However, not all land uses across this region have a long history. Numerous reservoirs for hydroelectric power were created after the Second World War across the western half of the area, and more recently wind farms have come to the fore in power generation.



Fig 16 The field system at Lynardoch, Strathdon, Aberdeenshire is a rare example of medieval ridge and furrow that has developed into terraces. The deserted toun occupied the space between the modern croft and the pan-tiled 19th century shepherd's cottage. SC961122.



Fig 17 The terraces along the Pitcarmick Burn, Perthshire preserve extensive prehistoric agricultural and settlement remains that were strikingly revealed by this low winter light. A long Pitcarmik-type house may be seen on the terrace to the right of the burn. SC385982.



Fig 18 Shieling huts in the foreground on the Geldie Burn looking north to Ben Macdui, Aberdeenshire. The conifers here are planted, but Mar Lodge estate contains extensive ancient pine woodland, much of it planted in the 1600s according to pollen evidence. SC436167.

The East Sutherland Highlands

The heart of Sutherland is a vast expanse of heather moorland interspersed with long finger-shaped lochs, smaller irregular areas of freshwater and great areas of wet peat bog. Most of the ground is less than 350m OD, though a few hills rise up from the flatter ground to over 700m. It is a largely open landscape, punctuated by extensive, modern, angular-shaped coniferous plantations (Fig 19). Only the major straths that stretch far inland are occupied today. Here there are well-dispersed medium-sized and small farms set in rectilinear fields, as well as occasional later 19th century shooting lodges.

Many of the farms and their fields date to the period of agricultural improvements of the early to mid-19th century. But there are some areas of small farms that are more recent; planned smallholdings, and then agricultural holdings, were created during the later 19th and early 20th centuries, as in Strath Naver. Even so, the number of habitations is not great. Most recently some, as at Armadale, have taken advantage of farm subsidies to create unenclosed improved pasture beyond their fenced fields. But otherwise there is little to suggest that anything other than forestry or wind farms are changing this area.

The main straths and associated smaller valleys used to be densely populated. The landscape is covered with the remains of medieval/post-medieval settlement and agriculture. These consist of the footings of farm buildings, kale yards, grain-drying kilns and curvilinear ring dykes or head dykes. Most are quite extensive, as at Rosal just north of Loch Naver. Although rough grazing today, they are picked out from the heather moor by the grassy patches that were once cultivated rigs, reminders of the Sutherland clearances of the early 19th century when sheep replaced people (Fig 20).

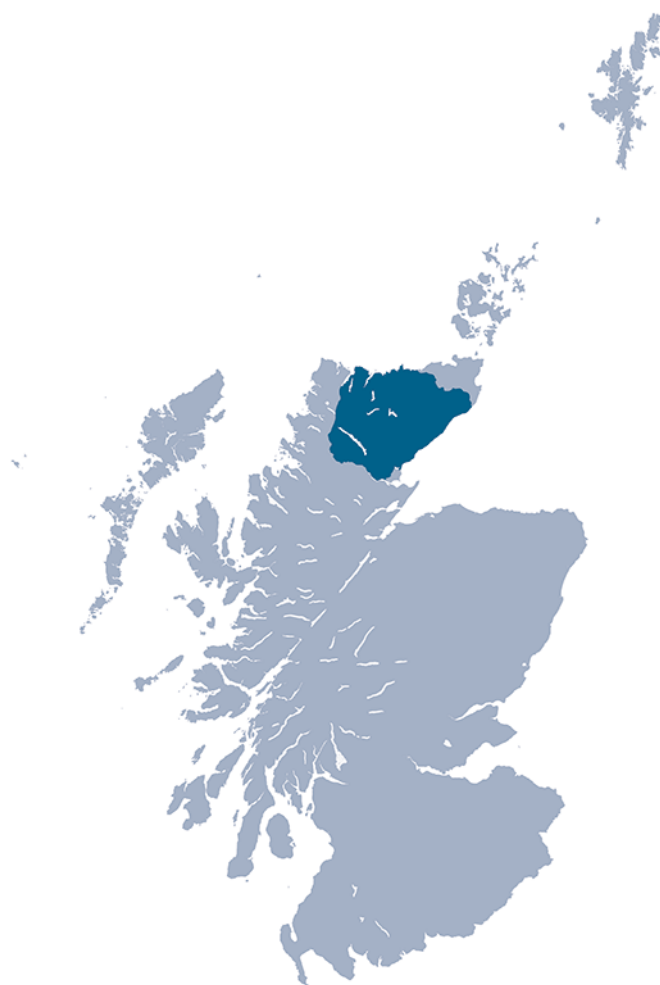




Fig 19 Ben Griam Beg is an extraordinary hill fort high on a prominent hill amongst the open moorland of Sutherland, an area partly planted with conifers in the 20th century. DPO80152.

Inland from these cleared settlements are associated features. Fairly close by are peat cuttings, a reflection of the need for fuel in what was then a largely treeless environment. Most have reverted to rough grazing, others are still in use. At a greater distance are the remains of summer shielings – where stock was taken to graze upland pastures until harvesting was finished. Grumbeg on the north side of Loch Naver is typical, with its shielings beyond Loch Gruama Mor. It also illustrates the longevity of farming in Sutherland, for the shieling ground is located amongst the remains of later prehistoric roundhouses and field systems. There are numerous such areas in this county, interspersed amongst the townships and further afield, while Neolithic cairns are scattered reminders of early prehistoric settlement.

The many hundreds of families who were cleared off the land in the early 19th century had to go somewhere. Emigration was the lot of many, while others were moved to the coast to become fishermen, as at Helmsdale (Fig 21). The crofting townships that are well spaced along the northern coastal fringe, such as Achtoty by Torrisdale Bay, were created out of this removal. Only a very few are sited on cleared settlements where the land had already been farmed for generations as at Farr. It is inland from these later townships that the peat cuttings are most extensive, often covering hundreds of hectares.



Fig 20 The Strath of Kildonan's narrow flood plain is lined with birch and oak woodland and has a pattern of Iron Age brochs (foreground) and medieval/post-medieval townships (top right), made visible by the green patches of grass in the dominant heather moorland that is managed for grouse and deer. DPO80133.



Fig 21 Helmsdale was planted as a fishing village in the early 19th century to provide employment for the tenants cleared from the Strath of Kildonan. SC1438433.

The South-west Highlands and Islands

Stretching north into Morvern and Ardnamurchan and south to Arran, this coastal area is characterised by vast expanses of 20th century coniferous forestry and, closer to the sea, Atlantic oak woodland that for centuries has been managed for its timber. Interspersed in patches along these tree-covered hillsides are the rectilinear fields and farms that originated in the 18th century agricultural improvements (Fig 22). The mountainous terrain and wetness has limited settlement to small pockets both today and in the past.

Much of this land was held by the dukes of Argyll, renowned for the changes they wrought across their estates, requiring tenants to enclose their runrig fields, common grazing and peat cuttings. Where the geology allows in an area of mainly poorly drained rough grazing, the modern pattern of rectilinear fields comes to the fore, as on Islay and Bute, and in Kintyre. These are well-established medium-sized farms created on land that had been in agricultural use for hundreds if not several thousand of years, as at Kilmartin Glen with its early prehistoric cairns and standing stones.

The improving landlords of the 18th century were also industrial entrepreneurs. Hidden within the oak woodlands of the west coast are hundreds of charcoal-burning platforms, a product that was used in small and large furnaces producing iron, as at Bonawe. Dispersed along the coasts are their planned villages (Fig 23), usually with detached allotments (Bowmore), created for tradesmen, craftsmen and labourers associated with farming (Inveraray), whisky production (Bowmore), quarrying (Easdale; Fig 24), fishing and transportation (Oban). To facilitate the latter the Crinan Canal was built and, over 60 years later, the railway reached the Argyll coast.

These same landlords also ensured that their own country mansions were suitably appointed. More numerous than further north, their designed landscapes associated with dwellings of late-medieval and more recent date are still evident, as on the Mull of Kintyre at Saddell House and the nearby Torrisdale Castle, while earlier castles like Duart on Mull still dominate the landscape.





Fig 22 Loch Creran looking north to Appin and the Ben Nevis range. The narrow strip of rectilinear fields and farms, patches of managed woodland and extensive forestry plantations typify Argyll and the backdrop of high mountains and rough grazing that separates Argyll from the rest of Scotland. DP076752.

Industries established in the 19th and 20th centuries have come and gone, as at Lochaline (silica), Ballachulish (slate), and Kinlochleven (aluminium). The increase in size of planned villages has been dramatic, for example Tobermory, as has the development of settlements at road and ferry junctions, as at Connel and Fionnphort. Much is a result of the development of tourism over the last 50 years, exemplified by Fort William and Brodick, although both have more ancient origins, the first as a 17th century artillery fort and the latter as a medieval estate centre of the earls of Arran and Dukes of Hamilton.

In the later 18th and early 19th centuries planned smallholdings were created in some parts of the region to provide land for poorer tenants, as on Arran. But analysis of this land-use type indicates that later in the 19th century other smallholdings emerged. Unlike the North-west Highlands and Islands, crofting townships are restricted to certain discrete areas – around Fort William, Tiree, the Ross of Mull and south-east Jura. Elsewhere smallholdings are intermittently evident around the coast. However, not all have survived. Just as with the abandonment of medieval/post-medieval townships (Fig 25), so too are there a few smallholdings and numerous rectilinear fields on the more marginal ground that have reverted to rough grazing. Auchindrain township, now a museum, survived as a working joint-tenancy farm until the mid-20th century.



Fig 23 Old and new: the planned village on Iona, and the 12th century nunnery ruin beside it, with its formal cloistered plan. DP193413.



Fig 24 Modern-day Easdale Island has been shaped by its geology and land use, becoming an industrial landscape through quarrying for slate. DP264463.



Fig 25 A medieval/post-medieval settlement clings to terraces above the sea at Innean Glen near the Mull of Kintyre. DP056842.

The Lowland Hills

Much of the inland countryside south of the Highland Line consists of rounded hills that reach a height of between 350 and 650m OD. Their steep flanks are regularly cut by narrow valleys, their burns and rivers eventually flowing into the major watercourses of the region. It is in the Cree Valley, Glen Ken, the higher parts of Nithsdale and Annandale, and along the upper Yarrow and Tweed that the characteristic dispersed pattern of sheep farms is most evident. This is a rural area where there are hardly any villages of any size. Above the farmed river valleys there are small hill farms, but more generally this landscape is a 20th century one of vast coniferous plantations and wind farms, long reservoirs and extensive areas of rough grassland, grazed by sheep (Fig 26).

However, across the higher ground this land use does alter towards the east-north-east, particularly across the Moorfoot Hills and Lammermuirs. Here the dominant forestry element of the west gives way to more extensive open hill-ground. An examination of this particular area indicates that these rolling hills were sheep pastures – names such as Wedder Law, Lamb Rig and Hogs Law are fairly common. In the 19th century they were worked from hill farms sited just below the 300m contour, located amongst surviving evidence for farming from earlier periods. In the Ochils, where sheep were also grazed, Glen Devon was favoured for its beef fattening by drovers in the 17th and 18th centuries, and many earthen-banked enclosures may be seen along its hillsides (Fig 27).

Medieval/post-medieval farmsteads are common in this area, along with a scatter of contemporary sheep enclosures. Usually close to burn sides in areas of rough grazing, such as north and east of St Mary's Loch, they also tend to be located along the edges of the rectilinear fields of the lower valley sides, where they have survived the improvers' agricultural works. In some places the steepness of the hillsides has resulted in the development of braided trackways – a reflection of the slight variation in route taken to bring stock down off the hill by drovers, dependent on the conditions underfoot, as east of Gifford and west of Duns.

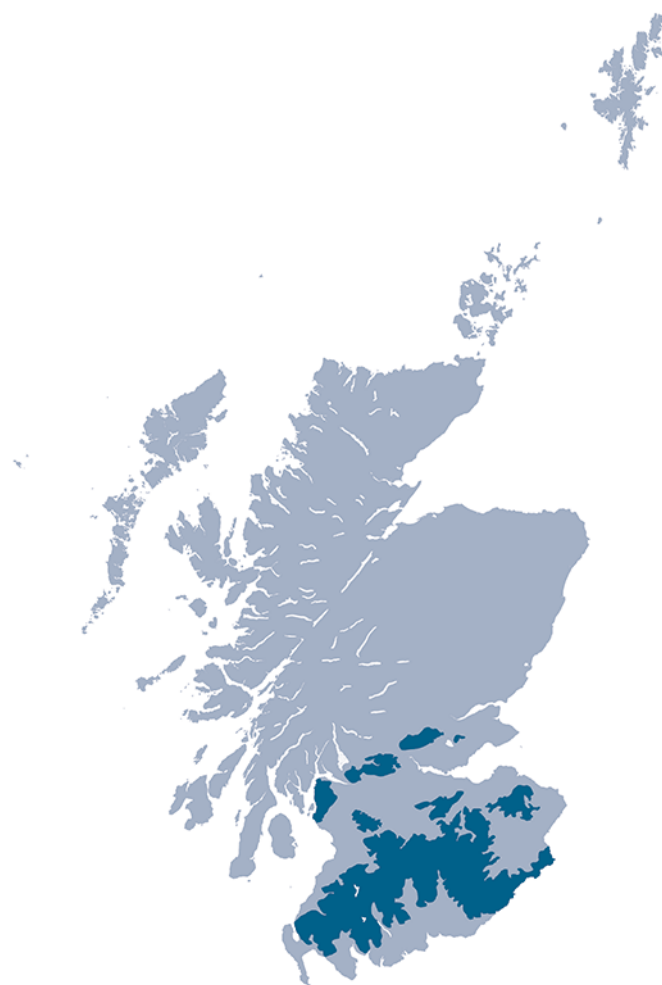




Fig 26 Loch Doon Reservoir, Ayrshire, which is surrounded by moorland used for sheep grazing and forestry plantations, drowned the site of Doon Castle which sat on an island and once controlled the route from Galloway to Carrick as well as access to a hunting forest. The reconstructed stone castle now sits on the far shore where a promontory projects into the loch. DP201166.

