EDITED BY

T.M. DEVINE

JENNY WORMALD

The Oxford Handbook *of* MODERN SCOTTISH HISTORY

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T. M. DEVINE

and

JENNY WORMALD

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INTRODUCTION

The Study of Modern Scottish History

T. M. DEVINE AND JENNY WORMALD

1

The commissioning of *The Handbook of Modern Scottish History* as one of the first in the History series to be published by Oxford University Press confirms the current academic health of the subject. In the past few decades, there has been an outpouring of cutting-edge research; undergraduate classes in Scottish History attract large numbers of students; and public interest in the nation's past has never been higher, as confirmed by the impact of television and radio programmes, as well as features that regularly appear in the print media. In the words of the Historiographer Royal in Scotland, published in 2007: 'Scottish history is pretty vigorous; a structure that was rickety and thinly painted a generation ago is reinforced and much more thickly painted now. It is, as a subject, more deeply understood.'[1] Nevertheless, as indicated below, some weaknesses endure.

T. C. Smout's positive assessment would have been impossible in the later nineteenth century and for several decades thereafter. In 1980 Marinell Ash published her important book, *The Strange Death of Scottish History*. She argued that by late Victorian times 'a general interest in Scottish history had ceased to be the mark of broadly educated Scotsmen and had come instead to be seen as the mark of a narrow parochialism most Scots wished to abandon'. Instead, that period, she suggested, saw Scots embrace 'the emotional trappings of the Scottish past—its symbols are bonnie Scotland of the bens and glens and misty sheiling, the Jacobites, Mary, Queen of Scots, tartan mania and the raising of historical statuary'.[2] Twenty years before Ash's critique, George Elder Davie, in his even more

[1] T. C. Smout, 'Scottish History in the Universities since the 1950s', *History Scotland*, vol. 7 (September/October 2007), 49.

[2] Marinell Ash, *The Strange Death of Scottish History* (Edinburgh, 1980), 10.

influential polemic, *The Democratic Intellect: Scotland and her Universities in the Nineteenth Century* (1961), condemned the Scots for 'a failure of intellectual nerve', and made the point that at the very time when nations throughout Europe were becoming increasingly 'history minded', the Scottish people were losing a sense of their past as the universities were 'emphatically resolved . . . no longer to be prisoners of their own history'.

Equally, Bruce Lenman, in his 1973 survey of the teaching of Scottish History in the nation's universities, could conclude that the subject 'was ignored by the Scottish education system by 1850', while conceding that there had been some bright spots amid the scholarly darkness in the publications of Thomas McCrie, the biographer of John Knox (1811) and Andrew Melville (1819), Patrick Fraser Tytler, whose nine-volume *History of Scotland* (1828–43) covered the period from Alexander III to the Union of the Crowns, and Cosmo Innes, the distinguished scholar of Scottish medieval institutions.[3] These works, however, were devoted to the history of the nation before the Union of 1707. There seemed precious little interest in the more modern period.

Indeed, and more generally, with the exception of Alexander Fraser Tytler, Professor of Universal History and Roman Antiquities in Edinburgh University from 1780 until 1802, and Cosmo Innes, himself Professor of Constitutional Law and History, there had hardly been any teaching of Scottish History in Scottish universities from the time the first History chairs were established in the later seventeenth and early eighteenth centuries. Innes assumed his professorship in 1846 after it had been in abeyance for several years. In the hope of reviving interest in Scottish history he first charged no class fees and the numbers who attended grew considerably. As soon as fees were imposed, however, the audience fell to a small handful.[4]

This virtual irrelevance of Scottish History in the universities in the Victorian era poses a fascinating puzzle. After all, in the Age of Enlightenment the Scots had a European-wide reputation as pioneering historical thinkers and writers: 'Hume and Robertson stood alongside Gibbon in a triumvirate which had transformed British and, indeed, European historiography.'[5] Adam Smith was also arguably the world's first-ever economic historian. The Scots *literati* made signal contributions to the methodology of historical study through their elaboration of the stadial theory of development describing how human society moved from the stage of hunter-gatherers to that of farmers and cultivators, and thence to the age of commerce. This was a powerful critique of the dominance of narrative history with its continuum of events, uninterrupted by any structural discontinuities. In this way the Scots later influenced some future intellectual developments from historical sociology to Marxist theory.[6]

[3] Bruce P. Lenman, 'The Teaching of Scottish History in the Scottish Universities', *Scottish Historical Review*, vol. lii (October 1973), 171–3.

[4] Ash, *Strange Death*, 148.

[5] Colin Kidd, '*The Strange Death of Scottish History* Revisited: Constructions of the Past in Scotland, c.1790–1914', *Scottish Historical Review*, vol. lxxvi (April 1997), 100.

[6] Karen O'Brien, 'Between Enlightenment and Stadial History', *Journal of Eighteenth-Century Studies*, vol. 16 (March 1993), 53–64.

The Enlightenment historians were followed by Sir Walter Scott, the world's first best-selling historical novelist, who, through his Waverley series and *Tales of a Grandfather*, had invested the Scottish past with magical appeal, not only in Britain but throughout Europe and North America. Scott correctly surmised in the introduction to *Waverley* (1814): 'There is no European nation, which in the course of half a century or little more, has undergone so complete a change as the Kingdom of Scotland.' This economic and social transformation, together with the political tensions that it generated, massively expanded the readership for his poetry and novels because they satisfied the nostalgic emotional needs of the propertied classes in a world experiencing unprecedented change from tradition to modernity. So, in the words of one commentator: 'Sir Walter Scott probably did more for Scottish history in this period than all the Scottish universities put together.'[7] Scott was also a potent force in the establishment of the great historical clubs, the Bannatyne, Maitland, Abbotsford, and Spalding, which were active in all the cities of the country apart from Dundee and did an enormous amount of work publishing original Scottish historical sources. But all this creative and editorial activity took place outside the formal structures of Scottish school and university education. Also, the publishing clubs had a short-lived existence. Most were in decline by the mid-nineteenth century and all soon ceased their activities in the decades that followed. Others only arose with the formation of the Scottish History Society in 1886.[8]

Neither the great figures of the Enlightenment nor the mesmerizing historical narratives of Scott, the Wizard of the North, saved Scottish history from academic irrelevance. Pre-1707 Scottish history received a critical pounding from eighteenth-century Enlightenment writers as a subject not worthy of serious study. It was depicted simply as a tale of feudal faction, political turbulence, religious fanaticism, and economic backwardness, in stark contrast to the constitutional, 'civilized', and material progress of England in the medieval and early modern centuries.[9] The only 'usable past', therefore, was English constitutional history, and the English parliamentary experience became the template against which all other British political developments should be measured. Whig Anglo-British history inevitably became the favoured choice. The Enlightenment writers saw themselves as scholarly citizens of the world and such figures as William Robertson and Adam Ferguson came to regard Scottish history as parochial if picturesque. David Hume began a *History of Great Britain* (1754), which was concerned with the seventeenth century. As it moved back to the sixteenth century it became a *History of England*. Likewise, John Millar, a major influence on the development of modern sociology, established his reputation with *An Historical View of the English Government* (1787).

Ironically, the flowering of Scottish culture in which these writers played a prominent part ought to have given the lie to the idea of a backward and uninteresting Scottish

[7] Lenman, 'Teaching of Scottish History', 171. The most recent study is Stuart Kelly, *Scott-land: The Man Who Invented a Nation* (Edinburgh, 2010).

[8] Michael Lynch, ed., *The Oxford Companion to Scottish History* (Oxford, 2001), 315–16.

[9] Colin Kidd, *Subverting Scotland's Past* (Cambridge, 1995).

nation. In the nineteenth century, however, the very influential English scholar, H. T. Buckle (1821–1862), forcefully attacked this possibility by describing these earlier Scottish intellectual activities as mere brief and ephemeral aberrations that had faded away before 1800. The Scottish norm in Buckle's view remained a long Scottish history of feudal backwardness and ecclesiastical tyranny.[10] It was a perspective shared by most Scottish authorities at the time. Even Sir Walter Scott's fictional recoveries of the Scottish past could not withstand the intellectually devastating firepower that marginalized the national history as a fit subject for educational purposes. Indeed, his very success and the appeal of his dramatic and colourful tales helped to steer interest in the Scottish past into the intellectual dead end of 'historical kailyards' and romantic appendages.[11]

At root, perhaps, was the problem of the overwhelming dominance of uncritical unionism in Scottish politics before 1870. George Chalmers in his monumental *Caledonia* of 1807–24 was typical of that time in seeing 1707 as a liberation for the Scots, a *sine qua non* of their material and moral progress out of superstition and poverty.[12] In several European countries mid-nineteenth-century nationalism spawned an historiographical revolution. This was not the case in Scotland. As Colin Kidd has suggested: 'Between the mid-eighteenth century and the emergence of the Scottish question in the 1970s there was no credible, sustained or widely supported Scottish critique of the Anglo-Scottish Union, and as such no call for an articulate ideology of Anglo-Scottish unionism.'[13]

For much of the Victorian era in particular, Scotland seemed to enjoy the economic benefits of union and empire without either political interference from outside or the erosion of national identity. Much of the day-to-day administration of Scotland through the burghs, public boards, and courts of the Church remained in Scottish hands. Semi-independence was also guaranteed by the incomplete union that allowed the Scots to retain national powers over private law, the established Church, and education. Through imperial opportunities they not only exploited an abundance of middle-class and professional careers but experienced an enormous boost to national confidence as Scots came to be described in the public prints as natural empire builders. There were some sensitivities aroused, however, especially when the notion of Scotland as a full and equal partner in union seemed threatened (as with the foundation of the National Association for the Vindication of Scottish Rights of 1853) or the Irish were thought to be obtaining unfair advantages at Scottish expense. For the most part, however, a nationalist challenge to the status quo failed to develop because there was no intrinsic political or economic rationale for it to emerge in Scotland.[14]

[10] M. Fry, 'The Whig Interpretation of Scottish History', in I. Donnachie and C. Whatley, eds., *The Manufacture of Scottish History* (Edinburgh, 1992).

[11] Richard J. Finlay, 'Controlling the Past: Scottish Historiography and Scottish Identity in the 19th and 20th Centuries', *Scottish Affairs*, 9 (autumn 1994), 124.