Looking even more closely at the areas of open hill-ground across the Southern Uplands there are other features that are from this period and earlier. Medieval hunting forests like Ettrick Forest once covered quite large areas of rural Scotland, although the land was not necessarily wooded. Such forests included open woodland, pasture and small settlements. To the south and west many of the hill names seem to be associated with hunting, such as Watch Knowe, Hart Fell and Deer Law. Very occasionally the remains of a medieval deer park can be seen in the rough grazing, consisting of land originally demarcated by a fenced bank and internal ditch to contain the deer, as at Hermitage Castle. They were usually created in areas where there was no settlement. In other places, as at Ettleton Sike in Roxburghshire, medieval assarts

(farmed areas) were designated within the hunting forest (Fig 28). Deer dykes were built to exclude deer from small settlements and their open fields of crops and pasture within the forest. In rare cases deer traps have also survived, as at Hermitage Castle. Making use of natural features and man-made dykes or high banks, funnel-shaped areas were created so that deer could be driven into a narrow space and killed (Fig 29).

A dispersed distribution of later prehistoric features is also present across the region. Settlement areas related to farming over 2000 years ago have survived, often as small oval enclosures as well as fortified hilltop sites, even within the dense forestry plantations.



Fig 27 Down Hill Iron Age fort is perched on the hilltop in the Ochils at Glen Devon, Perthshire, and there are medieval/post-medieval fields on the slopes above the modern farmland. The glen was used for fattening cattle in the post-medieval period. SC881310.



Fig 28 Forest-edge settlement at Kirk Hill, Etleton Sike, Scottish Borders. The two banks and ditches that cut diagonally across the image mark the boundaries of successive intakes of land. SC759248.



Fig 29 The deep gully at Peelinick in the Cheviots, in the centre of the image, is lined by a man-made bank and ditch to trap deer that dates to the medieval period. Since the 18th century, if not before, this area has been mainly used for sheep grazing. DP084847.

LOWLAND FARMING REGIONS

The North-east Lowlands and Orkney

This area has a preponderance of individual farms with rectilinear enclosed fields typical of the early 19th century, but amongst them are contemporary farms with planned rectilinear fields of very regular size, arranged on a common axis (Fig 31), such as those around Wick or the whole island of Shapinsay in Orkney. These are specifically characteristic of this region, dispersed across the agricultural land from Kincardineshire to Orkney. It is also a region in which much drainage of wetlands was engineered to turn it into farmland, as in the area around Duffus Castle (Fig 30). Few tenants in this region had any rights of inheritance that might force their interests to be taken into account by landowners, and whole farms were laid out at one time.

But these two farm types are not the only forms of landholding in the area. Smallholdings, with their irregular, geometric and modest-sized fields, cottages and small steadings are another significant element in this landscape. Most of them were created at the time of the agricultural improvements by paternalist landowners, taking in poorer land with the intention that cottagers and labourers would improve the rough grazing as well as work on the main farm. Some, especially on mainland Orkney, grew directly out of the pre-improvement townships like those at Grimeston and Bimbister, rare survivals from the post-medieval period. Planned groups of smallholdings laid out in geometric blocks are a significant element of this pattern in Orkney and Caithness. Not all have survived and many have been amalgamated with neighbouring farms, but their original layout can often still be traced in the field pattern, as at Cullicudden in Easter Ross.





Fig 30 The castle of Duffus, Moray sits on a mound in an area that was once wetland, which is evident from the drains bounding the fields. SC1005123.

Scattered across this countryside are areas of woodland – the remains of the policies and parks that surround major landowners' castles and tower-houses, as at Cawdor Castle. Most of these trees were planted and have been managed since the late 17th century. Beyond them are the larger 20th century forestry plantations. They generally fill the less fertile, slightly higher ground, even as far as Caithness, excepting Buchan where the impact of 18th and 19th century drainage has instead created an extensive agricultural land-use pattern of dispersed farms and fields, peppered with crofts.

Habitations are not confined to well-dispersed farms. This region is also characterised by numerous planned agricultural villages that were founded by wealthy landowners between c1760 and 1840. Having turned

the medieval/post-medieval townships into modern farms, they needed to accommodate labourers and new enterprises to implement and support the agricultural improvements. Dispersed across the reorganised countryside, the formal grid-like arrangement, as at Turriff, is in contrast to the older, medieval burghs, such as Tain. Almost all these older settlements of medieval origin survive as the core of now-expanded small towns. Allotments – very narrow rectangular plots – were often directly associated with these new planned villages, as at Macduff, providing small patches for the new tenants to grow fruit and vegetables and keeping an animal for milk and meat. At the same time as the inland villages, planned later 18th century fishing villages dot the coastal edge, wherever there is a slight bay or cove where boats could be safely anchored or brought ashore (Fig 32).



Fig 31 Maeshowe, Orkney sits in an area of planned fields with a group of smallholdings and crofts beyond at Stenness, with the moorland hills of Hoy in the background. DPO83284.



Fig 32 Burghead, Moray is not only a planned fishing village but occupies the site of the eponymous early medieval settlement. DP189273.



Fig 33 The coastal airfield at Dallachy, Moray has left a distinctive mark on the landscape. DP163293.

Just inland there is a much more recent addition to the land-use pattern. At the end of the First World War, farms were acquired by the Board of Agriculture and divided into smallholdings for veterans, often retaining the old field pattern, creating new steadings or splitting the use of courtyard steadings between the new tenants. During the Second World War numerous military airfields were established on the flat fields of the less undulating land close to the sea (Fig 33). A few are still in use, but most have reverted to fields, leaving their footprints as an unusual element in the historic landscape of this part of Scotland.

This model, modern farming landscape is also home to some of the finest early prehistoric settlement remains. Orkney and Caithness are scattered with large chambered cairns and standing stones, while Viking settlement may still be seen on the Brough of Birsay and at other less accessible coastal sites on Mainland Orkney, while low sandy hillocks preserve the sites of others.

The Central Lowlands

The Central Belt of Scotland is the most populous part of Scotland. It was fed by the migration of people from rural to industrial centres that began in the mid-1700s, resulting in significant changes to the landscape. Yet the region is not just a built-up one. There are considerable expanses of open ground associated with everyone's day-to-day lives, much of it 20th century in origin: reservoirs for water supplies, transportation links, quarries (Fig 34) and landfill sites, cemeteries, parks and recreational areas as well as farmland.

The region is characterised by large suburbs around towns and cities, along with industrial and commercial areas. Less obvious is the fact that most have developed around discrete medieval burghs or industrial planned villages of the later 18th century, and only a few are more recent new towns of the late 20th century, like Cumbernauld (Fig 35). One notable element of this process is the Georgian developments of Edinburgh and Glasgow that have been strongly influenced by the classical architectural character of both of the two major conurbations. Urbanisation is inherently a process of continual change, with land being used for factories then homes, sports fields then housing estates, coal mines then industrial estates. These revisions may or may not have left obvious traces in the immediate environs, but often it is the footprint that reminds us of the origin of the place.

Underlying the ever-increasing urban sprawls are the rectilinear fields and farms of the agricultural revolution, which may themselves now be cast in stone as housing and roads replace fences and fields. This later 18th century landscape can still be seen, interspersed between today's growing settlements. It characterised this part of Scotland, as it still does on the east coast of the country, until landowners utilised their geological or riverside resources for industry. Coal mines, iron smelting, large water-powered mills, shipbuilding and engineering works were the basis of economic expansion, leaving their mark on the land.

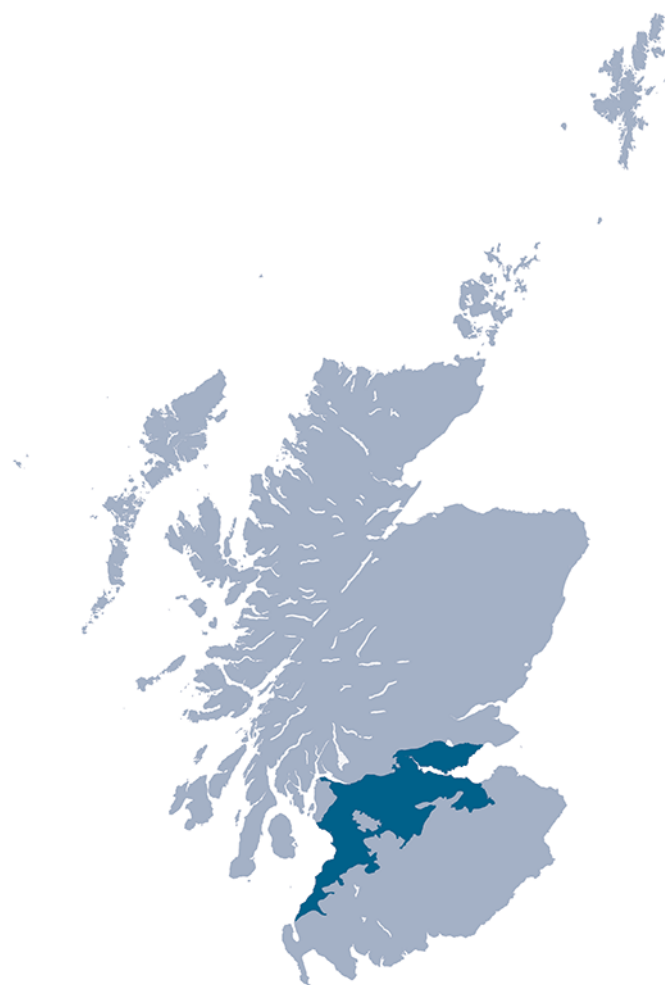




Fig 34 St Ninians opencast coal mine beside the M90 in Fife has been landscaped with an art installation by Charles Jencks but otherwise remains open, as do many others across the Central Belt. DP110945.

These landowners were either from well-established ancient families – their castles redesigned in the 1600s and 1700s within vast policies and parks – or successful 18th and 19th century merchants and industrialists who emulated them by building large country mansions set in extensive private grounds. Their designed landscapes pepper this region today, with their areas of parkland and ‘policy’ woodland (Fig 37), some of which are now golf courses or country parks, such as Pollok House, City of Glasgow.

After the First World War a number of farms close to urban centres were purchased by the state and spilt up to create smallholdings, known as Holdings, for men returning from war. Some have survived, while others have reverted to rectilinear fields. In other areas, particularly along the upper Clyde, it is the orchards that once supplied fruit to urban markets that have almost completely disappeared, apart from a few relict fruit trees and their hedgerow boundaries. Patches of less fertile farmland have reverted to rough grazing and in some instances still retain evidence of medieval/post-medieval settlements and agriculture, such as in the higher ground around Slamannan, Falkirk.

During the 20th century further changes were wrought. On the rougher hill ground there are now conifer plantations, as on the Cleish Hills, Fife. Other parts have been despoiled by vast opencast mines, few of which have been restored to pasture after closure (St Ninians, Fife; Fig 34), and some areas are now being used for the site of wind farms (Whitelee Forest, East Renfrewshire). Motorways have been thrust through the landscape, repeating the creation of transport routes of the late 18th and 19th centuries – the canals and railways (Figs 36 & 37).

It is therefore perhaps surprising that medieval and earlier features have survived at all. Across the region there are individual later prehistoric fortified sites on a few prominent hill tops. Between the firths of Clyde and Forth and northwards towards the Tay, parts of the Roman Antonine Wall and associated forts are to be seen; often followed closely by the route of the Forth and Clyde canal (Fig 36). And under the ploughsoil are the remains of prehistoric or later features, although only visible as cropmarks on aerial photographs.

Fig 35 Cumbernauld New Town is a quintessential 20th century development in a rural area, moving urban population out of Glasgow. DPI41866.





Fig 36 The Forth and Clyde Canal, a vital communications link in the industrial revolution, may be seen running alongside the Bonny Water at Allandale, Falkirk. It also runs parallel to the Antonine Wall, ploughed out here, and the main railway line. DPO19684.



Fig 37 Newliston House, City of Edinburgh. Its designed landscape contrasts with the Winchburgh shale bing, West Lothian and the M9 motorway to Stirling beyond. DP142797.

The South and East Lowlands

The agricultural heartlands of lowland Scotland, both north and south of the Central Belt, are sandwiched between the east coast and either the Highlands or the Southern Uplands. The large farms with their rectilinear fields and shelterbelts reflect the agricultural improvements of c1720 to the mid-19th century, maximising productivity across the fertile lands of the region.

These agriculturally productive lands are well populated, for the farms are served by regularly spaced villages – generally every 3km or so. They were either established during the medieval period, as at Fettercairn, Aberdeenshire or Lilliesleaf (Fig 38), or replanned by major landowners as part of the 18th century improvements, such as Leitholm, Scottish Borders. Most have grown in size, particularly during the 20th century. However, a few seem to be locked in time with hardly any expansion, as at Kilconquhar and Lindores in Fife. Market towns are well spaced within this settlement pattern, generally located every 10–20km, as with Coupar Angus, Alyth and Kirriemuir. Most originated as medieval burghs (Fig 39), but some of today's urban centres have evolved from planned villages, such as Stonehaven. Other towns have developed from industrial planned villages, like Blairgowrie and Galashiels, while a few grew around major medieval ecclesiastical centres, such as Melrose, St Andrews and Arbroath.

Scattered amongst the predominantly large farms are smallholdings created for poorer tenants during the agricultural improvements, particularly in Perthshire, where landowners created groups of small farms, such as the Pendicles of Collymoon (Fig 40). They were augmented by the establishment of Holdings for veterans and others after the First World War, located close to centres of population, such as North Berwick. However, such very small farms are not common or extensive in area, unlike those of the north-east.

Interspersed across these agricultural Lowlands are the foci of land ownership – castles and country mansions, with designed landscapes of parks and woodland with curvilinear boundaries, such as Airlie, Angus and Kirkconnell, Dumfries and Galloway. These irregular edges are in stark contrast to the rectilinear form of fields, small coniferous shelterbelts and planned villages. They are also mirrored in the shapes of the numerous deciduous shelterbelts, set alongside watercourses or following contours.





Fig 38 The medieval village of Lilliesleaf in the Scottish Borders is a typical street village with reverse-S-shaped fields in the foreground. DP156857.

This sinuous patterning in the landscape is also present in the evidence for pre-improvement farming. The reverse-S-shaped fields of medieval origins that have occasionally survived the Improvements reflect the shape of open fields of ridge and furrow of pre-enclosure agriculture (Figs 38 & 39). Although such boundaries are not common, there is plentiful evidence of reverse-S-shaped ploughing immediately beneath the soil. Aerial photographs taken during periods of drought in the summer reveal their curvilinear lines under crops of grain. Such photography has also revealed the time-depth of settlement and agriculture across the region. The intensity of land use is demonstrable, with prehistoric farms and fields clearly visible as cropmarks across the region.

Analysing features in these aerial photographs also reveals evidence for a brief phase of military occupation of the region. The playing-card outline of Roman marching camps and signal stations, Roman forts and the associated linear road network may be traced in Strathearn, Annandale and Tweeddale. Often in close proximity, up on the knolls of rough ground, are contemporary or earlier prehistoric fortified sites, such as Traprain Law and the Brown and White Caterthuns (Fig 41). However, it is only along the interface zone of agricultural improvement and hill ground, where there is rough grazing, that there is a scatter of upstanding prehistoric or medieval structures in this region.



Fig 39 Reverse-S-shaped strip fields still mark the hillslopes above the burgh of Lauder, Scottish Borders with the adjacent designed landscape of Thirlestane Castle in the foreground. DP053131.



Fig 40 The Pendicles of Collymoon, Stirling are a rare example of lowland smallholdings. SC506663.



Fig 41 White Caterthun, Angus occupies a hilltop within the patchwork of arable fields of 18th and 19th century origin in Strathmore which it dominates. DPO56577.

The Galloway Lowlands

Galloway's lowland farmland occupies the coastal strip from the River Nith to the Rhins of Galloway. Various rolling and rugged, this is countryside that improved agriculture sometimes failed to tame in the 18th and 19th centuries (Fig 45). Like other lowland farmland it is a patchwork of farms and rectilinear fields, with shelterbelts, plantations, but comparatively few villages. Instead, this is a landscape of individual farms with links to the few market towns that are generally located either by what was once a good harbour, such as Gatehouse of Fleet, which was served by a canal, or on the lower reaches of a main river, as at Dalbeattie. Some are planned villages, like Gatehouse of Fleet, or burghs of medieval origin like Wigtown or Glenluce (Fig 42).

In places, especially to the west of Newton Stewart, the curvilinear shapes of pre-improvement fields survive amongst this new field pattern, their boundaries reflecting the intricate complexity of the landforms of the region, particularly glacial drumlins, as at Craighirnoch (Fig 43). An improvement variant of this, identified in HLA as Sub-rectangular Fields, has also been recorded, where the broken terrain has dictated the course of modern field boundaries, as at Dunrod (Chapter Two, Fig 24). Dispersed amongst this farmed landscape are the designed landscapes that were once *de rigueur* for castles and country mansions of the 17th–19th centuries, of which Castle Kennedy is the largest. Later 19th or 20th century smallholdings are only occasionally found here. By contrast, post-First World War agricultural holdings are located close to market towns, such as those immediately west of Dumfries and south of Wigtown.





Fig 42 Wigton medieval burgh is an example of a small market town with some recent expansion and surrounded by mainly pasture fields on the rising ground and arable on the flood plain at the mouth of the River Bladnoch. Note the reverse-S field boundaries in the foreground. DP012460.

Scattered around the margins of the fields and rough grazings of the low hills there is considerable evidence of pre-improvement agricultural land use, often with attempts at improvement (Fig 44). There are numerous small patches of medieval/post-medieval settlements and agriculture, with the remains of the farmsteads at the heart of the ridged fields and head dykes; the fields often shaped by the drumlin terrain. These have survived in areas that were regarded as

marginal zones better suited to grazing by improving landlords. Even in areas where there has been recent small-scale afforestation the evidence for these medieval or post-medieval settlements has survived to a significant extent. And dispersed throughout this relict element in the landscape is an even older one, with patches of prehistoric settlement and agriculture confirming the longevity, if not continuity, of lowland farming.



Fig 43 At Craighbirnoch, Wigtownshire the medieval/post-medieval fields have continued in use as Curvilinear Fields at the modern farm, while others that have been abandoned show as grassland. DP105939.

However, not quite all of Galloway is gentle rolling countryside. During the Second World War the Solway coastal edge was the location for various military establishments, such as Powfoot, as well as a few airfields. Subsequently, two large areas

continued to be used by the Ministry of Defence – Glenluce (Fig 46) and Kirkcudbright. The MoD holdings at Luce Bay and near Kirkcudbright are amongst the most extensive still maintained by the army.



Fig 44 A former Sub-rectangular Field, overlying medieval ridge and furrow at Drumblair Moor, Galloway shows that attempts at improvement sometimes failed. DP147786.



Fig 45 The furlongs of ridge and furrow that survive between the outcrops of rock in this rectilinear field is a facet of the broken terrain of Galloway that often limited the capacity for improvement agriculture to achieve uniformity. DP147927.



Fig 46 West Freugh airfield and the ranges of Glenluce on the Solway shore backs on to farmland and is one of a number of military installations along the coast of Dumfries and Galloway. DP011180.

ENDNOTES

- 1 McKirdy, A. and Crofts, R., 2010, *Scotland: The Creation of its Natural Landscape: A Landscape Fashioned by Geology*. Scottish Natural Heritage: Perth.
- 2 RCAHMS, 2007, *In the Shadow of Bennachie: A Field Archaeology of Donside, Aberdeenshire*. Society of Antiquaries Monograph: Edinburgh.
- 3 Dixon, P., 2003, 'Champagne Country: A Review of Medieval Settlement in Lowland Scotland', in Govan, S. (ed), *Medieval or Later Rural Settlement in Scotland: Ten Years On*. Historic Scotland: Edinburgh, pp. 53–64.
- 4 <https://canmore.org.uk/site/190744/quendale> [accessed 2018].
- 5 Smith, B., 2000, *Toons and Tenants: Settlement and Society in Shetland, 1299–1899*. Shetland Times: Lerwick.
- 6 <http://www.getmapping.com/products-and-services/aerial-imagery-data/aerial-data-high-resolution-imagery> [accessed 2017].

Historic Land-use Assessment of Scotland, 1996–2015



HISTORIC ENVIRONMENT SCOTLAND

ÀRAINNEACHD EACHDRAIDHEIL ALBA

Chapter Four: UNDERSTANDING THE HISTORIC LANDSCAPE



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Chapter Four:

UNDERSTANDING THE HISTORIC LANDSCAPE

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INTRODUCTION

This chapter highlights the nature of the information revealed by the HLA project and considers how this has enhanced our understanding of the history of the landscape and how it can aid its management.



Fig 1 The highland-lowland divide in land use is starkly illustrated here at Loch Lomond with the rectilinear fields in the foreground and the moorland in the background. SC506616.

Section One:

THE HISTORICAL NATURE OF SCOTLAND'S LANDSCAPE

Modern Land Use

When travelling between the main urban centres of Scotland, a glance out of the car or train window would suggest that most of the modern landscape is farmland; unless this is a trip to Inverness via the Cairngorms, a relatively modern route. However, this appearance is an exaggeration, since, as described in Chapter Three, the proportion of Rectilinear Fields and Farms varies across the four lowland regions from 29 percent in the Central Lowlands to 41 percent in the South and East Lowlands. Moreover, more than half of Scotland is Moorland and Rough Grazing, with about 15 percent planted with forestry in the 20th or early 21st century, mainly on former rough grazing. In actual fact, barely one quarter of Scotland's land mass (23 percent) is used as farmland and disposed in a pattern of rectilinear fields, with dispersed individual farms, dating to the agricultural improvements of the 18th and 19th centuries (Fig 1). No other Land-use Type exceeds 2 percent except Managed Woodland, much of it designated Ancient Woodland, that mainly dates to the 18th and 19th centuries and was part and parcel of reforestation during the agricultural and industrial revolutions. The built-up areas of the country, comprising the urban environment of suburbia, industrial estates, public buildings and the urban centres, is not such a big area as may be imagined, making up only about 1.8 percent, which seems astonishingly low; even in the Central Lowlands its density rises to only one sixth of the land, which shows how low the density of occupation in Scotland really is (Fig 2). Furthermore, the greater part of this urban area is late 19th and 20th century in origin (Chapter Two, Section Three).

Apart from those urban cores which are medieval in origin, the modern landscape is largely the creation of the last 250 years. Man-made and altered water bodies account for nearly 1 percent of modern land use, the result of hydrological engineering projects of the 19th and 20th centuries (Chapter Two, Section Three). A slightly larger amount of land is occupied by smallholdings and crofting townships (1.05 and

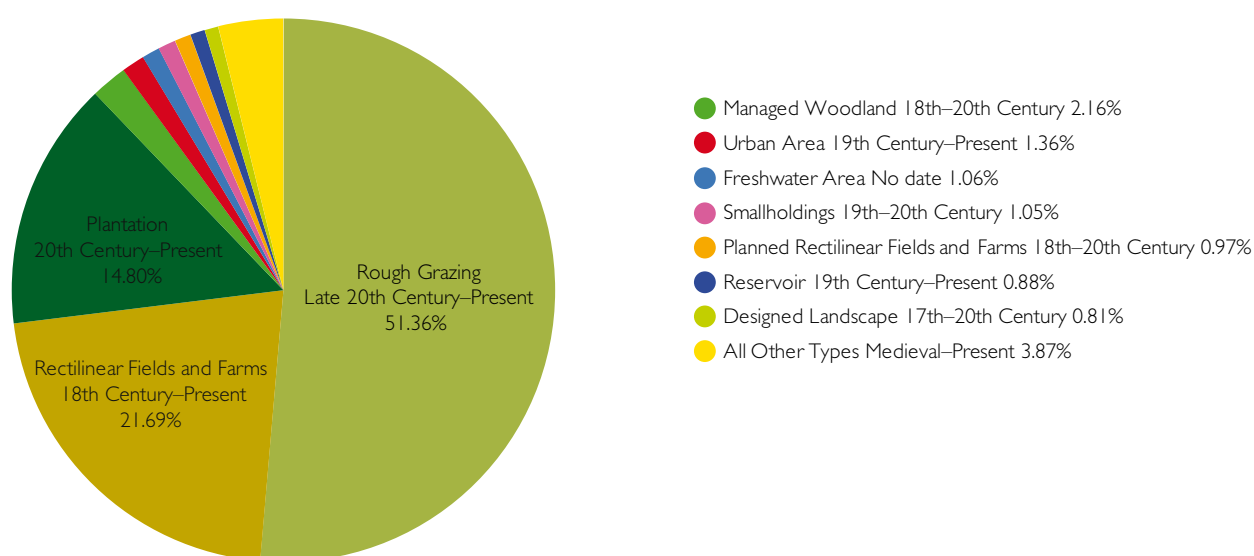
0.36 percent respectively), the latter found exclusively in highland regions of the north-west. Both are a consequence of the need for a settled workforce during the agricultural improvements, whether in the lowland north-east or the Highlands. Designed Landscapes (including Cultivated Former Parkland) that extend to about 1 percent of the country form a much greater proportion of the lowland landscape, where land is more productive, than in the uplands; because of their origins in many cases as medieval estate centres, they comprise one of the oldest parts of the modern landscape. Recreation areas of all other kinds, including golf courses, which are separately charted in the HLA map, total 0.7 percent and are generally distributed in the more populous areas of the Lowlands; though some sports, such as skiing, have particular mountainous requirements. However, apart from some older golf courses, they are mainly 20th century and later in date.

It is worth emphasising the relatively recent chronological origins of the main constituents of the present landscape outlined above. The main period of creating Rectilinear Fields was during the agricultural improvements of the 18th and 19th centuries and only Designed Landscapes have earlier origins in the 17th century. Conifer Plantations are 20th century and later, whereas Managed Woodland is dated from the 18th to the 20th century, though some may originate earlier on steep hill slopes inimical to any other land use. For Rough Grazing the date range is open-ended since its extent continues to be altered and reduced by forestry, wind farms and modern agricultural improvements. Yet the extent of it is largely that created by the agricultural improvements, with the enclosure of fields and the conversion of upland settlements to pasture which only the plantation of conifers in the 20th century has significantly altered; although wind farms are now making inroads. Urban Areas have been expanding from their largely medieval urban cores since the early 19th century, taking in farmland for the most part, as manufacturing industry has developed and middle class and workers' housing is built for the labour force (Chapter Two, Section Three).

However, the dominance of recent alterations is just one side of the modern landscape. Survivals from earlier periods have influenced the shape of the urban and rural landscape. On the one hand this is in the form of relics of past settlement, but there is also

an important survival of the medieval landscape in the present. Nor has the recent landscape of the agricultural and industrial revolution been static; it has itself undergone significant modification since the 20th century and continues to do so.

Fig 2 Pie chart and table of the ten most extensive Historic Land-use Types of the landscape of Scotland (based on HLA data 2015). Relict Types are not included, only current Types. GVO06946.



Percentage of the ten most extensive Land-use Types

Historic Land-use Type	Period	Area (ha)	Percentage
Rough Grazing	Late 20th Century–Present	40496814055216	51.37
Rectilinear Fields and Farms	18th Century–Present	17087841712252	21.69
Plantation	20th Century–Present	11661271168670	14.80
Managed Woodland	18th–20th Century	170255170328	2.16
Urban Area	19th Century–Present	107029107019	1.36
Freshwater Area	No date	8340883419	1.06
Smallholdings	19th–20th Century	8311283109	1.05
Planned Rectilinear Fields and Farms	18th–20th Century	7650976483	0.97
Reservoir	19th–Present	6911969136	0.88
Designed Landscape	17th–20th Century	6384463860	0.81
All Other Types	Medieval–Present	305105305390	3.87

Relict Landscapes

As we have seen, survivals from earlier land uses continue to influence the present landscape, even though these elements are no longer actively managed for their original purpose. Among the earliest features is Dere Street, which began life as a Roman military road that is still followed for part of its route by minor roads in the Scottish Borders and respected for much of its length by the pattern of field boundaries as it rises up from the low ground by the river Teviot to the border line (Chapter One). Even prehistoric features have maintained a footprint in the

landscape, such as the Iron Age forts whose stepped silhouettes are visible even to the casual observer at places like Eildon Hill North beside Melrose (Fig 3), or the many prominent mounds that hold prehistoric burials on Orkney, such as Maeshowe (Chapter Three, Fig 31). Many traces of the medieval/post-medieval farming landscape have also survived, most clearly on the margins of modern agriculture (Fig 4). Some relict features are more recent, and perhaps more obvious, such as the scars left by opencast mining near Kelty, Fife or by the shale bings at Niddry in West Lothian, resulting from coal-shale exploitation in the 19th and 20th centuries (Chapter Three, Figs 34 & 37).