[12] George Chalmers, *Caledonia*, 3 vols. (London, 1807–24), vol. I, 866.

[13] Colin Kidd, *Union and Unionisms: Political Thought in Scotland, 1500–2000* (Cambridge, 2008), 24.

[14] There is considerable literature on these issues. For an overview and summation see T. M. Devine, *The Scottish Nation, 1700–2007* (London, 2006), 285–95.

2

It might be thought, however, that history was more on the side of Scottish History from the 1880s. Before that decade unionism has rightly been considered 'banal', in the sense employed by Michael Billig, in relation to nationalism, i.e. a political category so omnipresent and unquestioned that no explicit articulation of its importance was required.[15] This changed in the 1880s. As 'Englishness' was redefined to incorporate a more populist concept of 'England', so these terms started to become increasingly used rather than 'Britain' and 'British', to the considerable displeasure of some of the Scottish political elite.[16]

Other factors brought Scottish issues onto the British political agenda. The fear in Scotland that resurgent nationalism was securing preferential treatment for Ireland was one issue. Then there were administrative reforms that were carried out, ostensibly at least, to help the Union function more effectively. These measures included the revival of the office of Secretary of Scotland, the establishment of the Scottish Office in London and a Scottish Standing Committee, within the Westminster Parliament, to consider all Scottish legislation.

The political context behind these initiatives was a movement for Scottish Home Rule within the Union. A Home Rule Association was founded, between 1886 and 1914, and seven Home Rule motions were presented to Parliament. This new impetus for constitutional change came within an ace of success in May 1914 when a Home Rule bill passed its second reading in the House of Commons. The outbreak of the First World War killed off the opportunity for the legislation to reach the statute book. Nonetheless, this political dynamic implied a more serious interest in specifically Scottish matters, which might plausibly be expected to have an impact on a revival in the history and culture of the nation.

Running parallel with these political changes was a widespread concern in influential circles that the Scottish universities, undeniably world-famous in the eighteenth century, were now declining into mediocrity. In the mid-nineteenth century the Indian civil-service examinations became open to public competition. The tradition of Scottish service in India had been long and very rewarding for the landed, professional, and mercantile classes of the country, a crucial mainstay of gentry and middle-class careers.[17] Scottish failure in these new examinations therefore 'amounted almost to a trauma in these sections of the Scottish community which had long traditions in India or who aspired to enter this lucrative career'.[18] More generally, complaints now abounded that

[15] Michael Billig, *Banal Nationalism* (London, 1995), and for the Scottish analogy, Kidd, *Union and Unionisms*, 23–31.

[16] R. Colls and P. Dodds, *Englishness: Politics and Culture, 1880–1920* (London, 1986).

[17] See Andrew Mackillop's chapter on Scots in the eastern empire in 'Locality, Nation and Empire: Scots in Asia, c.1695–c.1813', in John M. Mackenzie and T. M. Devine, eds., *Scotland and the British Empire* (Oxford, 2011).

[18] Ash, *Strange Death*, 150.

the products of Scottish universities, had to go to England for advanced training because of their generalist education, that Scottish universities grossly neglected research studies, and that the teaching curricula had hardly changed in three hundred years. Some of the most wounding criticisms came from James Donaldson, rector of Edinburgh High School and editor of the *Educational News*, the journal founded by the Educational Institute of Scotland. Donaldson lamented in 1882: 'The Scottish universities are schools with curricula fixed nearly on the old Reformation programme', and argued that 'an educational revolution' had taken place in the nineteenth century and with it had come much greater 'competition for distinction in science, scholarship, theology and all the higher intellectual pursuits'. In this context, however, the 'Scotsman has to fight with bow and arrow against men armed with rifles and cannon. He is the handloom weaver of the intellectual world.'[19]

Because of the depth of concern a whole series of reform proposals came thick and fast in the later nineteenth century. An Act of Parliament in 1889 established an executive commission under the Court of Session judge, Lord Kinnear, which passed no fewer than 169 ordinances. These included a compulsory entrance examination, changes in arts, law, and medical degrees, including Honours courses. An entrance examination was in place by 1892 and meant that the common age at entry moved upwards from fourteen or fifteen to seventeen, which was facilitated by the introduction of the new leaving certificate for secondary schools. As late as the 1870s, only a small number of Arts students actually took degrees but, by 1914, there had been a transformation with most university students in Scotland now aiming to graduate. New chairs were founded and professorships in English History and Political Economy at Aberdeen, Edinburgh, and Glasgow promoted. Was this to be a new dawn for Scottish History, with the establishment of professorships in the discipline of History backed by state support for the first time in Scotland?[20]

The omens indeed seemed good. Sir William Fraser, clerk to Cosmo Innes and an eminent Edinburgh lawyer, left funds to create a Chair in Scottish History, later founded in 1901, in the University of Edinburgh. Some years afterwards, in 1913, a second professorship was established at the University of Glasgow, from funds realized by the 1911 exhibition of Scottish history, art, and industry at Kelvingrove Park.[21]

It was not an entirely false dawn, even if the skies remained somewhat cloudy for some time to come. Certainly, the admiration of Scottish intellectuals, particularly members of the legal profession, for the constitutional history of England, endured. History in the Scottish universities developed much later than in Oxford and Cambridge, and it was therefore perhaps predictable that the focus of these institutions on Whig constitutionalism would become the pedagogic model for the new chairs of History at Edinburgh and Glasgow, especially in the form of medieval institutional history of the type so

[19] *Contemporary Review*, vol. xli (1882), 150.

[20] R. D. Anderson, *Education and Opportunity in Victorian Scotland* (Edinburgh, 1983), 269ff.

[21] Gordon Donaldson, *Sir William Fraser* (Edinburgh, 1985); Lenman, 'Teaching of Scottish History', 177–8.

fashionable in contemporary English scholarship.[22] The first Professor of History at Glasgow in 1894 was Richard Lodge, Fellow of Brasenose College, Oxford, while the new Edinburgh chair went to a Cambridge man, George Prothero:

> Thus, the first two chairs of history in Scotland were filled by Oxbridge candidates… Academic history was [for them] primarily the corporate worship of the origins and development of the contemporary parliamentary establishment at Westminster which both the Scottish and English middle classes regarded as the supreme embodiment of their national class and communal interests.[23]

The persistent anglicization of the curriculum was also fortified by the developing belief that the study of history was not simply to be regarded as a cultural experience but rather as practical study which trained students to be future national statesmen and imperial administrators. These essential skills could only be taught and learned by 'proper history', as articulated by William Stubbs's teaching of the constitutional history of England. Stubbs was the Regius Chair of History at Oxford from 1866 and the most influential academic historian of the age.[24]

It would be most unfair, however, to label the successors of Lodge and Prothero simply as agents of English cultural imperialism in Scotland. Some historians from south of the border did make important contributions to Scottish history. The outstanding example was C. S. Terry, promoted to a professorship at Aberdeen University in 1903, who had an academic background in Cambridge and Durham. He did much in his writings to rehabilitate the pre-1707 Scottish Parliament after the long tradition of negative criticism emanating from the school of Whig historiography.[25] Similarly, but at a later date, Richard Pares, who became a professor at Edinburgh in 1945, introduced the remarkable regulation that all students for Honours in history had to attend a survey course in Scottish History, a requirement later abandoned by his successors when he returned to Oxford in 1954.[26]

Yet, well into the twentieth century, the intellectual orthodoxies remained unfavourable both to the expansion of research and teaching in Scottish history. Since history had come to be regarded as an important and relevant training for future statesmen, civil servants, and imperial administrators, English constitutional history was preferred since it outlined the history of the state in which students were citizens of the United Kingdom rather than Scotland: 'What sort of school for statesmen was the history of a stateless nation? Though rich in heroic characters and dramatic episodes, Scotland's past appeared to lack a whiggish plot.'[27]

In some respects, the first two Scottish History professors, Peter Hume Brown and Robert Rait, at Edinburgh and Glasgow respectively, swam against this tide. Both

[22] Robert Anderson, 'University History Teaching and the Humboldtian Model in Scotland, 1858–1914', *History of Universities*, vol. 25/1 (2010), 149–50.

[23] Lenman, 'Teaching of Scottish History', 174.

[24] Ash, *Strange Death*, 149–50.

[25] C. S. Terry, *Scottish Parliaments 1603–1707* (Glasgow, 1905).

[26] J. G., D. H., and L. B. Namier, 'Richard Pares', *English Historical Review*, vol. 73 (October 1958), 577–82.

[27] Anderson, 'University History Teaching', 167; Kidd, '*Strange Death*', 99.

published extensively. Hume Brown produced among other books a three-volume general history of Scotland. He was elected a Fellow of the British Academy, a sign that high-quality academic work was now being done in Scottish history.[28] Rait was an expert on the Scottish Parliament but also wrote for the general public, with *The Making of Scotland* in 1911 and a popular *History of Scotland* in 1914.

But this was not yet an entirely new era. Academic researchers in Scottish history before 1945 were still few and far between, not least because of the premium that the Scottish university system in general at the time placed on teaching rather than original scholarship. Hume Brown's syntheses (1899–1911) remained the standard university textbooks as late as the early 1960s, a half-century after they first appeared.[29] The creation of separate chairs in the subject did in part reflect its relative neglect in general history teaching, but the development was ambiguous because it threatened to isolate Scottish history from mainstream advances in the discipline as a whole.[30] Moreover, most of the new scholarship that was published still tended to concentrate on pre-Union Scotland. To all intents and purposes it seemed that only the 'independent' nation was a worthy and proper focus for academic research. Modern Scottish history remained a Cinderella subject and a tradition that took a long time to die. The first modernist was finally appointed to the Edinburgh chair as late as 2005. Glasgow did only slightly better. Of the six holders of the established Scottish History chair there to date, George Pryde in the 1950s was the only appointment to break the long line of medievalists and early modernists. When J. D. Hargreaves delivered his inaugural lecture as the new Burnett-Fletcher professor at Aberdeen in 1964, he was able to claim that the history of Scotland since 1707 was less studied than that of Yorkshire.[31] Remarkably, William Ferguson's *Scotland: 1689 to the Present*, which appeared in 1968, became the first ever book-length study of the last three hundred years of Scottish political and social history written by an academic historian.