Fig 3 Eildon Hill North, Scottish Borders, showing quite clearly the ramparts in the heather, with the backdrop of the pattern of rectilinear fields of the Merse, Berwickshire. DP019896.



Fig 4 Three relict Land-uses are evident here at Barra Hill, Aberdeenshire. The hillfort was planted with trees in the 19th century, helping to preserve the Iron Age fort and the medieval/post-medieval reverse-S-shaped rig, but it has reverted to rough grazing. Note the Planned Fields in the background. SC773003.

The distribution of relict traces across present land uses is interesting and helps our understanding of their survival. Some 8 percent of Rough Grazing areas display the relict traces of past settlement, whereas only 6 percent of Rectilinear Fields and Farming do, with 1 percent of this only visible as cropmarks in dry seasons. This is a clear indication of the destructive process of modern cultivation on the remains of earlier periods of settlement. More surprising is the 9 percent of Forestry Plantations with traces of past settlement and land use, while Managed Woodland is apparently even more conducive to preservation at nearly 11 percent. The comparatively high figure for Plantations would seem to be contradictory since most forestry was and is planted on areas of Rough Grazing, suggesting that there is more relict survival in forestry than in unplanted rough grazing. While this may be related to the process of afforestation that has identified and conserved important archaeological sites since 1989, it is also because plantations target the margins of agricultural land where most deserted medieval and later settlements are to be found. Managed woodland in the Aberdeenshire lowlands of Donside often preserves the archaeological remains of settlement, which are revealed when the trees were cleared, for example at the Iron Age fort of Hill of Barra, Aberdeenshire, where the former woodland is recorded as a Plantation Enclosure (Fig 4). On the other hand, Designed Landscapes, much of which are planted

with trees, have been relatively unproductive, with barely 2 percent occupied by relics of past settlement, though former parkland has produced relatively more extensive areas visible as cropmarks, due to the ploughing up of parkland for arable, as at Glamis Castle (Fig 5). While these figures appear to be on the low side, it may be telling us that designed landscapes were laid out on what had been agricultural land that had already removed traces of earlier settlement.

It is important to appreciate that almost half the past landscapes that have been mapped occur in Rough Grazing areas (48.9 percent), and barely one fifth in Plantations (18.9 percent) while Rectilinear Fields are even less productive (16.6 percent). This puts the forestry figure above in perspective. Since most forest planting has been on areas of Rough Grazing it reflects the destructive effect of forestry planting on the visibility of past landscapes, and that of modern farming since the agricultural revolution even more so. Yet, more than 90 percent of Rough Grazing is apparently barren of past settlement, and the mountainous aspect of it is sufficient to explain the low overall figure, with so much land above 300m. However, some relict features are too small to have been mapped, while shieling sites only include the huts, not the grazing itself, which would have been more extensive. All of this means that Rough Grazing areas are a precious resource for the survival of remains of the past, and these may be more extensive than shown within the constraints of HLA data alone.



Fig 5 Glamis Castle, Angus and designed landscape. Traces of the former avenue showing in the foreground as a cropmark. SC396647.

Recognising Patterns from the Past

Time-depth has been added to our modern land use through the HLA interpretation which reveals a greater complexity than that shown by other land-use or land-cover maps. It has introduced new details about modern land use, such as the typological and chronological range of field patterns that are not available in other land-use data-sets. For example, it shows that the generic pattern of rectilinear fields has within it planned rectilinear fields, curvilinear fields and sub-rectangular fields, each reflecting a particular development of use, regional distribution and date of origin, variously contributing to modern landscape character. It demonstrates how curvilinear and irregular shaped fields are usually influenced by the survival of elements of the pre-improvement field and settlement patterns, and how later enclosure accommodated these pre-existing elements. Overall, the HLA data indicates that the modern landscape incorporates a degree of continuity and adaptation of land use, as well as considerable change over time.

As we have seen areas have been identified and mapped where evidence of previous land use is still visible, though not in active use, such as former parkland later turned to arable but with park trees surviving to indicate its origins. One of the best examples of such relict land use is reverse-S-shaped fields, which is evidence of medieval farming retained as modern field boundaries, as at Cornton Vale (Chapter One, Fig 6). At Abernethy in Perthshire, the proximity of this type to the medieval burgh suggests that it could have originated as the medieval strip fields of the burghes, and its distinctive shape is also still reflected within the property boundaries of the burgh.¹ This type of past influence on the present farming landscape of Scotland was unexpected due to the completeness of the Agricultural Revolution in Scotland, although it is known to be present in many parts of England.² It is, however, a diminishing asset since one example at Falkland has been removed since it was mapped by the project.

Some historically important land uses that are no longer in active use have also been recorded. Charcoal-burning platforms are a good example; these are evidence of iron production, a major industry based at foundries like Bonawe or Furnace which were located for access to the oak woodlands of Argyll. It has also revealed earlier phases of land use, such as peat cutting and golf courses that are now practiced in a more intensive way as a result of commercial development. HLA has expanded the evidence for, and distribution of, some well-known land-use elements, such as designed landscapes and medieval villages, which are now known in the north-east as well as in the Scottish Borders (Chapter Two, Map 2). In lowland areas where later cultivation has been particularly intensive, some of this evidence still survives as cropmarks. There are cropmarks near Leuchars in Fife (Chapter One, Fig 20) of the same type of reverse-S-shaped strips that have survived as modern fields at Abernethy.

Land-use patterns also highlight considerable regional distinctiveness across the country. For example, sub-rectangular fields are mainly concentrated in Galloway, probably in response to the geology of its landscape (Chapter Three, Galloway Lowlands); crofters allotted cultivation plots – a rare survival of unenclosed fields in post-improvement agriculture – are specific to the machair of the Western Isles (Chapter Two, Fig 37). Other Land-use Types reflect a different regional approach to a common trend; for example, summer huts developed only in the rural lowlands (Chapter Two, Map 23), but have a similar seasonal use to the caravan parks found in coastal areas. There is evidence of regional distinctiveness in relict land uses as well, for example the early prehistoric field systems found in Shetland (Chapter Three, Fig 6) and the cleit landscape of drystone storage huts unique to St Kilda (Fig 6).



Fig 6 The turf-capped drystone cleits at St Kilda, Western Isles are unique to isles of Hirta. SC1467636.

Some well-known Land-use Types have been shown to have extended beyond their previously known geographical range or predominant period of use. For example, smallholdings (a term used to distinguish these types from the legal term croft) are not only found in the traditional crofting counties but also in Moray and Aberdeenshire (Chapter Two, Map 16). Some crofts in the north-east can be shown to have historical origins in the medieval period, while the concept of very small farms continued to

develop in the 20th century, with the creation of agricultural holdings after the First World War and new townships in Skye and the Western Isles. The extent of previous exploitation of the low-water mark, through the use of reclamation, fish traps, reed beds and timber ponds, is now also more clearly recognised (Chapter Two, Section Four), while the spatial extents of particular historic types, such as water meadows and orchards, have now been recorded for the first time.



Fig 7 Kilconquhar, Fife displays the typical features of a medieval village. Its main street and properties that run down to the loch were created as a result of peat cutting. The presence of a second medieval village called Barnyards to the right is unique in rural settlement in Scotland. DPO40826.

Evidence of medieval origins has been traced in urban areas, towns and villages across the lowland areas of the country, together with relict elements of the medieval landscape itself. This includes the streets and property boundaries of medieval villages and burghs (Fig 7), significant structures such as Edinburgh Castle, extensive parks like that at Holyrood (Chapter One, Fig 33), and the boundaries of strip fields such as those preserved in suburban St Andrews (Fig 11).

The deliberate planning of later settlements is still reflected in planned villages, smallholdings and Georgian New Towns of the 18th and 19th centuries (Chapter Two, Fig 11). Planned villages were often

built to serve the needs of industry and are usually located in the places that served the demands of those industries best, such as where the iron or coal was to be found, or where a mill could be set up to drive a textile manufacture. At many planned villages a distinctively ordered character to the surrounding landscape was created by the allotments that were given to the occupiers to provide a basic source of food. In lowland areas the landscape is dominated by the improvement-period field pattern, which has itself changed over time through replanning and field amalgamation (Fig 8); this landscape also retains elements of planning, seen, for example, in the co-axial fields common to the north-east, where whole farms were laid out at one time.

The influence of past use on the present can even be traced back into prehistory. In those places where the landscape has been found to bear evidence of three previous different phases of use, the majority are prehistoric in origin (Fig 4), with some having two phases of prehistoric activity. Such multi-phase landscapes occur in a variety of modern land uses, predominantly in rough-grazing areas, though they also appear as cropmark sites. These features tell us much about the long-term development of the landscape, both indicating that some locations were attractive for settlement through time and

that previous land use often influenced subsequent use. For example, the distributions of prehistoric settlements are often linked with later periods of use, as in highland Perthshire, where early medieval and prehistoric houses are found in the same landscape context, though they were ploughed over in the medieval and later periods at Lair, Perthshire (Fig 9). Similar continuity can be seen in the defensive use of particular sites, as at Stirling and Edinburgh Castles, which developed from later prehistoric defences, through medieval and post-medieval fortifications, to modern military installations.

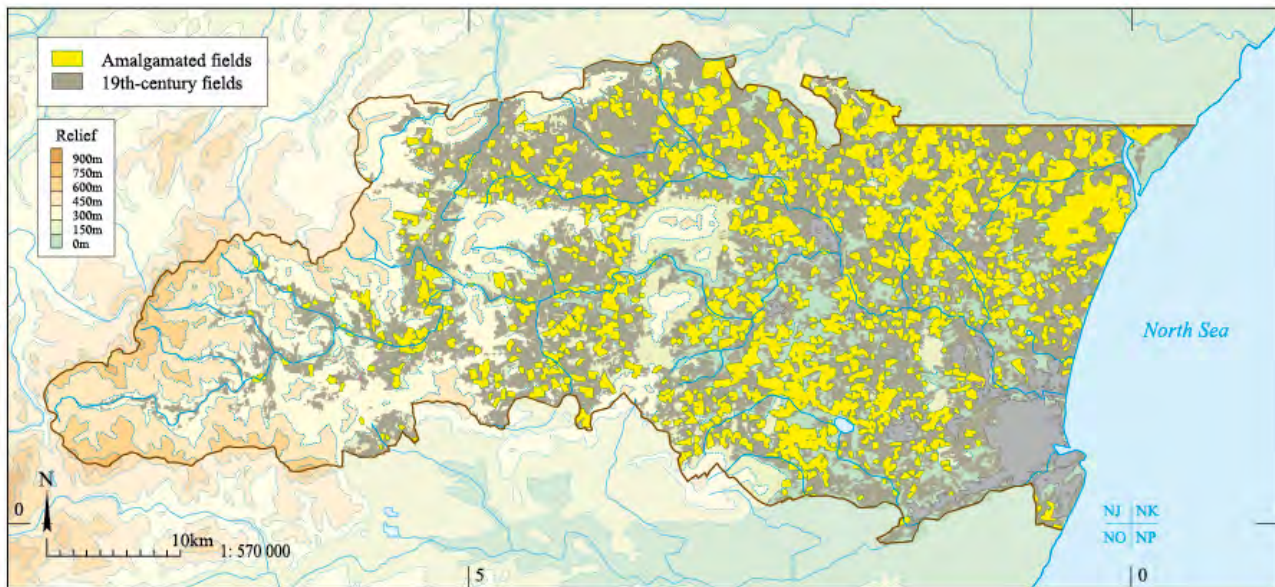


Fig 8 Map of amalgamated fields in Strathdon, Aberdeenshire. GV000105.



Fig 9 Lair, Perthshire, a round cairn edged with stone and early medieval Pitcarmick-type houses in the burned-off heather show the multi-period use of this moorland. Straight rig, probably of the improvement period, can be seen on the left in the foreground, and less regular rig to the right. SC1458236.

St Andrews: A Medieval Survival in an Urban Context by Mike Middleton

In common with most medieval burghs, the centre of St Andrews is dominated by the traces of medieval land management, including the medieval town, the early medieval Christian site round St Rule's, the cathedral and its walled precinct, and the medieval castle (Fig 10).

In contrast, the surrounding suburbs and rural hinterland are dominated by modern land use: golf courses, suburban housing, university buildings, and rectilinear fields and farming of the improvement period. It is this combination of old and new that gives St Andrews its distinctive character, allowing it to be economically diverse and attractive beyond its local population, to tourists, students and the sporting community.



Fig 10 St Andrews Cathedral and precinct, with the tower of St Rule's church in the foreground, lies at the focus of the three medieval burgh streets, while the castle sits on its own promontory to the right. The famous golf course is visible in the background. SC369406.



Fig 11 Reverse-S-shaped fields maintained in the suburban streets at Hepburn Gardens, St Andrews. DPO40862.

It is the medieval period that has had the most profound influence on St Andrews. The first reference to medieval occupation is dated AD 747, which mentions a place called Cennrighmonaid, meaning the church on the head of the king's mount, thought to refer to the headland above the harbour. This Early Christian centre grew into what became St Andrews Cathedral, one of the largest pilgrimage centres in Europe. Although its buildings were largely destroyed at the Reformation, it is a property in the care of the state, classified in the HLA map as a Recreation Area and Medieval Cathedral, but its precinct still imposes itself on the modern town. This medieval

origin is similarly reflected at St Andrews Castle, also now a state monument, on its promontory a short distance north-west of the cathedral. The medieval town influences the present, because its property boundaries are still reflected in modern patterns of ownership and the economic base. Founded as a burgh of the bishop under King David I in 1140, the layout of the burgh continues to have a major influence on modern development, particularly the road layout, with the central east-west Market Street, its name indicating its use for markets, and North and South Streets, as well as the narrow house plots and later medieval architecture.

The influence of medieval land use is not limited to the urban centre of St Andrews. Medieval agriculture has helped shape the modern suburban expansion around the medieval burgh. An example of this is the 20th century houses on either side of Hepburn Gardens (Fig 11), which sit within long reverse-S-shaped plots of land that are themselves fossils of

medieval reverse-S-shaped strip fields. Otherwise, the agricultural landscape around St Andrews is an 18th and 19th century landscape of large, rectilinear fields, complementing the designed landscape of Strathtyrum House (Fig 12), while the development of St Andrews' famous golf courses along the coast to the east and west has limited suburban expansion to the south-west.³



Fig 12 Strathtyrum House and its designed landscape is situated to the west of St Andrews beside the Old Golf Course on the right of the image. Rectilinear Fields may be seen to the left. DPO51260.

Section Two:

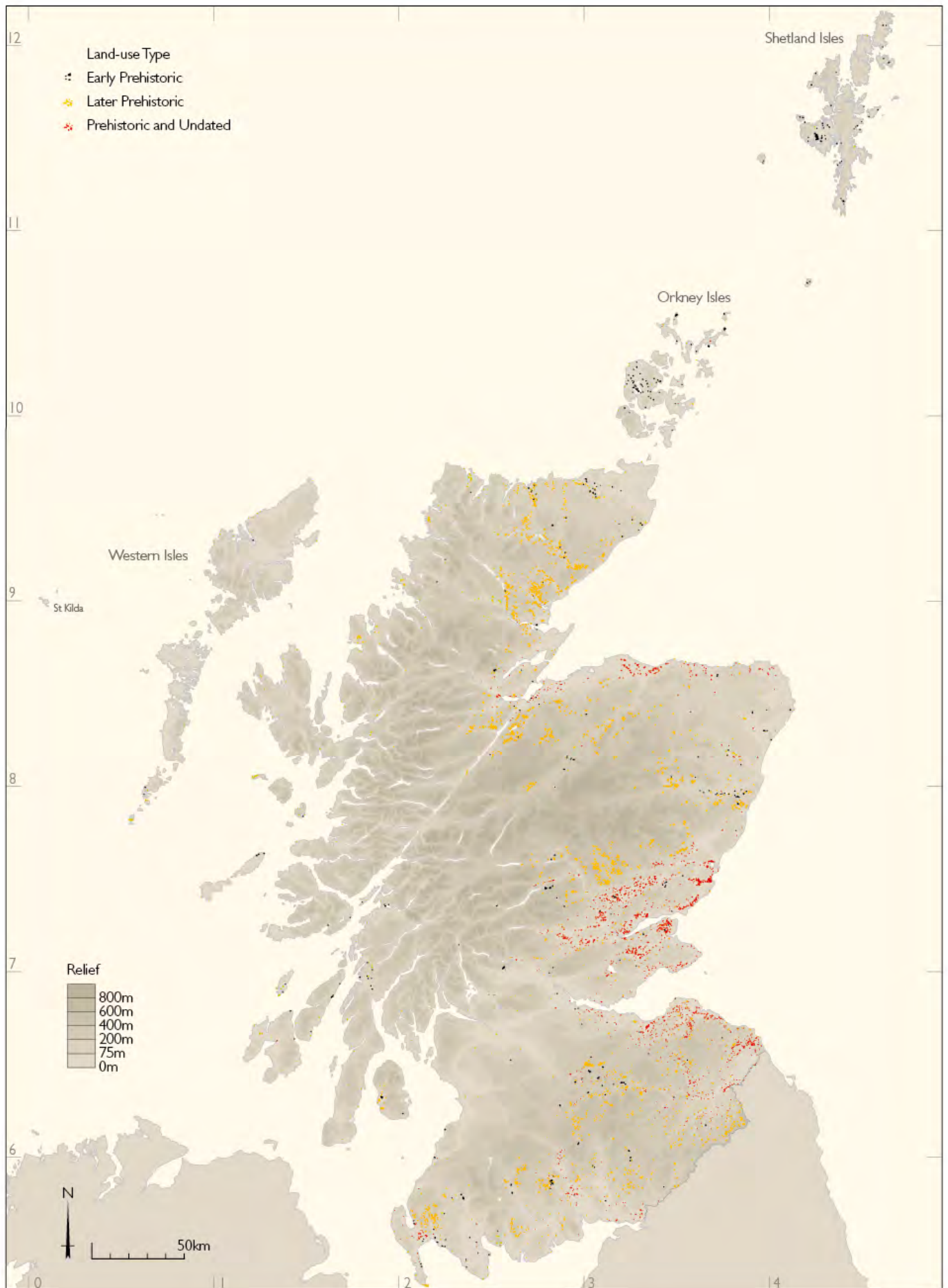
THE DISTRIBUTION OF PAST LAND USE IN THE PRESENT LANDSCAPE

The following maps show where the remains of earlier periods that are extensive enough to have been mapped by the HLA project can be found in the present landscape, including the modern period. Overall, evidence for past land use of prehistoric date covers less than 1 percent of the modern landscape, that for the medieval period 3 percent, with that for selected land-use changes in the modern period 5 percent, bearing in mind that small sites like standing stones are too small to appear. That 5 percent of the modern landscape is occupied by the relict traces of such recent land uses in an indication of the accelerating pace of change in our post-industrial economy, and this does not include moorland converted to forestry (15 percent), or fields that have been swallowed by industry and suburban expansion (1.78 percent).

The Early and Later Prehistoric Period (MAP 1)

Over 3500 years ago Orkney, Caithness, the Western isles and mid-Argyll were major foci for large-scale ceremonial land uses. The sites include large stone circles, some enclosed by ditches as at the Ring of Brodgar in Orkney, areas of stone rows like the Hill o' Many Stanes in the Highlands (Fig 13), the extraordinary standing stones of Callanish (Chapter One, Fig 8) and clusters of large burial cairns as at Kilmartin in Argyll. Other sites appear scattered across Scotland's lower-lying countryside, some, such as cursus monuments, were constructed of earth and timber rather than stone. They are all indicative of a well-used landscape, while other sites, too small to be recorded on this map, fill in many of the apparent gaps.

Contrastingly, surviving foci for extensive evidence of early prehistoric agriculture and settlement are found on Shetland and lower Deeside. The stone structures and field dykes of Scord of Brouster have not been swept away by later farming activity, as is presumably the case elsewhere. In contrast, the timber halls of Deeside are long gone, though the pits that once held their massive upright timbers survive hidden under topsoil and have been revealed by aerial survey during dry summers. Indeed such sites generally only survive as cropmarks. Other evidence of land use from this period is even rarer, but shell midden mounds and flint scatters that are large enough to cover more than a hectare do occur in a few places around the coast, particularly on Oronsay and by the Rivers Forth and Tay. These are the last fragments of Mesolithic coastal settlement, situated along the raised beaches that have been left high and dry by post-glacial sea-level changes (Chapter One, Fig 2).



Map 1 Early Prehistoric, Later Prehistoric and Prehistoric and Undated Areas. GVO06892.



Fig 13 The early prehistoric stone rows at Hill o' Many Stanes, Caithness represent the most extensive of this curious type of site whose purpose is not understood. With 22 rows and about 200 earth-fast stones, it is a baby version of the stone rows at Carnac in Brittany. DP 029679.

In comparison to the early prehistoric period, the density of surviving Later Prehistoric Land-use Types is significant. Settlement and agriculture as well as fortified sites appear across much of mainland Scotland. The forts and duns noted here were all more than a hectare in size, but there are numerous others too small to be recorded through HLA which, if added, would give the map a dense speckling of sites across the country on ridges and hills up to c300m OD. Located on grassy tops and rocky knolls, some of these larger sites are still clearly visible (Fig 3). Others have been flattened by more recent agricultural activity but have been recorded by aerial photography.

Today later prehistoric round houses, field systems, including cord rig cultivation, and clearance cairns are a feature of swathes of rough grazing and hill ground that were suitable for cultivation in prehistory but have long since been turned to pasture due to climatic change and peat growth on poorly drained soils. There are dense concentrations in north-east Perthshire, Donside,⁴ Inverness-shire and Sutherland, recorded through field survey. Further survey work will no doubt reveal additional concentrations of later-prehistoric farming activity across Scotland's upland landscapes.

The Roman Period

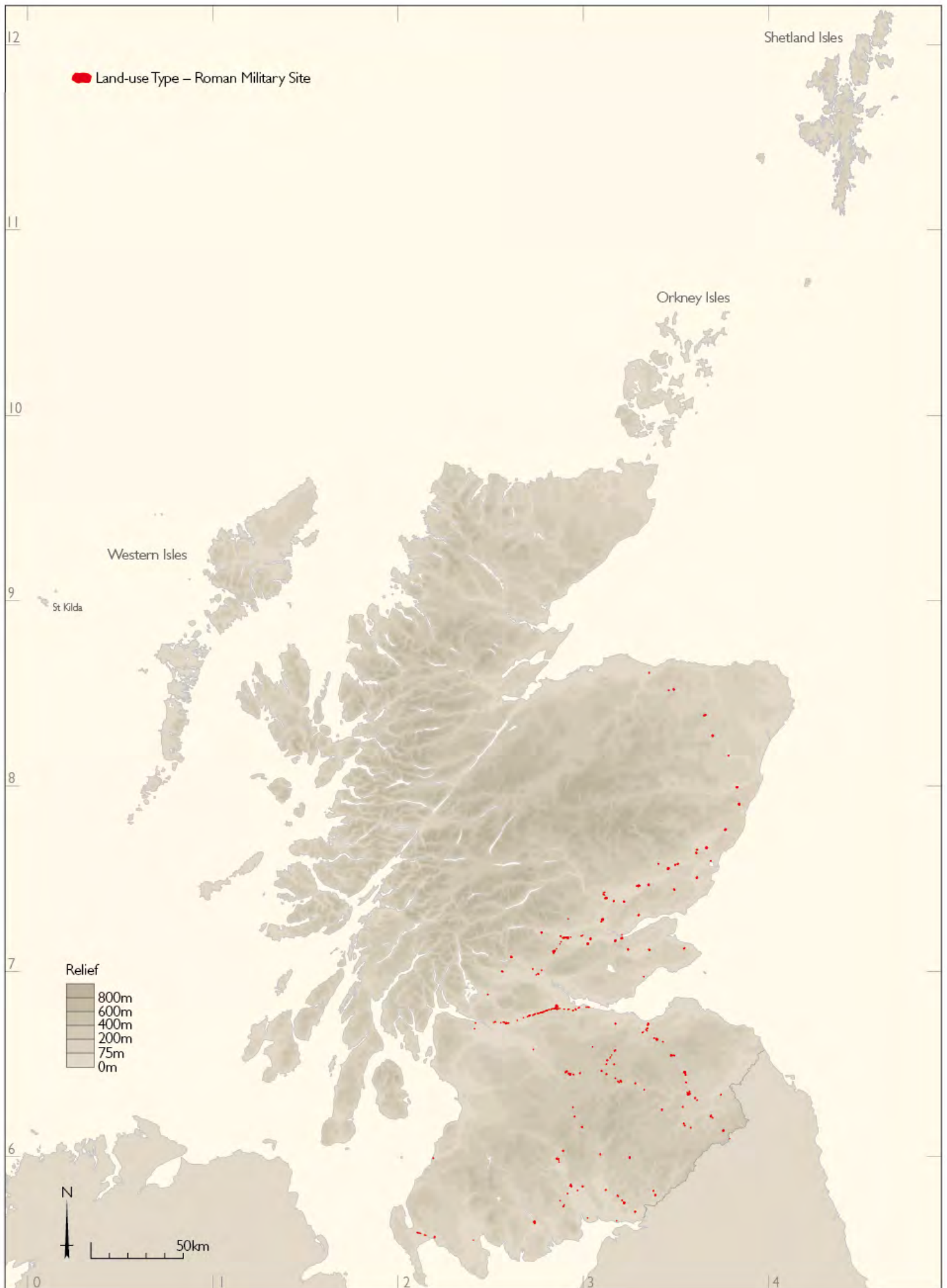
(MAP 2)

The map for the Roman period provides a clear statement of Roman military activity in Scotland. The routes taken by the advancing legions during the various campaigns of the first, second and early-third centuries AD are clear, for the forts and marching camps stand out like beacons along their way (Fig 14). The line between the Firths of Forth and Clyde is that of the Antonine Wall, for a time the most northerly boundary of the Roman Empire. It was built in the early 140s and abandoned little more than 20 years later.

Unlike the other period maps, this one highlights most of the original distribution of Roman interventions in the landscape. Just a few of the features included are upstanding forts or camps. Instead, most have been found during archaeological aerial survey – the playing-card shape of their enclosing ditches appearing bright green in fields of ripening, yellow grain crops or parched pasture, while their network of roads that connected the forts still impinges on the road and field pattern of the modern landscape in the Scottish Borders.



Fig 14 The Roman fort at Ardoch, Perthshire was part of the Gask Ridge defensive line running up to Inchtuthil on the Tay from cAD80. DP229038.



Map 2 Roman Military Site. The pattern of Roman sites picks out the east-west line of the Antonine Wall and the lines of the major roads. GVO06847.

The Early Medieval, Medieval and Post-medieval Periods

(MAP 3)

The survival of the remains of Land-uses that are datable to the early medieval period is very limited in extent and few in number (and are not shown on Map 3 for that reason). Most extensive features have been destroyed by medieval settlement and ridge and furrow cultivation, as well as that of the modern period (c1750 to the present). A few farms have been recorded, but only in particular parts of the country – north-east Perthshire and on the west side of Loch Ness (Chapter One, Map 7). Indeed, it appears that early medieval farming practice differed little from that of the later prehistoric period and it is only the turf longhouses of highland Perthshire that reveal any cultural change (Fig 9). Some hilltop forts as well as Christian sites have also survived. But as a whole, the period is hardly visible through the HLA data alone.