3

Scottish research historians in the universities of the early 1950s numbered around fifteen and the expertise of most of them lay in the centuries before 1700. The subject was taught at the undergraduate level in the four ancient Scottish universities of Aberdeen, Edinburgh, Glasgow, and St Andrews, but attracted few students and had a low profile. There was a tiny number of PhD scholars: as late as 1966 only three research degrees in Scottish history were completed in the UK as a whole. Professional Scottish historians felt marginalized and defensive, never being really certain whether their

[28] 'The Late Professor Hume Brown', *The Scotsman*, 2 December 1918.
[29] Anderson, 'University History Teaching', 160.
[30] Lenman, 'Teaching of Scottish History', 176.
[31] J. D. Hargreaves, 'Historical Study in Scotland', *Aberdeen University Review*, vol. xi (1964), 237–50.

colleagues in the mainstream of the history discipline regarded them as intellectually respectable. The two Professors of Scottish History in the later 1950s, George Pryde at Glasgow (died 1961) and William Croft Dickinson at Edinburgh (died 1963), were austere scholars of high quality but their publications were unlikely to have much resonance in the world outside the universities. Scottish history had a reputation for being solid but dull, incapable of competing with the exciting momentum being achieved in so many aspects of European, American, and British history at the time.[32]

Nonetheless, important seeds were being sown. Croft Dickinson re-established *The Scottish Historical Review*, the main journal in the subject, which had ended publication earlier in the century. There was institutional expansion in social and economic history, soon to have a powerful impact on modern Scottish history in general. Queen's College, Dundee (still part of St Andrews) appointed a professor in this emerging field in 1955, with other chairs established in Glasgow in 1957 and Edinburgh in 1958. Books of genuine quality began to appear on the modern period, with new and exciting perspectives reflecting the advances in the subject outside Scotland. The works of Henry Hamilton on the Industrial Revolution and Malcolm Gray on the Highlands, both of Aberdeen University, were especially distinguished. But perhaps the most stimulating, and a portent for the future, was Laurance J. Saunders's *Scottish Democracy 1815–1840: The Social and Intellectual Background* (1950). Saunders was not a member of a history department but held a chair of constitutional law at Edinburgh. Nevertheless, he produced a text of innovative and perceptive research, written in clear and appealing prose, on one of the seminal periods of economic, social, and intellectual change in modern Scottish history. D. W. Brogan of Cambridge, reviewing it for the *Scottish Historical Review*, commented fulsomely that the book 'represents both original and penetrating research and a very high degree of synthetic power; and was such a model of clarity and organisation that the critical reviewer is baffled in the performance of his duty'.[33] Saunders had eloquently demonstrated the range of fascinating questions that had never been raised, far less answered, about the recent Scottish past. Here, indeed, it was implied, was a subject full of intellectual challenge and exciting cultural relevance.

Finally, in the 1960s and 1970s, historians of modern Scotland achieved more in two decades than their predecessors had done in two centuries. The four-volume *Edinburgh History of Scotland*, written by Archie Duncan, Ranald Nicholson, Gordon Donaldson, and William Ferguson, gave twentieth-century Scots a professional account of their past from the earliest days to the 1960s. Hume Brown was now finally superseded. R. H. Campbell's *Scotland since 1707* (1965) steered the nation's scholarship towards economic history, the key intellectual dynamic of the 1960s and 1970s. A few years later, T. C. Smout's *A History of the Scottish People 1560–1830* (1969) extended the breadth of the subject into such social issues as demography, social class, culture, and the life experience of ordinary people. Written in luminous prose, it became a best-seller, even attracting

[32] Smout, 'Scottish History in the Universities', 45; Lenman, 'Teaching of Scottish History', 178–9; Finlay, 'Controlling the Past', 135.

[33] *Scottish Historical Review*, vol. 31 (April 1952), 82–4.

generous praise in the *TLS* from that notorious Scotophobe, Hugh Trevor Roper, Regius Professor of Modern History at Oxford. Smout's book opened the eyes and expanded the ambitions of an entire generation of undergraduate and graduate students. It became a catalytic force in the study of modern Scottish History.

It was indeed an exciting period, not least for the current editors of this *Handbook* who lived through it. Looking back, it is possible to detect that significant forces were at work. First, the Whig interpretation of history, which had cast such a pall over the study of serious Scottish history for generations, crumbled and eventually became extinct under the assaults of English scholars such as Herbert Butterfield and Lewis Namier. No longer was Scottish historiography imprisoned within a narrative of defective and inadequate development.[34] Second, the Robbins Report in 1964 advised a programme of unprecedented general expansion in British higher education. The results were truly historic. The ancient universities in Scotland grew exponentially in staff numbers, and the new universities of Strathclyde, Dundee, Heriot-Watt, and Stirling soon gained royal charters. All hired more historians than ever before (even the more technically orientated Heriot-Watt for a time). A substantial number of these scholars had expertise in economic or social history. Third, to fill the new posts, apart from a few Scots, historians mainly trained at English universities and at the cutting edge of the discipline were recruited in significant numbers to Scottish academic positions. The bulk of these again were economic and social historians. For them transfers of intellectual interest were reasonably straightforward: studying trade in Hull could easily lead to an examination of the commerce of Glasgow, while poverty issues in Leeds and Liverpool might lead on to consideration of social welfare in Dundee and Edinburgh. Moreover, the study of economic and social history was not fixated with Westminster and its doings. As a result, Scottish history was not only liberated from the old constitutional rut but became embedded within the mainstream of generic European scholarship, where issues very relevant to Scotland—peasant life, rural transformation, emigration, urbanization, industrialization, and much else—were commonplace.

The greatest impact of this scholarly invasion was experienced at Edinburgh, Glasgow, and Strathclyde. The list of the major figures involved was an illustrious one: Michael Anderson, FRSE, FBA; John Butt, FRSE; Neil Buxton; Sydney Checkland, FBA; Baron F. Duckham; Michael Flinn; Gordon Jackson; Clive Lee; Edgar Lythe; Rosalind Mitchison, FRSE; R. J. Morris; Peter Payne, FRSE; Christopher Smout, FRSE, FBA; James Treble; J. T. Ward, to name but a few. Many of the current crop of modern Scottish historians in post benefited from the stimulating teaching and innovative research of this notable generation. In areas of economy and society, at least, Scottish scholarship began rapidly to catch up with the subject elsewhere.

At the same time, the context of Scottish politics was changing. The rise of the SNP from the 1960s, the devolution agenda, and the pollsters' conclusions that in terms of identity 'Scottishness' seemed to be gaining on 'Britishness', provided for a new, public interest in Scottish history. At the start, much of this was satisfied by popular writers

[34] Kidd, *Union and Unionisms*, 169.

such as John Prebble and Nigel Tranter. But academic historians soon made their presence felt in the print, radio, and television media.[35] These political changes above all lent the modern era a relevance and credibility outside the academic domain that it had previously lacked. Many Scots developed a new hunger for understanding the connection between the Scottish past and the Scottish present. Ironically, this appetite for knowledge among adults was partially stimulated by the basic failings in their own school education where, for the most part, Scottish History until more recent times had remained marginal and taught in what one informed observer termed a 'deadly fashion'.[36]

The result of this transformation was a veritable historiographical bonanza. Key works were published in the history of commerce, banking, industry, business, transport, industrial archaeology, and much more. Then the pendulum started to swing to social history in the 1980s and 1990s, with leading-edge research in demography, urbanization, poverty, social class, and much else. Specialist groups were founded in economic history, labour history, history of education, Scottish Catholic history (established long before the revival in the late 1940s), and industrial archaeology. Modern Scottish history came to be situated in a comparative context with a series of Irish–Scottish conferences and their accompanying publications from 1977 and other related innovative work. Large-scale collaborative research projects also developed, often generously funded by external agencies, notably at Aberdeen in Irish–Scottish studies, Stirling and St Andrews in environmental history, St Andrews in the history of the Scottish Parliament, and Edinburgh in diaspora studies. The subject seemed to have developed towards a new intellectual maturity. But what of its current weaknesses?[37]

In an article published in 2007, T. C. Smout was unambiguous, and in response to that question, voiced concern that the gains in research may mean little to scholars outside Scotland; that still too many Scottish historians fail to attempt to relate their work to issues in the international historiographical agenda, so continuing the old accusations of introspection and parochialism; economic history, formerly the catalyst, now virtually disappeared into oblivion; and, he added, that in environmental history, gender studies, modern political history, and cultural history the interest in Scotland, though increasing, remained underdeveloped.[38]

In addition, however, an even more important challenge is the failure thus far to trigger intensive debate, the clash of ideas, in key areas of study, without which the subject cannot renew itself. The Union of 1707 on its tercentenary in 2007 did cause some vigorous discussion and, from time to time, the Highland clearances do still stoke debate in the public prints, though usually along worn ruts and pretty predictable and routine lines of argument.

Part of the difficulty is that there lingers a lack of confidence among some historians of Scotland, a need to search for the way to establish their identity and the importance of

[35] Smout, 'Scottish History in the Universities', 49.
[36] Lenman, 'Teaching of Scottish History', 179.
[37] For example, R. A. Houston and I. D. Whyte, eds., *Scottish Society, 1500–1800* (Cambridge, 1989).
[38] Smout, 'Scottish History in the Universities', 49–50.

their subject. This was evident very recently in a fascinating and wide-ranging conference on 'Whither Scottish History' in October 2010 sponsored by the *Scottish Historical Review*. This surely relates to the theme already discussed, the lack of serious scholarship until the second half of the twentieth century. Another convention, a much more pernicious one, also endures: the passion for romance, invented or quasi-real. This is above all encapsulated in the early modern period in the obsession with that lamentable figure, Mary, Queen of Scots, but the equally lamentable Bonnie Prince Charlie runs her a close second. The number of books on Mary is vast. Most are dire. But it is surely the responsibility of professional scholars to try to direct attention away from Mary to the much more fascinating kingdom she ruled (very briefly). Visitors to Linlithgow, for example, should be told of the really important and influential monarch in Linlithgow's story, James V, instead of receiving undue emphasis on the fact that Mary, who hardly ever chose to go to Linlithgow, happened to be born there. Any history can shade into myth, romance, fiction. But it is difficult to think of any other society where the two-year antics of a failed ruler—the only failure in a royal house whose kingship was devastatingly impressive for two centuries—have been allowed such a dominant place in early modern historical discussion.