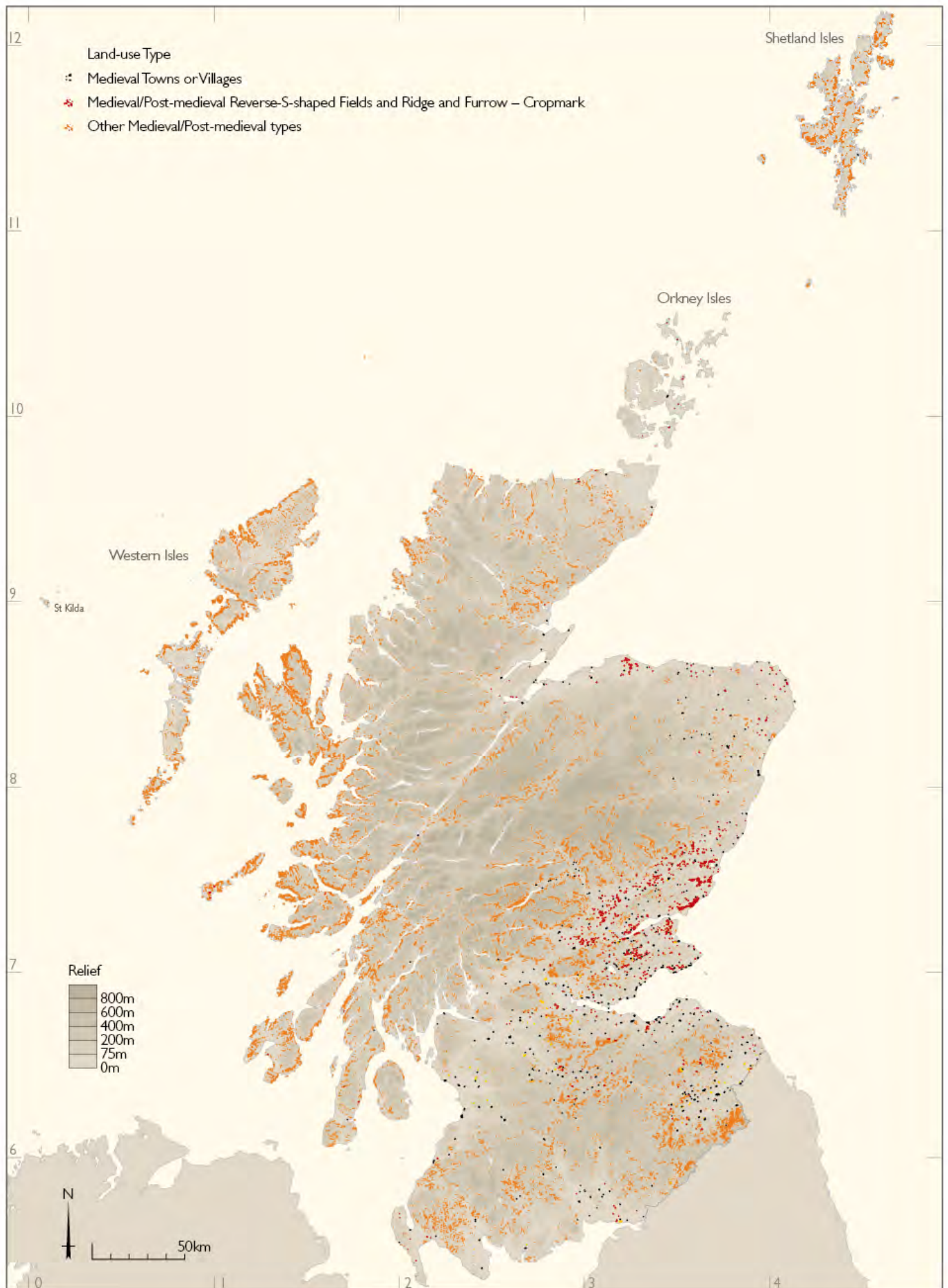
This may seem odd as there are numerous places associated with non-Christian burials, early Christian saints or crosses across the country. However, they are either too small in area to be recorded by the HLA map, or there are no clear boundaries to indicate their extent. It is only the larger Christian sites, like those of Iona, St Andrews (Fig 10) and the Brough of Birsay in Orkney, that feature. Only a few fortified sites, like Dunadd in Argyll and Burghead in Moray (Chapter Three, Fig 32), can be clearly attributed to this period, through documentary records or excavation. Most others have yet to be properly dated.

In most instances the medieval features that have endured are those associated with major royal or religious establishments and urban centres – castles, cathedrals, monasteries and burghs. Almost all are dispersed across the most fertile parts of the country. Many of the castles have survived the passage of time because of their massive masonry construction and overall size. The burghs are still recognizable as the cores of our town centres (Fig 15). But these stone-built representations of power and privilege are not the only medieval elements in the landscape. Associated with regal and baronial progresses around vast estates are the deer forests and their deer-park boundary banks. The forests were managed by or for the Crown as a habitat for deer, to which the Crown had exclusive rights, and where access that was detrimental, such as grazing, farming or cutting down trees, was limited. Those parks that have survived, as on the outskirts of the medieval burghs of Edinburgh, Stirling, the mouths of the Angus Glens (Fig 16) and the fringes of the Southern Uplands, are easily overlooked by an untrained eye. Hunting forests have engendered their own distinctive landscapes

of small enclosed medieval farms, to keep out the deer, still visible in parts of southern Scotland such as Liddesdale (see below). The monasteries, with their zeal for exploiting the goods of the land, not only took in land from the forest but also from the bog – the canalised Pow at Inchaffray Abbey, Perthshire, for example – and the sea, with the draining of salt marshland like the Carse of Gowrie along the Tay, for example. However, it has rarely been possible to map such evidence along the Forth or other estuaries (Chapter Two, Fig 89).

There is a general lack of evidence for the everyday that can be exclusively dated to the medieval period in Scotland. Without accurate dates for the development of open fields of ridge and furrow, or indeed of deserted settlements, they have to be assigned to both the medieval and post-medieval periods – a sign of the cultural continuity between these two periods. Surviving villages of the 12th to the 17th century, though relatively few, are spread across the Lowlands from the Borders to Aberdeenshire. Evidence for any traces of medieval buildings hidden in modern farm buildings is not a common occurrence. However, at least one area of the country – Liddesdale close to the Scottish border – does hold evidence of farming from the medieval period because of its origin as intakes within a hunting forest, as described below.

Today, elements of medieval/post-medieval land use, dating variously from the 12th to the early 19th centuries, are a major feature of many parts of Scotland. However, although there are numerous examples, from a landscape perspective their characteristics are usually quite subtle. Small, very ruinous stone and turf dwellings are often associated with spade-dug lazy beds in the north-west, or reverse-S-shaped ridges created by ploughing in the upland fringe of eastern Scotland (Chapter One, Figs 40–42). Nowadays the latter are generally only seen during aerial reconnaissance across arable farmland where they have been completely flattened by modern agriculture. On the higher ground, at a distance from the areas of former arable, are the summer shielings – bright green patches in an otherwise moorland environment. Shieling sites stretch along the western seaboard from the Western Isles to the Mull of Kintyre and Arran. They cover highland glens and the upper reaches of lowland valleys, from Sutherland to Fife, the Borders, Galloway and south Ayrshire (Chapter One, Map 11). Their density brings the blank areas of the map into focus, the parts of Scotland where agricultural improvements, industrialisation and urbanisation have almost cleared the countryside of its once more widespread evidence for prehistoric and pre-modern settlement.



Map 3 Medieval and Medieval/Post-medieval Period Types, highlighting Medieval Villages and Towns and lowland evidence for medieval fields - Reverse-S-shaped Fields and Rig - Cropmarks. GVO06893.



Fig 15 Whithorn has the quintessential features of a medieval burgh: a broadened marketplace, narrow properties and houses fronting the street. Modern housing is extending the town but the medieval monastery ruin is undisturbed beside the white-washed walls of the parish church. SC973212.



Fig 16 Buzzart Dikes deer park occupies the three ridges in the foreground, enclosed by a bank and internal ditch. The bank was surmounted by a wooden paling, evidence for which was revealed through excavations. DP056572.

*Medieval Relics in the Rural Landscape:
Liddesdale, Scottish Borders by Piers Dixon*

The extraordinary thing about Liddesdale is the quality of the preservation of features from the medieval period. This is closely related to the subsequent land use in the valley. Following the Union of the Crowns in 1603 and the acquisition of the lordship by the Scotts of Buccleuch, the pattern of

farming, already biased to pastoral farming, became focused on sheep. The clearance by the authorities of many of the erstwhile inhabitants from the border with England to preserve the peace, and the amalgamation of farms by the Buccleuch estate, led to abandonment and a reduction in the population. Many of the deserted farms may still be traced from grass-covered turf walls that were employed in the construction of the buildings (Chapter Three, Fig 28).



Fig 17 Kirk Hill, Liddesdale, Scottish Borders. The curving medieval assart dyke shows clearly beyond the Iron Age fort. Note the reverse-S-shaped fields. SC393110.

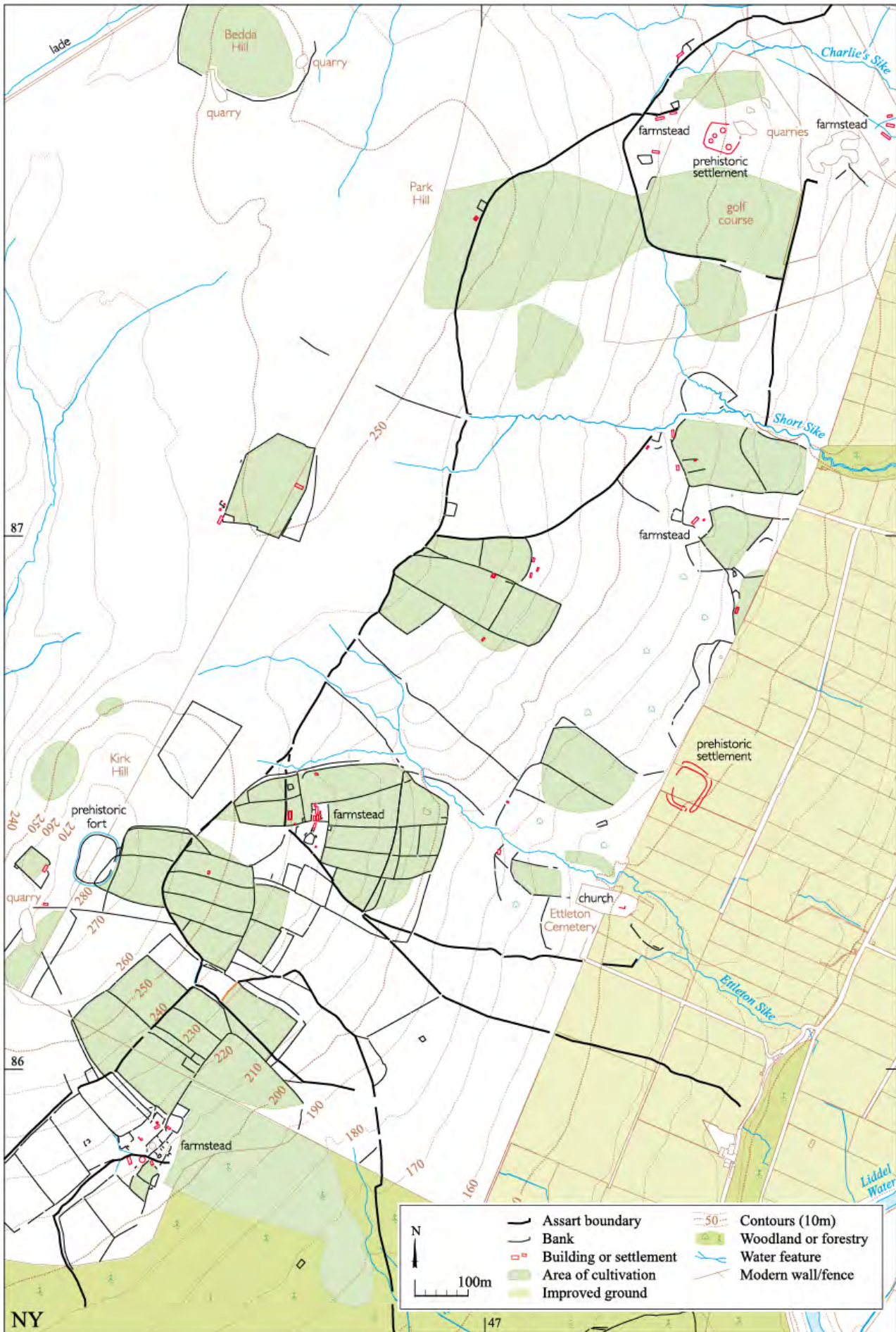


Fig 18 Map of the assart intakes of land at Kirk Hill, Liddesdale, Scottish Borders. GV005084.

From the 17th century, sheep farming came to dominate the valley, with the creation of sheep hirsels by the Buccleuch estate based on selected farms, making widespread use of the extensive hill grazing, replacing deer hunting and summer grazing by sheep ranching, while woodland clearance for charcoal production was also practised. Early abandonment of settlement and the accompanying conversion to pasture has preserved the remains of the medieval settlements and the characteristic medieval intakes or assarts (Figs 17 & 18), as well as the shallow rectangular pits that scar areas of rough grazing as a result of turf cutting, often visible as differences in the vegetation. Indeed, many sites have been untouched by later agricultural improvements, except where afforestation has occurred in the 20th century.

Liddesdale was granted by the Kings of Scotland to the de Soulis family in the 12th century. With it went possession of the hunting forest, a royal prerogative. Liddel Castle, the earthwork of which may still be seen beside the Liddel Water, and the neighbouring settlement of Castleton, now a modern farm, was the primary focus of this estate, but during the 13th century a new centre developed at what is called Hermitage, on the Hermitage Water, a tributary of

the Liddel. Here there is a moated manor of two ditched enclosures, one containing a chapel with lancet windows, possibly preserving in the name the origin of the site as a retreat, although it is more likely this was in origin a hunting lodge of the de Soulis family (Fig 19). The neighbouring castle began life as a timber castle based on a large earthwork, part of which is visible to the west of the castle, possibly in the 1240s when relations with England were shaky (Fig 20). Hermitage lay at the north-west extremity of the dale adjacent to lands that were unsettled. In 1376, from which year a rental of the estate is preserved from its days as a Douglas possession, the lands to the north-west of the castle were only valued for their grazing, while those to the south and east were listed as forest steads or farms that were permitted within the hunting forest. The castle of Hermitage, like Liddel Castle, possessed a park. The traces of this may be seen to the north of the castle, in varying states of decay and demolition, running in a great arc from the Hermitage Water in the east around to the north-west. The best parts of the park pale (boundary) are stone-built and stand about 1m in height, but in other parts it appears to have been earthen, presumably topped by a wooden paling, with a ditch on the inside to keep the deer in.⁵

Fig 19 The moated enclosures at Hermitage, Scottish Borders are likely to be the predecessor of the nearby castle at Hermitage. SC1260663.





Fig 20 Hermitage Castle showing the earthwork of the early castle in front of the stone keep; the deep ditch cut to manage drainage on the left and the earthworks of the deer trap in the foreground. SC759252.