If Mary, Queen of Scots exemplifies one way in which Scottish historians have spent proportionately too much time on a minor issue, at the expense of infinitely more important and interesting ones, another is the uncertainty about whether Scottish history is indeed a subject in its own right, or whether it will only be of interest if set in a wider context, British or international. Ranald Nicholson, mentioned earlier in this introduction, did indeed write a solid and impressive history of the later Middle Ages. But he was informed by his desire to show that Scotland shone as a notable example of concepts then fashionable among historians of other countries. Thus Scotland's 'New Monarchy Triumphant' was—had to be—in the top rank and, as Nicholson argued in a lecture given at Glasgow University, certainly superior to that of England. It was unfortunate that already J. H. Elliott was mounting a convincing critique of the whole idea.[39] What Nicholson was doing—and he was by no means alone in this, and not the last to do it—was writing Scottish history that fitted Scotland into the historiographical fashions of other societies. The problem here was that such an approach came up against the problem that Scotland might not be so readily fitted in; in other words, Scotland had to be considered not as an example of something else, but in its own right. As has already been said, the study of pre-1707 Scottish History used to be seriously neglected, as the history of a backward and violent society. What that really meant was that it did not have the precociously developed governmental and bureaucratic system of England, and therefore another fashionable concept, the overmighty nobility, was predictably portrayed even more overmighty and destructive than any other. Only when the premise was questioned—could a kingdom be civilized only if ruled like England?—did it emerge that Scotland was not a pale reflection of England, but a kingdom with very

[39] Ranald Nicholson, *Scotland: The Later Middle Ages* (Edinburgh, 1974). J. H. Elliott, *Imperial Spain, 1469–1716* (London, 1963), ch. 3.

different political and social mores, which actually challenged prevailing ideas, and its history could be used, therefore, to ask a series of different questions.

An offshoot of this problem, and another way in which Scottish historians can be seen to grope for identity, is in that great new fashion, 'British History'. What this could mean, south of the border, could all too often be English history given the name of British. In Simon Schama's much-praised television series, *The History of Britain*, Scotland before 1603 was discussed three times: Skara Brae, Wallace and Bruce, and Knox and Mary. It was ever thus, and not only in works published by English historians on, for example, 'Tudor Britain'.[40] It was exactly what courses in the Scottish universities, euphemistically entitled 'British History', had done. Small wonder, therefore, that Scottish historians had tried to fight back by insisting on the importance of Scotland. But in the second half of the twentieth century, when the new 'British' historiographical problem came into play, that was overtaken by the insistent demand that we all, Scots, English, Irish, Welsh, were British historians now. The late and great Welsh historian Rees Davies determinedly sought to create a British framework for the four societies of the high medieval period. It is questionable whether that really worked.[41] But it did look as if such a framework could really come into its own in the early modern period, when Scotland joined the composite monarchy of England, Wales, and Ireland. Surely it would have much to offer Scottish historians, so long at the mercy in this period of Anglocentric interpretations of the union of the crowns of 1603 and its consequences? And in the flood of publications on early modern British history, Scottish historians found themselves welcome guests and cheerfully became engaged, even though gloomy mutterings about Anglocentricity remained.[42]

4

Contributors to this volume were asked to respond to the guidelines in the Oxford University Press *Handbook* series. The *Handbooks* are designed as works of scholarly reference, addressing the need to 'stand back' in order to distinguish the wood from the trees and reflect critically on the state of learning. They are also intended to help shape

[40] Thus *The Oxford Illustrated History of Tudor and Stuart Britain*, ed. John Morrill (Oxford, 1996); this is a remarkable example of Anglocentric history under the name of Britain, simply because the editor is a historian who has a notable claim to be genuinely 'British'. It is an indication of the extent of the problem.

[41] For example, Rees Davies, *The Matter of Britain and the Matter of England* (Oxford, 1996), and *The First English Empire* (Oxford, 2000).

[42] The list of 'British' books is a very long one. In the interests of space, only two will be cited here. R. G. Asch, ed., *Three Nations—a Common History? England, Scotland, Ireland and British History c.1600–1920* (Bochum, 1993), and Glenn Burgess, ed., *The New British History: Founding a Modern State, 1603–1715* (London, 1999). Footnotes and, in the second work, a section on Further Reading, provide plenty more examples.

the field by giving primacy to approaches and issues that seem most likely to lift the debate out of excessively worn historical ruts. The chapters, therefore, seek to give succinct accounts of their subjects and be accessible to readers without specialist knowledge but at the same time, unlike a general synthesis, a conventional reference book or a dictionary, they will try to press the limits of current knowledge and address questions that remain unanswered and the agenda for future research. One of the objectives here is to make those controversies that do exist in interpreting the Scottish past more explicit and more amenable to debate, challenge, and disputation, which are the very lifeblood of any vigorous academic discipline.[43]

Within these broad parameters we had to make a number of choices as editors. The most important is that we believe 'the history of modern Scotland' should be analysed from the Renaissance and Reformation periods rather than the previous conventional starting points such as the Union of 1707 or the later seventeenth century. As several of the chapters in the book will demonstrate, there are long-run social, religious, and intellectual forces that shaped the modern Scottish nation which cannot be fully understood without reaching back in time to the sixteenth century.

We have also sought to encourage the existing trend towards the internationalization of Scottish history by commissioning chapters on emigration, immigration, and empire. 'Greater Scotland' arguably needs much attention in light of the long history from the medieval period of the huge numbers of emigrants associated with the Scottish diaspora. In addition, all authors have been advised, whenever appropriate, to make reference to the Scottish historical experience within a comparative framework of reference. We have also been keen to tap into the expertise of other disciplines such as geography, political science, literature, and sociology. All of them have made signal contributions to an understanding of modern Scottish history in recent years. They can often add an important theoretical dimension, still sometimes absent from the strongly empiricist traditions of the subject.

The selection of topics and contributors was especially challenging. There are certain key themes which, of course, had to be included, such as Reformation, the Union of 1707, Industrialization, Enlightenment, the First World War, and the like. But we were also keen to encourage emerging fields. So there are chapters on environment, myth, family, empire, criminality and violence, gender, contemporary society, and economy. We hope that these essays will encourage even more much-needed research into these important areas.

It is one sign of the new energy of the discipline that there are now many more distinguished scholars at work than we could possibly have invited to take part in this project. In the end we used three criteria to decide on the selection of contributors: first, eminent historians in their respective fields; second, younger scholars who by their existing publications are beginning to make fresh and original contributions; third, historians

[43] For reviews of the recent historiography see 'Special Issue: "Whither Scottish History": Proceedings of the Strathclyde Conference', *Scottish Historical Review*, vol. lxxiii (April 1994), and 'Special Issue: "Writing Scotland's History": Proceedings of the Edinburgh Conference', *Scottish Historical Review*, vol. lxxvi (April 1997).

outside Scotland who might be able to see the Scottish experience in a more fresh and interesting light. In fact, sixteen of the authors in the book are based in institutions in England, Ireland, Wales, Canada, and New Zealand. This is itself an indication of the increasing international interest in Scottish history.

Acknowledgements

Completion of a project on the scale of this *Handbook* would not have been possible without the help of many people. We are grateful in the first instance to our contributors for their exemplary patience and support during the two-year gestation of the volume, and for their courteous and speedy responses to our editorial suggestions and queries. We also thank the large number of anonymous external reviewers whom we recruited to help comment on first drafts of chapters. Their contributions were invaluable and did much to enhance the overall quality of the final volume. Our editors at Oxford University Press could not have been more supportive. We thank in particular Christopher Wheeler, who first commissioned the *Handbook*, for his professional advice. Stephanie Ireland, Emma Barber, and Matthew Cotton of OUP were unfailingly helpful and efficient. Richard Mason was a meticulous copy-editor. Last, but by no means whatsoever least, we are very pleased to record our immense gratitude to Margaret Begbie, the anchor of the entire project, who maintained regular contact with contributors, reminded them of various deadlines, and replied with characteristic efficiency and tact to their various questions and concerns.

T.M.D. and J.W.

June 2011

Further Reading

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PART I

SOME FUNDAMENTALS OF MODERN SCOTTISH HISTORY

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CHAPTER 1

LAND AND SEA: THE ENVIRONMENT

T. C. SMOUT

> War against the wild forces of nature is, from the point of view of humanity, a constructive and in every way a useful operation, worthy of the attention of all statesmen who have the real welfare of the country at heart.
>
> H. M. Cadell, *The Story of the Forth* (Glasgow, 1913), p. 225.

Sixteenth- and seventeenth-century topographers, like Bishop Leslie and Gordon of Straloch, spoke of the Scottish environment as though it were a given, a gift from a good but often incomprehensible God. Eighteenth-century lairds and philosophers spoke of improvement, nineteenth-century industrialists of the march of progress, Edwardian engineers (like Cadell) of warfare against nature, while modern politicians and environmentalists talk of sustainable development. All are speaking of ways to live comfortably, or more comfortably, in the world around us.

As E. A. Wrigley has emphasized, all life depends on capturing a proportion of the streaming energy of the sun, which even in cloudy northern Britain is equivalent to 22,000 million tons of coal a year.[1] The food of all life on earth rests ultimately on photosynthesis, the process by which vegetable growth is able to capture solar energy, albeit only between one and four parts per thousand. When we eat grain, or meat, or fish we transfer some of this to ourselves, and for an active life a working human population

[1] E. A. Wrigley, 'Meeting Human Energy Needs: Constraints, Opportunities and Effects', in P. Slack, ed., *Environments and Historical Change* (Oxford, 1998), 76–95; E. A. Wrigley, 'Energy Constraints and Pre-Industrial Economies', in S. Cavaciocchi, ed., *Economia e Energia secc. XIII–XVIII* (Florence, 2003); E. A. Wrigley, 'The Transition to an Advanced Organic Economy: Half a Millennium of English Agriculture', *Economic History Review*, 59 (2006), 435–80.

needs an intake of 3,500 calories per adult per day, though 1,500 calories will suffice to keep a person alive. When we use thermal energy to keep warm, we use fuel: if it is wood, we use the energy of decades of photosynthesis stored in the trees we fell; if it is peat, we use the stored energy of centuries, even of millennia; if it is coal, gas, or oil, that of possibly tens of millions of years. With good silviculture, trees are a renewable crop. Peat, coal, gas, and oil are not renewable on any human timescale, though until the 1970s they were assumed to be inexhaustible resources—perhaps not locally but certainly globally.

When motive power was needed for ploughing to move goods or to turn machinery, there was once only the choice of simple forms of kinetic energy: muscle power deriving from photosynthesis, either human or animal (a horse is on average ten times stronger than a man), or sources of renewable mechanical energy such as watermills, windmills, and sails. Both the wind and the rain also derive their energy from the sun, the first through differential warming of the earth, the second from solar evaporation in the hydrological cycle. The thermal energy of fuel could not be translated into the kinetic energy of motion until after the invention and development of the rotary steam engine by James Watt and others. With the Industrial Revolution, inorganic fuels swept the board as the prime means by which humanity endeavoured to live more comfortably.

In the last resort the success of economies, of states themselves, has always rested on their access to the sun's energy, current or stored, and on their efficiency in using it. The biggest shift of all is this shift from an organic to an inorganic economy: in the first, humanity used within a year mainly the photosynthesis of that year; in the second, the world now uses annually the accumulated photosynthesis of half a million years, and as we near the peak in oil drilling we realize that a fossil-fuel economy is not sustainable. To speak of the conquest of nature is an oxymoron, since the sun is always inescapably in control of us.

1500–1750

In the centuries before 1750, the ability of the Scots and everyone else to capture and use the energy of the sun was not basically different from what it had been in the Iron Age, though changes and improvements had been made at the edges. It depended mostly on photosynthesis through land-extensive methods of husbandry assisted by animals and metal-tipped tools, inefficient by modern standards but good enough to provide a dispersed population with enough calories to survive in most years, and since the Middle Ages also able to support modest urban populations of craftsmen and merchants. To a small degree it also depended on forms of hunter-gathering probably little changed since prehistory, of which fishing with nets and lines on rivers, shores, and from inshore boats, was the most useful. Thermal energy came from peat bogs and turf, seldom from firewood: in the sixteenth and seventeenth centuries it also increasingly came in the Central Belt from coal deposits, which facilitated the growth of Edinburgh, already called Auld Reekie, from a few thousand individuals in 1500 to over forty thousand by

1750. Kinetic energy derived from the muscles of people and horses (still occasionally oxen before 1600), and to a smaller but vital degree from watermills (primarily to process grain) and sailing ships (to trade coastally and overseas). It infrequently came, in blustery Scotland, from windmills.

Compared to other parts of the British Isles, Scotland suffered from two interlinked disadvantages in garnering photosynthetic energy. The first was altitude and slope. Though there were extensive tracts of fertile low arable lands, particularly in the east, only 40 per cent of Scotland is below 500 feet/152 metres (but 79 per cent of England and 78 per cent of Ireland): 31 per cent is above 1,000 feet/305 metres (but 6 per cent of England and 4 per cent of Ireland).[2] This meant that much of the photosynthetic energy had to be gained indirectly from grazing animals rather than directly from crops, at a very low calorie yield per acre. The second disadvantage was climate. Scotland certainly benefited very much from the amelioration of temperature from the warm waters of the Gulf Stream compared to lands at similar latitudes (like Labrador in Canada). But it nevertheless endured more wind and rain, more cold and shorter growing seasons than most other parts of the British Isles.

The configuration of the ground combined with underlying clay soils and schists in the glaciated valleys to turn much low ground into acid bog and marsh, or cover it with standing water. This was so even in Lothian, Fife, and Strathmore, areas of great potential fertility, as well as in the north and west. ' 'Tis almost incredible how much of the mountains they plough', said the visitor Thomas Morer in 1689, because the valleys were so often 'almost useless, on account of frequent bogs and waters in such places.'[3] Yet ground subject to flooding was also cultivated if it was not actually waterlogged, sometimes with catastrophic results: thus at Glen Shira in Argyll around 1700, farmers found themselves washed out of their homes and land, 'catching salmon where they had previously cultivated oats'.[4]

The second disadvantage was climatic. Throughout early modern Europe, the rural economy of marginal and upland areas was severely affected by the prolonged episode of global cooling known as the Little Ice Age.[5] This is best understood as a period between the thirteenth and the mid-nineteenth centuries when the weather became cooler, wetter, and windier than at any time in the last ten thousand years, but it was not itself of uniform and unvarying severity. The fourteenth and earlier fifteenth centuries had very notable years and decades of catastrophic weather characterized by famine and flood, but the period 1500–50 was about as mild as the first half of the twentieth century. Then the nadir of the Little Ice Age is reached between the late sixteenth and the end of the seventeenth centuries with particularly bad episodes in the 1560s, the 1590s, and the

[2] B. M. S. Campbell, 'Benchmarking Medieval Economic Development: England, Wales, Scotland and Ireland, c.1290', *Economic History Review*, 61 (2008), 921.

[3] P. Hume Brown, *Early Travellers in Scotland* (Edinburgh, 1891), 267.

[4] R. A. Dodgshon, 'Coping with Risk: Subsistence Crises in the Scottish Highlands 1600–1800', *Rural History*, 15 (2004), 1–25.

[5] J. Grove, *The Little Ice Age* (London, 1988). This account is to be preferred to the more superficial one by B. Fagan, *The Little Ice Age* (New York, 2000).

1620s. Worst of all was the so-called Maunder Minimum between 1645 and 1715 (temperatures were lowest between 1670 and 1700 in Scotland, with spells of hot dry weather in the 1650s and 1660s). The first half of the eighteenth century saw a relative improvement, but with very bad conditions returning in 1739–41, and on several occasions in the second half of the eighteenth century and the early nineteenth century.

Scotland, a high, wet country on the north-western periphery of Europe, bore the full brunt of this climatic variability, not least because the surface of the North Atlantic between the Faeroes and Iceland became some 5°C colder than it is today. There has been as yet relatively little detailed examination of the Scottish weather itself in the Little Ice Age, but H. H. Lamb, doyen of English climate historians, and more recently, Alastair Dawson, have drawn together most of what is known about Scotland.[6] Though there were warm spells in mid-century, there is much evidence of seventeenth-century cold, with permanent snow fields forming in the Cairngorms, permanent ice on high lochans in Strathglass, and in the 1690s a handful of lost Eskimo hunters who found themselves driven in their kayaks, by encroaching Arctic ice, to Orkney and Aberdeen. Lamb suggests that the temperature over the year would have averaged, in the late seventeenth century, 1.5°–2° colder than in the mid-twentieth century, compared to 0.9° colder in England. Cod, which cannot withstand near-freezing temperatures, left the waters around Shetland. There was also much evidence of storms; as the North Atlantic oscillation was turned on, the cold seas created a steep thermal gradient that bred cyclonic winds greater than most storms of modern times. This led to serious episodes of sandblow in the Hebrides (e.g. Tiree and North Uist), at Culbin in Morayshire, and at Rattray and Forvie in Aberdeenshire—at Culbin a mansion house and nine farms covering perhaps 23 square miles were lost. Contrary to popular belief, this would not all have vanished in a single storm but rather have been the consequence of storms over a long period—the formation of the sandbar that closed off Rattray from the sea and formed the Loch of Strathbeg, for example, was first noted in 1413 but became impassable only in 1720. Nor should the effects of storms on shipping be underestimated—the great December hurricane of 1703 sank so many boats that it contributed significantly to the Scottish economic crisis of 1704, 'one of the least years of trade that has been in this age', when the Bank of Scotland ceased payment.[7]

The most serious impact of the Little Ice Age, however, was on the length of the growing season and thus on the photosynthetic abilities of plants. Lamb suggested that the growing season in northern Europe shortened by three weeks or more in the late Middle Ages, and that in the seventeenth century in England by about five weeks in comparison

[6] A. Dawson, *So Fair and Foul a Day: A History of Scotland's Weather and Climate* (Edinburgh, 2009); H. H. Lamb, *Climate, History and the Modern World* (London, 1982); H. H. Lamb, 'Climate and Landscape in the British Isles', in S. R. J. Woodell, ed., *The English Landscape: Past, Present and Future* (Oxford, 1985), 148–67. See also R. A. Dodgshon, 'The Little Ice Age in the Scottish Highlands and Islands: Documenting its Human Impact', *Scottish Geographical Journal*, 121 (2005), 321–37, and sources cited therein.

[7] J. A. Steers, *The Sea Coast* (London, 1953), 138–42, 146–8; T. C. Smout, *Scottish Trade on the Eve of Union* (Edinburgh, 1963), 254–5.

to the warmer decades of the twentieth century. In the coldest years like 1695 and 1740, when the summer temperatures were about 2°C lower than the twentieth-century norm, and springs and autumns cold as well, 'the growing season was probably shortened by two months or even more'.[8]

Richard Tipping, investigating the area of the Bowmont Valley on the Scottish side of the Cheviot hills, found an increasing tendency to serious flooding in the late seventeenth and early eighteenth century, an increase in wetness on the bog surface, associated with the growth of sphagnum moss especially in 1550–1600 and 1675–1700, and a lowering of snow-bed plant communities to about 1,200 feet (366 metres), 'well within the daily agricultural "round" '.[9] More local studies of this calibre are badly needed.

All this resulted in a series of Scottish crop failures, dearths, and famines, mainly before the start of the eighteenth century. Scholarly examination of sixteenth-century famines has been quite cursory,[10] but those of the seventeenth century, and especially of the 1690s, have been subject to much more detailed examination. Recent work has emphasized the severity, length, and national depth of 'King William's Ill Years', and suggested that the demographic and economic consequences have been underestimated. Locally in Aberdeenshire and very possibly elsewhere in the Highlands and southern uplands the losses could have amounted to a fifth or more of the population.[11] Similarly, the years 1673–6 and 1681–3, which were associated with heavy snow and disastrous loss of sheep and cattle especially in the south-west, also occasioned a surge in burials and emigration on a scale hitherto unappreciated.