Land-use Changes of the Modern Period

(MAP 4)

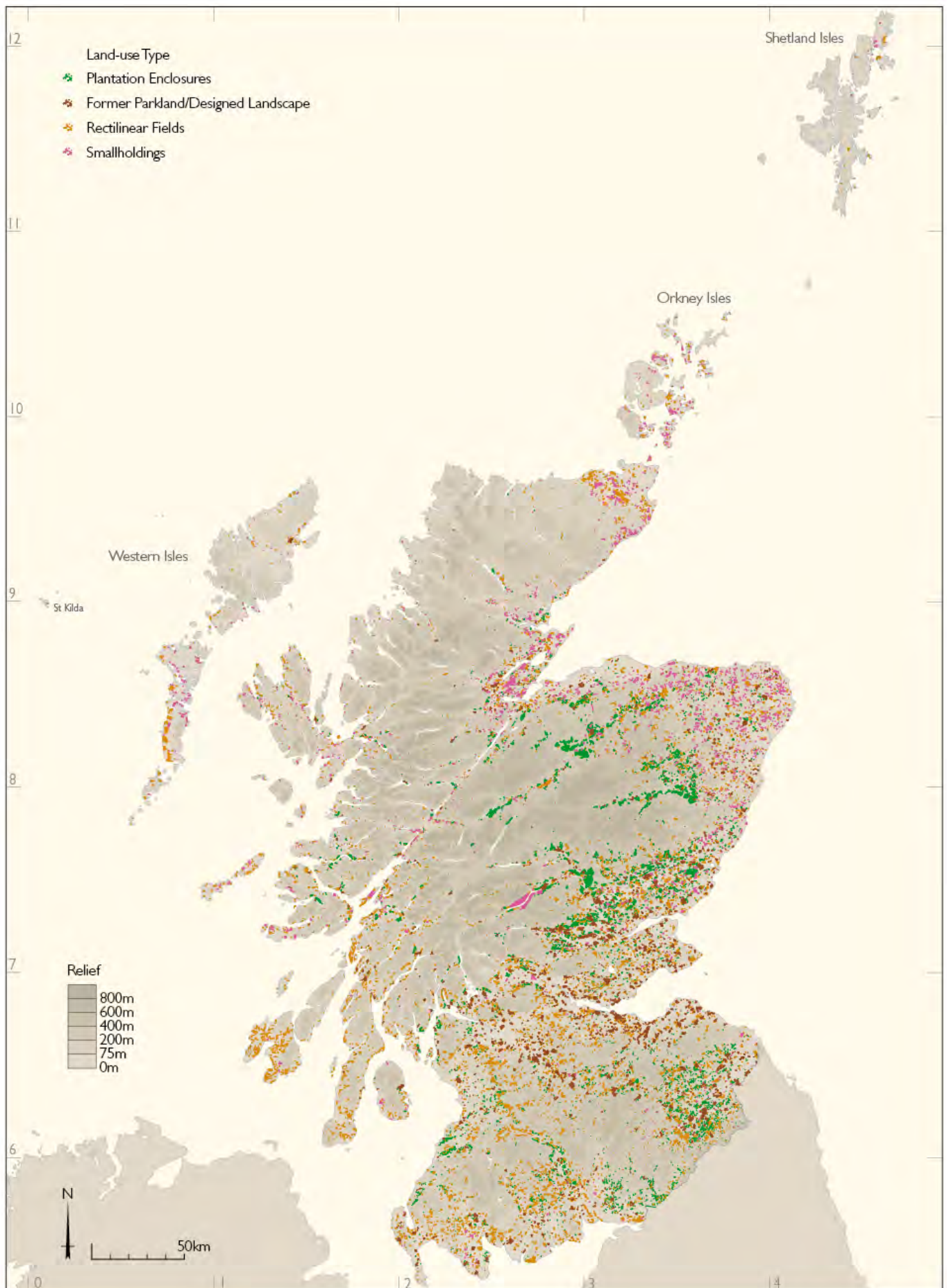
Change in the modern landscape has so far been discussed from the point of view of the traces of past landscapes (Chapter One) or new developments such as the work of the Forestry Commission in planting 15 percent of Scotland with conifers during the 20th century, and the expansion of urban centres from the mid-19th century onwards (Chapter Two, Section Three). However, the data also contains evidence of a large part of Scotland, c5 percent, in which land use has been changed since the 18th and 19th centuries through decay and abandonment of activities that were themselves in many cases part of the new model landscape of the improvements (Chapter Two, Sections One & Two). Indeed, the last 200 years have seen an acceleration of changes in land use and the economy, especially to uses that embodied the agricultural and industrial revolutions of the 18th and 19th centuries.

This includes a large swathe of land planted with trees which might be either deciduous or conifer (often Scots Pine) that were part of the creation of the new farming landscape, providing shelter, timber and cover for fowl. They could be planted on the steep sides of river valleys, hilltops or whole expanses of upland, the focus of which was along the upland fringe from Moray to the Southern Uplands along the eastern seaboard of Scotland, but also within the farmland of the South and East Lowlands. The trees in many instances were cut or harvested as they grew to maturity (Fig 4). In some instances replanting occurred in the 20th century by the Forestry Commission, but elsewhere evidence can sometimes be picked out on open moorland by the stumps of trees and the curvilinear earthen dykes that surrounded them. Much of this woodland was felled for its timber during the First World War.

A surprisingly high proportion of new improved fields were abandoned in almost every part of lowland Scotland, but particularly in the less profitable

arable of areas such as Galloway, Ayrshire, North Lanarkshire, Argyll, Caithness and the Western Isles, where enthusiastic improvement came to grief because of the economic limits of agriculture in the mid-19th century as cheap imports of grain from North America began to arrive in the 1870s (Fig 21). The impact of this on the rural landscape was croft abandonment and emigration on a large scale from the west coast and of smallholdings in the north-east, even as late as the early 20th century. The slump between the two World Wars and the lack of investment in agriculture led to a steady drift from the country to the town and the desertion of marginal land. Although the Crofting Act of 1886 led to a conservation of the existing pattern of crofts in the seven crofting counties, many crofters were forced to work away from home, and traditional activities like peat cutting declined in favour of cleaner and more convenient energy sources. A glance at the map of traditional peat cuttings (Chapter Two, Map 14) will highlight the abandoned peat cuttings that occupy large parts of the Western Isles, Orkney, the Inner Hebrides and northern Scotland (Chapter Two, Fig 46). The main phase of loss of peat banks runs hand in hand with the abandonment of crofts in the 19th century and the continued decline of the population of these areas in the 20th century, in addition to the switch away from peat fires.

The other side of the rural change that may be observed is the complete collapse of the coal industry in the late 20th century. Initially mines were closed from the 1920s onwards due to the ever more expensive engineering of deep mines making the industry uneconomic, culminating in the closures of the 1980s and 1990s (Fig 22 and Chapter Two, Map 33). Finally, the opencast mines that supplied the power stations were closed due to green-energy shifts in the 21st century. Alongside the demise of the coal industry goes the retreat from heavy industry in the 1980s, whether steel, car production or shipbuilding. The Central Belt of Scotland, including Ayrshire, is still littered with the traces of its past industry such as Wilsontown Ironworks (Chapter Two, Fig 8).



Map 4 Major relict Land-uses of the modern period. Note the eastern upland edge distribution of former managed woodland, the south-west density of former rectilinear fields and former smallholdings in the north-east. GVO06894.



Fig 21 Although Grasdale, Islay, Argyll is a settlement of pre-improvement origin, its sub-rectangular fields are covered with improvement period ridge and furrow indicating agricultural improvement that in this case came to nothing in the second half of the 19th century. DP112382.



Fig 22 Braehead Colliery, Pit No 2, West Lothian was abandoned by 1939. DP051617.

These landscape changes are part of the contribution of past land use to regional landscape character, especially the influence of industry and mining on the Central Belt, but also the peat banks of the north and west. Some of the other relict Land-uses are more subtle. The woodland planting that accompanied the agricultural improvements has been replaced by Forestry Commission plantings (whether by the state itself or through grant aid), which unlike the earlier plantings have been more heavily targeted at rough grazing.

It tends to be assumed that the agricultural revolution was a continuing success, with modern scientific farming and mechanisation in the 20th century making it more efficient. However, the story since the late 19th century has been one of decline, which only the demands of two World Wars have alleviated. After the Second World War, agriculture has had to be supported by government and European grants, only for the workforce to be decimated by that very mechanisation, with a concomitant depopulation of the countryside. The many deserted farm steadings, croft houses and cottages on the rural fringes are a testament to this (eg Tipperchindy Farm, Aberdeenshire).⁶ Some have even been converted to forestry in the 20th century at places like Clashindarroch Forest, or Bauds of Cullen, Aberdeenshire (Fig 25).

Section Three:

MANAGING CHANGE

Understanding the Past in the Landscape

The HLA project has provided a digital map of land use across Scotland that identifies past elements in the present landscape, showing how past use has influenced the present and indicating where relics of the past survive. Some features of the landscape that have been picked out, such as designed landscapes, are already recognised as important historically, and the map has simply expanded the record of them. However, many other types, such as field patterns, are not traditionally considered to be of archaeological or historic interest, but can now be understood for their historical value and for the contribution they make to the character of the landscape, as in Galloway (Chapter Three, Figs 42 & 43). Furthermore, in covering the whole landscape rather than parts of it, the HLA approach has given a new spatial dimension to our understanding of the historic landscape and so to our management of it.

Our perception of the historic landscape has been enlarged and enhanced by the HLA project, and the parameters of what is of historical importance have been extended through engaging with a wider range of evidence. Our knowledge of the extent to which evidence of the past survives in the landscape has been improved, as well as how this contributes to modern landscape character. This new information presents a challenge for heritage managers to extend the protection and management of the historical elements of the landscape beyond traditional spheres of interest (eg King's Park, Stirling recently transferred by the Crown Estate to Stirling Council). It also offers an opportunity to ensure that wider land-management schemes are better informed about the historical dimension.

The range of Historic Land-use Types in the HLA data reflects much physical evidence of past human activity that generally lies outside the sphere of traditional heritage management. By way of example, reverse-S-shaped fields are a remnant of past agricultural practices that have been incorporated

into the later field or street pattern; they are rare from a Scottish perspective as they do not have a widespread distribution, but are distinctive from a local perspective as they contribute to landscape character (Chapter One, Fig 6). They represent a type of evidence that current land-management planning practices have rarely, to date, adequately recognised or given sufficient weight to within decision-making processes. Yet failure to recognise and accommodate such evidence in our management systems means that this pattern inherited from the past may not survive into the future, such as when field boundaries are removed or straightened. Understanding the significance of such features could allow, where appropriate, the retention of these inherited patterns or their incorporation within subsequent developments. This would allow further continuity of form from the past and present into the future, and help maintain the strong historic character of the Scottish landscape as well as its distinctive regional diversity. The challenge lies in deciding which Historic Land-use elements it will be important to retain and how to achieve their sustainable management for the future. Improving our awareness of the way in which modern land use and landscape has been influenced by and bears evidence of the past will therefore help inform landscape designation and management.

However, this new information can help us to recognise the context of individual designated or recognised assets, whether gardens, buildings or monuments. For example, it has expanded the national data-set for designed landscapes, and can be used to inform the Inventory of Gardens and Designed Landscapes by refining the extent of landscapes already in the Inventory and by identifying new landscapes to consider for inclusion. Similarly, HLA data can help refine surveys of historic buildings through providing information about the origin or distinctiveness of settlements and the landscape context, as well as identifying continuity from past to present forms such as medieval towns and villages (Map 3). It can also aid understanding and management by giving an overview of some archaeological distributions, or by defining the extent of relict archaeological landscapes.

Assessing Impact and Monitoring Change

The HLA data provides a national spatial framework for the historical elements of the landscape, against which site-based data can be viewed, and which can be assessed alongside other spatial data-sets to embed the historical dimension more easily into wider management strategies, both national and local. For example, it can assist in heritage management by helping to assess the impact of climate change on historic evidence, such as flooding or coastal erosion (Fig 23).

As indicated in Chapter One and by the maps above, the data gives an accessible summary of the impact of modern land use on earlier evidence. Looking at the modern Land-use Types in which most features from the past survive also indicates where further land-use change is likely to have the most adverse impact on the archaeological resource, while comparison between the HLA data with previous, or future, surveys can help assess the rate of loss of information. As most evidence of the past survives in land use on the margins of intensive agriculture, it is clear that there is potential for further loss of this evidence if it is not taken into account in future land-management strategies.



Fig 23 SEPA High-risk river-flood data indicates that Meiklewood House and its immediate policy woodland in a bend in the River Forth are not liable to flood, but much of the farmland along the river banks is. DP264767.