The economic devastation in the Highlands in the seventeenth century has been well delineated by R. A. Dodgshon—here holdings were laid waste and payments of rents of necessity remitted or delayed for years, even decades, following bad years, in an area where parish registers do not survive to measure the loss of human life. I. Whyte shows similarly that in the Borders the problem was not just the bad crop years of the 1690s but a period of 'long-term difficulty extending over at least 15 years during which conditions were consistently unfavourable to cattle-rearing'. Extended wet seasons were even worse at a high altitude than at a low one, and they hit livestock in these areas much more than cereals at low altitudes.[12]

[8] Lamb, *Climate, History*, 223ff.

[9] R. Tipping, 'Palaeoecology and Political History: Evaluating Driving Forces in Historic Landscape Change in Southern Scotland', in I. D. Whyte and A. J. L. Winchester, eds., *Society, Landscape and Environment in Upland Britain* (Society for Landscape Studies, sup. ser. 2, 2004), 11–20.

[10] Apart from a comment in Dodgshon, 'Little Ice Age', 238–9, little has appeared since S. G. E. Lythe, *The Economy of Scotland in its European Setting, 1550–1625* (Edinburgh, 1960).

[11] The standard work of M. W. Flinn, ed., *Scottish Population History from the Seventeenth Century to the 1930s* (Cambridge, 1977), has been expanded in particular by R. E. Tyson, 'Famine in Aberdeenshire, 1695–1699: Anatomy of a Crisis', in D. Stevenson, ed., *From Lairds to Louns: Country and Burgh Life in Aberdeen 1600–1800* (Aberdeen, 1986); K. Cullen, C. Whatley, and M. Young, 'King William's Ill Years: New Evidence on the Impact of Scarcity and Harvest Failure During the Crisis of the 1690s in Tayside', *Scottish Historical Review*, 85 (2006), 250–76.

[12] Dodgshon, 'Little Ice Age'; I. Whyte, 'Human Response to Short- and Long-Term Climatic Fluctuations: The Example of Early Scotland', in C. D. Smith and M. Parry, eds., *Consequences of Climatic Change* (Nottingham, 1981), 17–28, quote on 23.

How far holdings were actually abandoned in marginal areas in the Little Ice Age is a disputed question. M. L. Parry's thesis, based on a study of the Lammermuirs, was that the altitudinal range of cultivation retracted appreciably. It is challenged by Tipping, who found no such evidence on the Cheviot edge, while Dodgshon found mixed results in the Highlands and Whyte points out that reduction of cereal acreage and amalgamation of farms is more likely to be the consequence of a run of bad years than actual desertion.[13]

Long-term abandonment of arable land may have depended on more than the weather; the relative movement of prices for animals and oats in the Edinburgh market, for example, may have tempted landlords and farmers to shift towards the former in the Lammermuirs, but might have had little effect in the Cheviots or on Rannoch Moor. On the highland west coast, however, it may have been the sheer force of the storms even more than the cold that forced the abandonment of arable land.

From all this, it might be supposed that the Scots lived on the edge of subsistence in a country only marginally able to support its people. Such was indeed the case over large parts of the Highlands in the seventeenth and eighteenth centuries. Harvest shortfalls occurred (according to some commentators) every fourth or seventh year, though it helped that landowners might then remit or delay grain rents. Even in relatively good seasons there was often a 'hungry gap' in late summer, between the consumption of the last of the stored grain and the onset of a new harvest. At such times the population turned to 'famine foods'—fish if they could get it, shellfish and edible seaweeds gathered from the shore, the blood of cattle tapped from a vein, or the leaves and roots of land plants like nettles and silverweed. The fields of growing oats or bere (a hardy form of barley) abounded in colourful flowers that outsiders considered weeds. Dodgshon has suggested that these were deliberately tolerated by the farmers, because many of them also provided nutrition in the difficult months. The highlanders had a considered strategy for coping with the chronic risk of hunger that beset such marginal areas in these difficult climatic times.[14]

But Scotland, though small, has a highly varied topography, with tracts of relatively fertile land as well as open hill and bog. Outside the Highlands things were less desperate. The country was usually a net exporter of food (fish, meat, and grain), notably so after about 1600. Furthermore, travellers from the outside, however unsympathetic they might be otherwise to the Scots—as so many English were—did not describe the common people of the Lowlands as starving or under-nourished. And when institutions, whether universities or orphanages, left dietary records that can be analyzed, their inmates always turn out to be more than adequately provided with calories.[15] Scottish population increased after the plague-ridden lows of the late Middle Ages, at least to the

[13] M. L. Parry, *Climatic Change, Agriculture and Settlement* (Folkestone, 1978); M. L. Parry, 'Climatic Change and the Agricultural Frontier: A Research Strategy', in T. M. L. Wigley, M. J. Ingram, and G. Farmer, eds., *Climate and History* (Cambridge, 1981), 319–36; Tipping, 'Palaeoecology'; Dodgshon, 'Little Ice Age'; Whyte, 'Human Response'.

[14] Dodgshon, 'Coping with Risk'.

[15] Hume Brown, *Early Travellers*; A. J. Gibson and T. C. Smout, *Prices, Food and Wages in Scotland* (Cambridge, 1995).

early seventeenth century, and urban population increased faster still until by 1700 about one Scot in ten lived in a town. None of this would have been possible unless the lowland countryside generally provided more than enough food for the people.

The problem for Scotland as a whole was not chronic Malthusian pressure of population on resources, but inelastic supply when conditions for photosynthesis suddenly deteriorated, as in the 1590s and 1690s. There were no reserves, and the land could not suddenly produce more food. Though in the lowland countryside people might then also turn to famine foods and in the towns they might try to import grain from the Baltic or elsewhere in the British Isles, such shifts could not prevent national malnutrition or famine in these bad years. Yet such years were comparatively unusual except at the close of the sixteenth and seventeenth centuries.

So the Scottish population maintained itself (and increased) through a land-extensive system of husbandry that utilized and ecologically modified every possible inch of land below the highest mountain tops. Timothy Pont in the 1590s could still write on his draft maps of the Highlands, 'extreem wilderness' and 'many wolfs' in north-west Sutherland, and 'all fyr and other wood with great wilderness' at Rynettin in the Abernethy Forest.[16] But the history of animals suggests a steady erosion of truly wild land where large mammals could survive. Elks probably disappeared in the Iron Age, the auroch probably in the Bronze Age, the bear probably in post-Roman times, the wild boar by the thirteenth century. It has been argued that the lynx hung on into the Middle Ages, and beavers lingered into the sixteenth century near Loch Ness. Wolves were still common in the Highlands in the late Middle Ages, and were hunted by Mary, Queen of Scots in the Forest of Atholl in 1563. Robert Gordon of Straloch later in the 1630s said of Aberdeenshire and Banff that 'dangerous animals, hostile to the herds, are lacking, for wolves are now believed to have almost died out, or if there are still any, they are far away from gentler areas and human cultivation'.[17] By 1684 Robert Sibbald, Geographer Royal, believed them extinct in Scotland, and though there are stories of individuals killed by wolves in Perthshire in 1680, and in Sutherland between 1695 and 1700, there are no later plausible records.[18] The largest land bird in Scotland, the capercaillie, the 'cock of the woods' of the pine forests, survived until around 1780 after being in decline for at least a century (it was later successfully reintroduced).[19] Perhaps in this case climate change played a part, but all these species apart from the auroch survived in Scandinavia and in the wilder mountains of Europe, but not in Scotland.

[16] J. C. Stone, *The Pont Manuscript Maps of Scotland: Sixteenth-Century Origins of a Blaeu Atlas* (Tring, 1989), 30, 51; D. Yalden, *The History of British Mammals* (London, 1999); *The Blaeu Atlas of Scotland* (Edinburgh, 2006), 93.

[17] Yalden, *The History of British Mammals*; *The Blaeu Atlas of Scotland*, 93.

[18] The story of a wolf slain near Findhorn in 1743 after killing two children 'sounds like a fairy story' (wolves do not kill children) and was first related by the Sobieski Stuarts a century later; Yalden, *The History of British Mammals*, 168.

[19] See G. Stevenson's unpublished PhD thesis, Stirling University, 2007.

1750–1950

The most critical developments in the environmental history of Scotland after 1750 related to energy supply. Two forces were at work: a change in the availability of food energy, which enabled more people to be supported from the same area of land, and a revolution in the application of thermal energy, which enabled the concentration of people in cities.

The increasing supply of food energy begins after about 1760; in the central Lowlands, conventional grain yields of oats and barley had by 1800, improved by 200–300 per cent,[20] and in the Highlands the introduction of the potato might enable up to three or four times as many people to live off the same acreage of land as compared to putting it under grain.[21] This had the effect of allowing more people to work at trades and industries divorced from food production, but still, before 1800, using muscle power at hand looms or spinning wheels, or water power at the new cotton- and linen-spinning factories in the countryside.

After 1800, however, it became possible to use Watt's improvements to the steam engine to power rotary motion, so thermal energy was turned into kinetic energy for manufacture and transport. The transition from an organic to an inorganic economy began to gather pace, with enormous consequences. The timing and scale can be judged from the output of Scottish coal mines (Table 1.1), which before the twentieth century were the sole source of inorganic energy available on an industrial scale. The increase, tenfold in the eighteenth century, twentyfold in the nineteenth, was extraordinary.

These developments impacted directly on the growth and redistribution of population, with profound consequences for the natural world, and for the way in which humanity experienced its environment. The reasons for the growth and the details of the distribution are the subject of Chapter 2 below, but population grew fourfold over the period 1750–1950, and the proportion of the Scottish population living in settlements of over five thousand grew from about a fifth to two-thirds of the whole. Partly because of the dual nature of the developments in energy supply (both organic, and inorganic) there was not just a simple shift from country to town. Up until the middle of the nineteenth century both urban and rural populations grew, but thereafter there is only growth in town, and decline in country.

Rural communities lost population for many reasons, but historiographical concentration on the Highland clearances, and more recently on the 'Lowland clearances', has tended to emphasize *force majeur* over voluntary exodus.[22] All over Europe (Scotland

[20] T. M. Devine, *The Transformation of Rural Scotland: Social Change and the Agrarian Economy 1660–1815* (Edinburgh, 1994), 57.

[21] M. W. Flinn, ed., *Scottish Population History from the 17th Century to the 1930s* (Edinburgh, 1977), 427; F. H. A. Aalen, K. Whelan, and M. Stout, *Atlas of the Irish Rural Landscape* (Cork, 1997), 85–8, provides a good summary of the environmental and economic pros and cons of the potato.

[22] Eric Richards, *A History of the Highland Clearances*, 2 vols. (London, 1982–5), is the best account; Devine, *The Transformation of Rural Scotland*, esp. chs. 7 and 8.

Table 1.1 Annual output of coal from Scottish fields (million tons)

1690	0.225	1830–4	3.22
1750	0.7	1860–4	12.0
1775	1.0	1880–4	20.4
1800	2.0	1900–4	31.1
1815	2.5	1910–13	41.3

Source: C. A. Whatley, 'New Light on Nef's Numbers: Coal Mining and the First Phase of Scottish Industrialisation c.1700–1830', in A. J. G. Cummings and T. M. Devine, *Industry, Business and Society in Scotland since 1700* (Edinburgh, 1994), 2–23; M. W. Flinn, *The History of the British Coal Industry, vol. 2, 1700–1830* (1984); R. Church, *The History of the British Coal Industry, vol. 3, 1830–1914* (1986).

was no exception) very remote localities lost their attraction: once, many had seemed in environmental terms the ideal place for life, with a good supply of peat fuel, seaweed, and shell sand for fertilizer, seabirds, fish and rabbits for food, and perhaps free grazing outdoors all year for ponies to supplement human muscle power.[23] There were thousands of such townships in the Highlands, the Hebrides, and the Northern Isles, and though many were forcibly cleared, and some were weakened by voluntary emigration before the laird completed the job, others were deserted entirely voluntarily.

One of these was St Kilda, sixty miles out in the Atlantic but evacuated in 1930 after two thousand years of continuous occupation. In the seventeenth century, it had had a reputation for natural abundance, producing seabird oil, feathers, and flesh, wool, even grain, and supporting perhaps 180 people. By 1930 the population had shrunk to 37 and requested evacuation as an act of charity: what had once seemed a place of natural plenty now seemed to offer nothing but penury and hardship, but it was a society that had changed, not the environment. The seabird colonies benefited from the withdrawal of man. However, the St Kilda house mouse, genetically close to its Norwegian congeners and probably a Viking settler, but one which had in little over a thousand years become a distinctive subspecies (*Mus domesticus muralis*), was still so dependent on people that it became almost immediately extinct.[24]

One main consequence of the growing dominance of inorganic energy was that people flooded in large numbers to the towns and cities, a topic that will be explored in relation to their inhabitants and built environment in Chapter 24. Of the biggest cities, Glasgow with its port and surrounding towns containing nearly two million people by 1901, and Edinburgh with over four hundred thousand, both clearly also had a substantial impact on the environment, though these have not been widely studied.[25] We have

[23] T. C. Smout, *Exploring Environmental History: Selected Essays* (Edinburgh, 2009), ch. 7.

[24] A. Fleming, *St Kilda and the Wider World* (Oxford, 2005); Yalden, *The History of British Mammals*, 221.

[25] But see J. H. Dickson et al., *The Changing Flora of Glasgow: Urban and Rural Plants through the Centuries* (Edinburgh, 2000).

no equivalent yet of William Cronon's work on Chicago to explain the environmental history of a city and its hinterland.[26]

The impact of urban detritus on the surrounding countryside is clearly one major theme in this, and the example of Edinburgh gives an indication of how it developed. Certainly from the late seventeenth century, and perhaps from much earlier, disposal of the town's dung to the farmers nearby was seen as a profitable business, but by the early nineteenth century the latter were forming cartels to oblige the city to moderate its prices. The manure kept agriculture in a ring of Midlothian parishes so well supplied with nitrogen and other nutrients that they no longer needed cattle to supply it, and by this recycling, farms were kept under intensive cropping of wheat and vegetables. Something similar happened on the edge of late eighteenth-century Aberdeen, and nineteenth-century Dundee fertilized the raspberries of the Carse of Gowrie with its sewage. Even quite tiny burghs like Nairn and Pittenweem sold their 'fulzie' to spread on the fields. When the Union canal was built, stretching to Falkirk, Edinburgh waste could reach well into West Lothian.

By the 1840s, however, the growth of population, threefold in Edinburgh since 1750, meant that the problem began to spiral out of control, and the sanitary crisis of the early Victorian city, with its solution, flush toilets that carried the waste away diluted by water into drains, sewers, and ultimately into burns and rivers, brought this tradition of nutrient recycling to a halt. Sewage became waste, not resource. At first, councils were optimistic about continued sales, but as guano and other bagged, dry fertilizers became available to farmers, this was seen to be a false hope. Edinburgh poured her filth into the Water of Leith (it caused disgusting pollution in the harbour), into the River Almond and the Foul Burn, where it irrigated the meadows of a large sewage farm at Craigintinny, which was declared 'a decided financial success'. It was eventually closed in 1922 in response to local complaints about the smell and questions about the wholesomeness of food produced. Thereafter until 1978 all Edinburgh's sewage was poured largely untreated into the sea, through nine outfalls.[27]

The immediate effects of this water pollution, here and in similar cases throughout Scotland where tanneries, bleach and dye works, gas works, paper works, paraffin works, coal washings and similar industrial effluents took effect, was locally catastrophic to the fish life of rivers and streams, notably to salmon and trout. The oyster beds of the Firth of Forth, once perhaps the largest in Britain, had been wiped out through over-fishing, but recovery was made more difficult through pollution. A striking example not of industrial but of agricultural pollution was the effect of reclaiming the peat bogs west of Stirling by throwing the peat into the Forth river, where it floated down to smother sandy beaches and affect the sea bottom as far east as Queensferry.[28]

[26] W. Cronon, *Nature's Metropolis: Chicago and the Great West* (New York, 1991).

[27] For an introduction, see N. Goddard, '"A mine of wealth": The Victorians and the Agricultural Value of Sewage', *Journal of Historical Geography*, 22 (1996), 274–90.

[28] D. S. McLusky, 'Ecology of the Forth Estuary', *Forth Naturalist and Historian*, 3 (1978), 10–23.

Burning fossil fuels caused substantial air pollution, the consequences of which embraced both the human and the natural world. The windy weather of central Scotland might be supposed to have diffused the coal smoke from the streets of Auld Reekie and Glasgow, but the blackened buildings of both cities are proof otherwise. The consequences on the health of the population were dire: in Edwardian Glasgow 'experienced newspaper editors left extra space for obituaries during smog sieges', and a fog there in 1909 was calculated to have caused 1,063 extra deaths. As late as 1950, Glaswegians ordinarily inhaled about two pounds of soot each year. The solution came ultimately in the Clean Air Act of 1956, made easier by the substitution of oil and gas for coal without any great economic sacrifice.[29] Smoke pollution also had serious effects on nature, some species of butterflies becoming extinct in the Central Belt and only starting to return late in the twentieth century; the ancient oak wood in Dalkeith Park to the east of the city is still impoverished in its lichen flora because it lay in the path of the smoke plume from Victorian Edinburgh.

In the uplands, the ecological consequences of modernity have also been impoverishing, but by what mechanism is disputed. Fraser Darling famously described the Highlands as a 'wet desert', a zone of former Caledonian forest stripped of its nutrients by the axe and fire of iron-masters and graziers, and by the 'extractive tooth' of animals that consumed but did not recycle nutrients as the animals were driven off and used elsewhere.[30]

Deforestation is now seen to have been a very long drawn-out process, starting as early as the Neolithic and partly climatic in origin. It was substantially complete before 1500, and by 1750 less than a tenth of Scotland was woodland, much of that being open wood pasture and montane scrub.[31] The most obvious parts of a 'wet desert', the mires and flows of the north and west, have been interpreted by James Fenton as the normal ecological climax under the wetter climate of the last four thousand years.[32] Some of the most forested of the remaining areas, the oak woods of Argyll, actually seem to have benefited from the care that the iron-masters took of their fuel supply, and in a similar way those who exploited the belt of oak woods from Dumbartonshire to Perthshire for tanbark, and those who exploited the Scots pine forests of Strathspey and Deeside, contributed to their long-run conservation by taking good care of a profitable resource.[33]

[29] J. R. McNeill, *Something New Under the Sun: An Environmental History of the Twentieth-Century World* (New York, 2000), 63, 66, 70–1.

[30] F. F. Darling, *Pelican in the Wilderness* (London, 1956), 353. See also his *Natural History in the Highlands and Islands* (London, 1947); *West Highland Survey* (Oxford, 1955), 167–76, and 'Ecology of Land Use in the Highlands and Islands', in D. S. Thomson and I. Grimble, *The Future of the Highlands* (London, 1968).

[31] T. C. Smout, A. R. MacDonald, and F. Watson, *A History of the Native Woodlands of Scotland, 1500–1920* (Edinburgh, 2005); R. Tipping, 'The Form and Fate of Scottish Woodlands', *Proceedings of the Society of Antiquaries of Scotland*, 124 (1994), 1–54.

[32] J. H. C. Fenton, 'A Postulated Natural Origin for the Open Landscape of Upland Scotland', *Plant Ecology and Diversity*, 1 (1) (2008), 115–27. For ripostes from G. Peterken and K. D. Bennett, see *Plant Ecology and Diversity*, 2 (1) (2009), 89–94.

[33] Smout et al., *Native Woodlands*, ch. 9; J. M. Lindsay, 'Charcoal Iron Smelting and its Fuel Supply: The example of Lorn Furnace, Argyllshire, 1753–1876', *Journal of Historical Geography*, 1 (1975), 283–98.