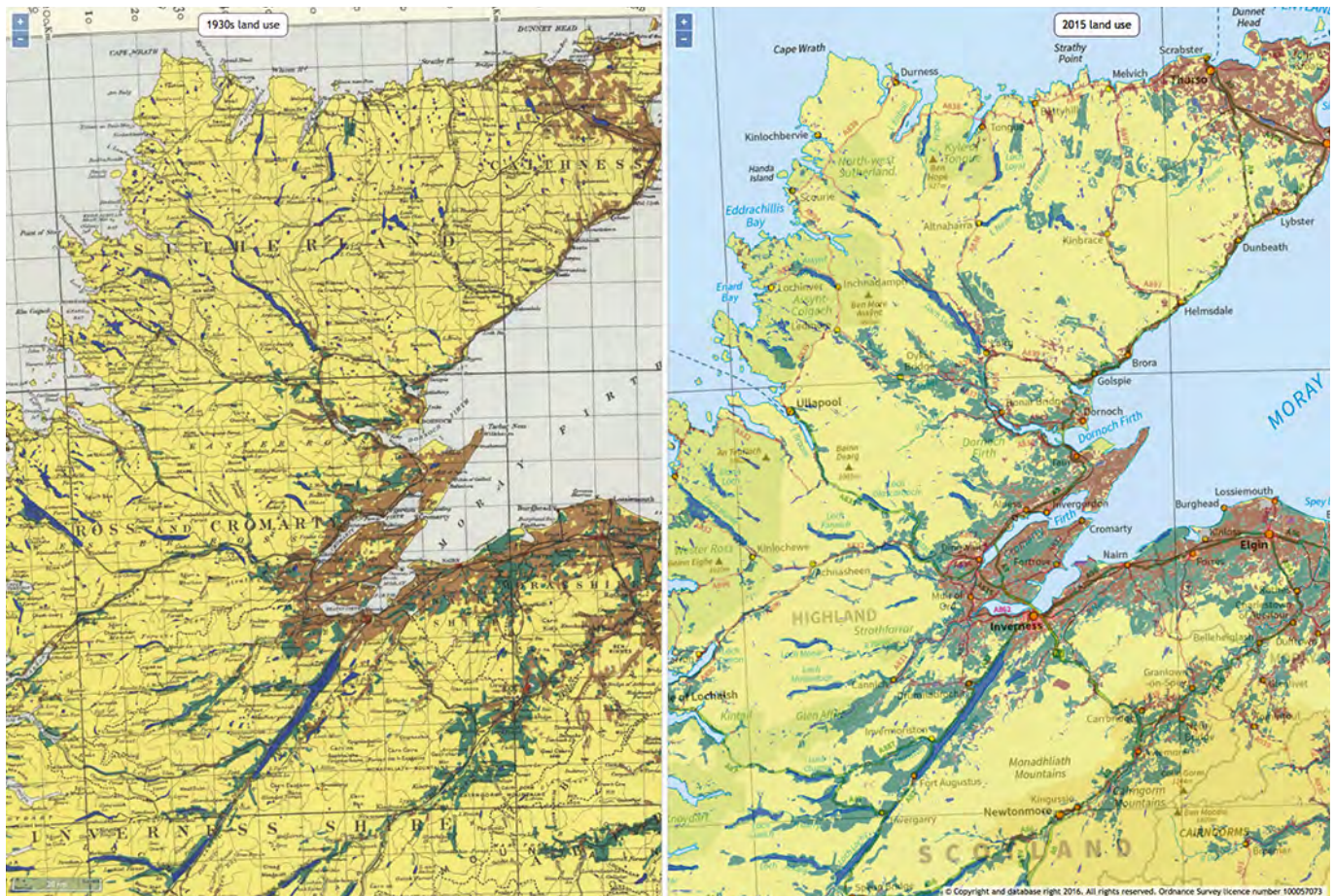


Fig 24 The 1930s land-use map compared with HLA data, showing the expansion of the urban area of Inverness (red) and tree cover (green). Reproduced with the permission of the National Library of Scotland.⁷

Although the national picture of Historic Land-use data has been collected over a relatively short period of time (1996–2015) it has also been modified and updated during the course of the project to capture significant recent land-use changes such as the extensive introduction of wind farms. Consequently the completed data now provides a benchmark against which future change can be measured and assessed, through using it to record and monitor changes to the landscape and land-use cover. Monitoring can be carried out periodically on a sampling basis (for an area or Land-use Type, for example) or through a comprehensive review of the data-set in the future. As it is a digital data-set, it can also be used alongside other spatial data-sets to allow Historic Land-use to be built into national landscape monitoring programmes. Indeed the process of measuring land-use change and its effect on the relict landscape on a biennial basis has already been

initiated using specialist software to pick up spatial changes in other data-sets relating to woodland cover, wind farms and built-up areas.

HLA now offers land managers an additional source of data for monitoring land-use change in the recent past and into the future. The potential for this has been demonstrated through the National Map Library's comparison of historic maps with HLA coverage, showing the nature, extent and location of change since the 1930s. This highlights that the value of HLA data is not restricted to assessment of the ancient land use but is relevant to any study of land-use change, however recent (Fig 24). This illustration also shows that, while the greatest amount of information may be found in the HLA digital data-set, the information available through the website, HLAmap, is both highly useful and easily accessible.⁸

Understanding Place

As shown in previous chapters, HLA data helps with understanding the history of a place, by charting how its landscape and land use has developed and changed, whether organically through gradual change, or through drastic alteration by deliberate human intervention. It shows national and local patterns in land use and builds a picture of time-depth by indicating where landscape-scale evidence for earlier periods survives or has influenced later developments.

Extensive survivals from the past have been mapped, such as the later prehistoric settlements of the eastern Highlands or the rigs of pre-improvement agriculture in the same area (Fig 9)⁹. HLA has shown that some well-known regionally distinct types of land use, such as crofts, are actually found outside their traditional areas, though in a different form, such as the smallholdings of the north-east (Fig 24). It has also demonstrated how similar uses have varied over time; for instance, the locations of many early prehistoric funerary and ritual monuments have distinctly different locations to Christian sites in Orkney.

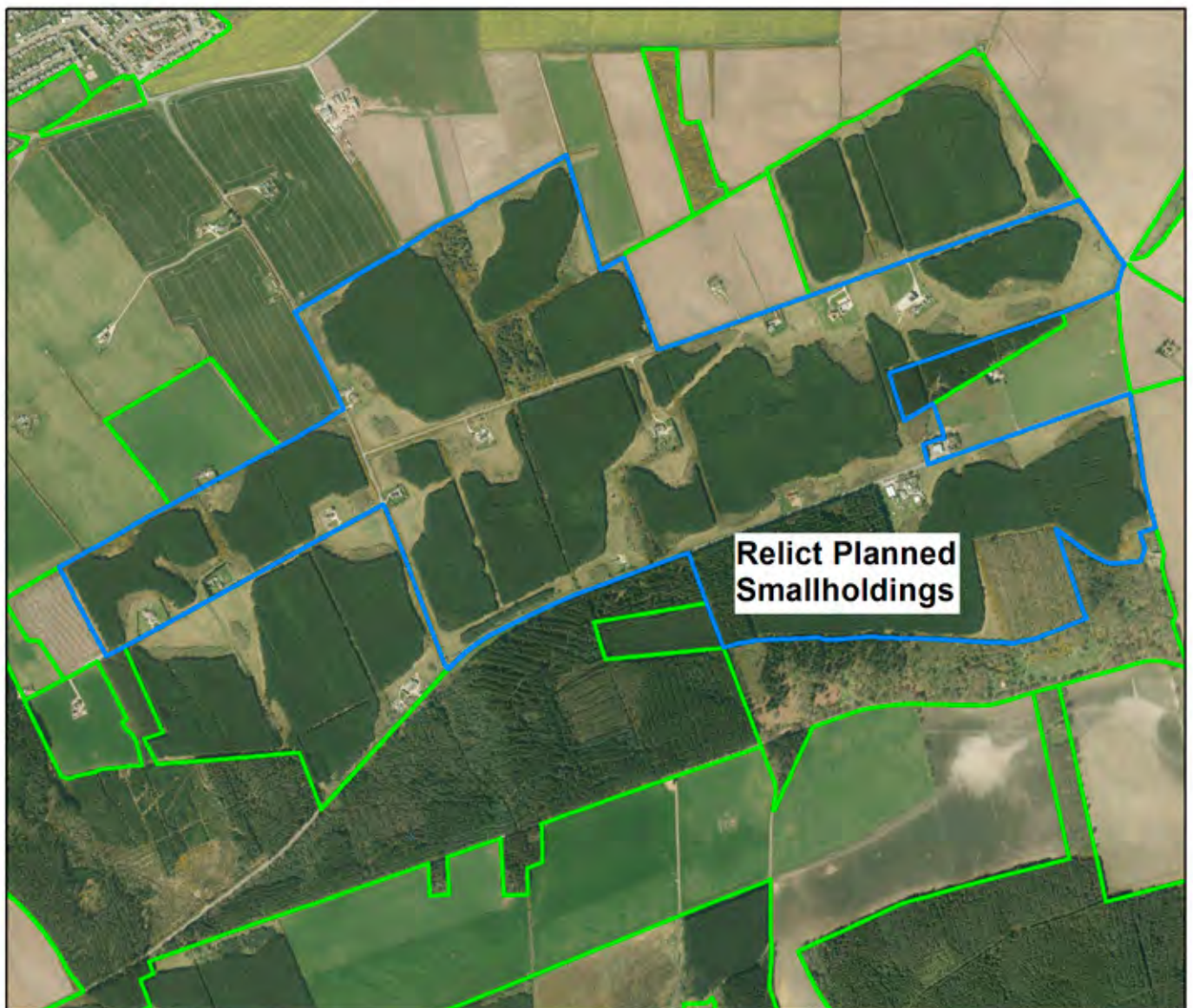


Fig 25 Planned Smallholdings at Bauds of Cullen, Moray which have been planted with trees. DP247972.



Fig 26 The Antonine Wall at Seabegs Wood with the military way to the left and the Forth-Clyde Canal to the right and with the B816 running alongside, all demonstrating the longevity and persistence of this route across the isthmus of central Scotland. SC1530248.

Similarly, HLA mapping depicts the extent of the differing style and scale of farming practices through time that may still be seen, from prehistoric stone clearance heaps and narrow cord rig, through medieval broad ridge and furrow, to the extensive rectilinear fields of the post-improvement period of today. Although details vary through time or from region to region, the HLA map also demonstrates continuity, with the land settled and used over time for broadly the same purposes – shelter, agriculture (Chapter One, Fig 20), extraction, transport (Fig 26), spiritual and leisure activities. Even though the intensity of these uses has increased over time, our map has indicated that traces of previous use have survived more widely than expected. It is also evident from the HLA map that natural aspects of land cover, such as woodland, forestry or peatlands, have been managed and modified by people over time (plantation banks in upland areas, or peat stances on Mingulay, Western Isles). Taking such evidence together, the map offers a readily accessible overview of the historic development of places and provides evidence to identify, and so understand and manage, key historical characteristics for the future.

As a nationwide map of different types and periods of land use, HLA data allows regional, area and period variations to be assessed and compared, on any basis and for many audiences, from local communities to national parks. The analysis presented in this volume offers an insight into what can be achieved and gives a broad indication of national trends and regional variation. As we have seen, this information can aid heritage management by demonstrating what is commonplace, or rare, nationally and regionally, and what is particularly characteristic of, or significant in, any given area. Some historic elements, like abandoned crofting or improvement

landscapes and designed landscapes, provide visual evidence of historic influence or design that makes a strong contribution to the landscape of an area and influences its scenic qualities. Consequently, HLA data is now a key source of information for identifying important landscape components to feed into management strategies for a particular landscape area, and it combines well with other data-sets such as Landscape Character Assessments.¹⁰

Understanding which patterns from the past can still be seen in the modern landscape or townscape allows these to be reflected in future change (Fig 27). This can be used to help maintain the survival of significant elements into the future, and the sustainable management of the old buildings and landscapes. HLA data has already been used in this way: for example, in Aberdeenshire the data-set was analysed to identify and protect the regional suite of designed landscapes, and other sub-sets of the data have been used to inform planning decisions and protect locally important elements of Historic Land-use Types. The data has also been used to inform planning in Stirling where key Historic Land-use Types have been maintained within modern development to ensure some continuity of the historic fabric of the area. In forestry, it has been used to assist in woodland planning by identifying key areas for protection and other areas where the footprint of the past could be modified and incorporated in new designs. HLA data thus provides a new resource to help inform the future planning and design of Scotland's places.¹¹ Its contribution to heritage management is likely to increase as further use, analysis and research highlights its value and potential applications, but as a means of understanding landscape change it promises to have other wide-ranging applications well beyond the historic environment that it depicts.



Fig 27 Scott's View from the air of the landscape around the Eildon Hills in the Scottish Borders, with HLA polygons overlaid, highlighting its historical development. With this data, land-use change can be understood and managed with the knowledge of its origins. GV006562.

ENDNOTES

- 1 <https://canmore.org.uk/collection/1295791> [accessed 2018].
- 2 Roberts, B. K. and Wrathmell, S., 2002, *Region and Place: A Study of English Rural Settlement*. London: English Heritage, pp. 147-172.
- 3 Simpson, A. T. and Stevenson, S., 1981, *Historic St Andrews: The Archaeological Implications of Development, Scottish Burgh Survey Series*. University of Glasgow: Glasgow;
- 4 RCAHMS, 2007, *In the Shadow of Bennachie: A Field Archaeology of Donside, Aberdeenshire*, Fig 6.34. Distribution of hut-circles and small cairns in North-east Scotland. Society of Antiquaries Monograph: Edinburgh.
- 5 Dixon, P., 1997, 'Settlement in the Hunting Forests of Southern Scotland, in the Medieval and Later Periods', in De Boe, G. and Verhaeghe, F. (eds), *Rural Settlement in Medieval Europe, Papers of the 'Medieval Europe Brugge 1997' Conference*, Vol. 6. Medieval Europe Brugge: Zellick, pp. 345-354.
- 6 <https://canmore.org.uk/site/108178/tibberchindy> [accessed 2018].
- 7 <https://maps.nls.uk/projects/landuse/#zoom=8&lat=56.7000&lon=-4.0000> [accessed February 2018].
- 8 Select Land Utilisation maps, <http://hmap.org.uk/> [accessed June 2018].
- 9 RCAHMS, 1990, *North-east Perth: An Archaeological Landscape*. HMSO: Edinburgh.
- 10 Natural England, 2002, *Understanding Historic Landscape Character Topic paper 5*, <http://publications.naturalengland.org.uk/publication/4670824246149120> [accessed June 2018].
- 11 <http://hmap.org.uk/case-studies> [accessed 2016].



HISTORIC
ENVIRONMENT
SCOTLAND

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Historic Land-use Assessment of Scotland, 1996–2015

Introduction

Chapter One

Past Landscapes

Chapter Two

The Modern Landscape, c1750–2015,
Part One

The Modern Landscape, c1750–2015,
Part Two

Chapter Three

Regional Character

Chapter Four

Understanding the Historic Landscape

The *Historic Land-use Assessment of Scotland 1996–2015* is a summary of land-use change from the last Ice Age to the present. In this report the character and history of each type of land use – archaeological or not – is described, supported with distribution maps and graphics. The regional character of the landscape is also analysed, along with the degree to which the past survives in the present. Case studies highlight the medieval origins of the urban landscape of St Andrews and the rural landscape of Liddesdale in the Scottish Borders. Finally the management of the historical landscape is discussed.

Further information, including access to the Historic Land-use Assessment map, may be found on the HLAmap website at <https://hلامap.org.uk/>.

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Left: The linear arrangement of Neolithic and Bronze Age burial cairns at Kilmartin Glen, Argyll and Bute still make a mark on the modern fields. DPO17919.