The importance of grazing and burning in the open moors, however, can hardly be doubted. If stock is taken off and no fire is used, the drier heaths rapidly revert to birch, willow, and (in some cases) to Scots pine. Using fire to burn the moors, though, was not new, but had been an ancient tool used by farmers to favour grazing for their traditional mix of animals—small sheep, goats, horses, and in particular black cattle. After 1750, but especially after 1800, it was increasingly used to favour either the new flocks of large Cheviot and blackface sheep or in Victorian times to encourage grouse and deer on sporting moors.

The question therefore resolves into asking what were the ecological impacts on the open hill of the new land-management regimes of sheepmaster and sportsman? Fraser Darling's notion that the sale of sheep actually removed significant quantities of critical nutrients from the land has been hard to verify, and the readiness with which birch and willow return once grazing stops also suggests otherwise. The picture is complicated in that aerial deposition of nitrogen and phosphorous in acid rain from factory smoke began to occur from mid-Victorian times, and had the reverse effect to driving off nitrogen and phosphorus in meat and wool: indeed, acid rain seems likely to have been implicated in the decline of heather moorland and the spread of *Nardus strictus* grassland, especially in the west. It also altered the chemical composition and the microscopic fauna of even the highest and most remote lochans in the Cairngorms, as well as other lochs the length and breadth of Scotland.[34]

A more important agent for ecological change on the moors was probably the way the new sheep grazed. Sheep graze close and tread lightly, their small hard dung sits on the surface and oxidizes in the wind, whereas the old black cattle had grazed high, punctured the ground with their hooves, and their runny dung had got into the sward. The new flocks of sheep could also be summered on the hill in far greater numbers than in the past, when stock had been limited by the acute shortage of winter fodder. Now they could be kept on low ground and fed on turnips or (later) artificial feeding stuffs, so that a much bigger breeding stock could occupy the hill in summer and graze all its resources to the utmost.[35]

People at the time noted an environmental transformation over a generation. The montane scrub, full of berries and insects, was eaten off or burned away to improve the grazing: the old summer shielings (mountain pastures), once patches of flowers and sweet herbs high on the hill, became part of the close uniform mat of heather or of *Nardus* and *Molinia* grassland: lower down people noticed a more general decline. Osgoode Mackenzie called Gairloch in his grandfather's time:

> The most perfect wild Highland glen . . . the braes and wooded hillocks were a perfect jungle of primroses and bluebells and honeysuckle and all sorts of orchids which then quite whitened the ground.[36]

[34] T. C. Smout, *Nature Contested: An Environmental History of Scotland and Northern England, 1600–2000* (Edinburgh, 2000), ch. 5.

[35] Ibid.

[36] O. L. Mackenzie, *A Hundred Years in the Highlands* (Edinburgh, 1988), p. 24.

He made his great artificial garden at Inverewe in Wester Ross to compensate for the great natural garden he had lost. Modern palynological investigation has confirmed contemporary testimony and oral history, and shown a clear decline in floral biodiversity following the arrival of the sheep flocks and the departure of peasant farming.[37]

Scottish landowners, of course, had always hunted game, but sporting estates as a primary land use only began in the early nineteenth century. With the invention of the cartridge and the shotgun they became popular from early Victorian times, and greatly multiplied after 1870 when sheep farming ran into a depression. Most deer forests and grouse moors had therefore already undergone ecological alteration as sheep runs beforehand, and they also used fire as vegetation control. By 1912, 3.6 million acres (and at least 40 per cent of Ross and Cromarty and of Inverness-shire) were deer forest, and what had been a comparatively scarce animal in the well-populated landscape of the eighteenth century became abundant: by 1940 there were reckoned to be 250,000 red deer in the Highlands (but 347,000 by 1990). From early in the nineteenth century they were abundant enough to hinder natural regeneration of pine in Deeside and elsewhere—Fraser Darling reckoned that sixty thousand was the highest population of red deer the land could bear without damage.[38]

Where an estate was used primarily for grouse or salmon, the main ecological impact was in the destruction of raptors. In the case of grouse, this might be rewarded by a short-term surge in the numbers available to shoot, invariably checked by outbreaks of disease and by a longer-term deterioration of habitat where the moors were also grazed by sheep.

The elimination of predators, however, was long-lasting: most of the damage came before 1840, and after around 1870 gamekeepers were mainly engaged in mopping-up operations, as Richard Lovegrove has demonstrated. The records of the fur market held every year in February at Dumfries indicate the scale in the south-west: in 1831, 600 polecat and 226 otter skins were exposed for sale, but none of either by 1869. In the Highlands, the main records are estate vermin returns; there must always be a question where bounties were paid, but owners were not fools and usually demanded the evidence of heads or wings. So we should not dismiss it out of hand when we hear of 143 pine martens and 295 eagles killed at Langwell and Sandside in Sutherland, 1819–26, and similar statistics. Some species of predators became extinct in Scotland as a result (polecat, red kite, osprey, sea eagle) and others were greatly reduced (wild cat, pine marten, otter, hen harrier, golden eagle). It was well into the second half of the twentieth century before there was even limited recovery from this Victorian slaughter.[39]

[37] N. Hanley, D. Tinch, K. Angelopoulis, A. Davies, E. B. Barbier, and F. Watson, 'What Drives Long-Run Biodiversity Change', *Journal of Environmental Economics and Management*, 57 (1) (2009), 5–20.

[38] A. Watson, 'Eighteenth-Century Deer Numbers and Pine Regeneration near Braemar, Scotland', *Biological Conservation*, 25 (1983), 289–305; F. F. Darling, *West Highland Survey* (Oxford, 1955), 178; J. S. Smith, 'Changing Deer Numbers in the Scottish Highlands since 1780', in T. C. Smout, ed., *Scotland since Prehistory: Natural Change and Human Impact* (Aberdeen, 1993), 79–88.

[39] R. Lovegrove, *Silent Fields: The Long Decline of a Nation's Wildlife* (Oxford, 2007), ch. 4.

The Victorians became extremely attached to the beauty and wildness of highland scenery, and thanks to the railway and the improved road network, came to enjoy it not only as sportsmen but also as ramblers, mountaineers, and landscape connoisseurs.[40] But the movement for environmental defence came late and was not as strong as in England. The first bird-protection legislation of 1869 was directed to the defence of seabird colonies and inspired by a campaign in Yorkshire: it was opposed by fishery interests in Scotland. The National Trust was formed to defend the Lake District in 1895. Not until 1931 was there an equivalent body in Scotland. Knowledge of Scottish biodiversity did not lag—naturalists like William McGillivray and John Harvie-Brown were as industrious and sophisticated as any—and one of the leading proto-ecologists was Patrick Geddes, but somehow knowledge and enthusiasm failed to translate into effective defence of the environment.

Indeed, in one area, the scientists failed to blow the whistle soon enough because they did not believe any harm was being done. The Victorians greatly intensified the exploitation of the sea. Of course, since Mesolithic times fishermen had harvested the marine environment in innumerable ingenious ways, ranging from fish traps and shore-based nets and lines to inshore boats all around the coasts and islands. In the eighteenth century more ambitious herring busses copied the Dutch in making lengthier voyages into the North Sea and Atlantic, but mostly the fisheries were neither well capitalized nor ambitious. Though their prosperity ebbed and flowed, it was not due to any depredation on the stock but rather to the natural vagaries of the fish themselves, and to variations in ocean currents and temperatures that drew them nearer to or further away from human grasp.

The first expansion of the herring industry had nothing to do with steam power, but involved a new design of large, decked, wooden sailing boats capable of venturing further out, and usually equally novel cotton nets, thereby vastly increasing the catch: herring landings went up about eightfold between 1810 and 1880. Steam trawlers were introduced from the 1880s and revolutionized the pursuit of white fish. Steam-driven and steel-hulled drifters followed twenty years later, and dominated the herring fishing on the eve of the First World War. By then the herring catch, at over 2 million barrels, was twentyfold what it had been a century earlier.[41]

Though much more research needs to be done in this area, it seems likely that already by the 1880s more herring were being caught than could be replaced by the breeding stock, as some suspected at the time. But Professor W. E. McIntosh of the new Gatty Marine Laboratory at St Andrews, and the leading Scottish fish scientist of his age, declared there was no need to worry, and he received support from no less a figure than Thomas Huxley, who declared the seas inexhaustible.[42] Despite dissent from some, the dominant voice of science was reassuring, and this combined with the boundless enter-

[40] Smout, *Exploring Environmental History*, ch. 2.

[41] J. R. Coull, *The Sea Fisheries of Scotland: A Historical Geography* (Edinburgh, 1996): statistics on p. 105.

[42] D. W. Sims and A. J. Southward, 'Dwindling Fish Numbers Already of Concern in 1883', *Nature*, 439 (9) (2006), 660.

prise of fishermen to prepare the way for emptying the seas of palatable fish. The productivity of the North Sea today is, in these terms, about one-tenth of what it was in 1883.[43]

1950–2010

Scotland at the opening of the twenty-first century was apparently set on the road to environmental disaster. It could hardly be otherwise. It was a small but whole-hearted and generally successful part of a global economy growing out of control at an unprecedented rate. *Something New Under the Sun* was the apt title of John McNeill's book on twentieth-century global environmental history, where he lays out the basic figures: between the 1890s and the 1990s world population grew fourfold, urban population thirteenfold, industrial output fortyfold, energy use sixteenfold, carbon dioxide emissions seventeenfold, cattle population fourfold, pig population ninefold, and marine fish catch thirty-fivefold.[44] Scotland did not experience increases in any of these indicators of anything like such magnitudes, mainly because she started from the higher base of early industrialization: but as part of the developed world we have enjoyed rising levels of consumption, which are the primary forces impelling these indices up and up. Scottish GDP rose by an average of 1.9 per cent per year between 1978 and 2008. New registrations of motor vehicles rose from 100,000 a year in 1963 to 250,000 in 2007, when there were 51 vehicles for every 100 people (the figure for Great Britain was 57). Despite gains in the efficiency of energy use, UK consumption of primary energy rose by about 1 per cent per year between 1980 and 2000: it would have been much the same in Scotland.[45]

The Scottish global footprint (the measure of our resource use in relation to the total of the earth's resources) showed in 2009 that if everyone else lived as we do, we would need more than two earths to survive. Our efforts to reduce the impact, however, are not inconsiderable: by 2007 about a fifth of electricity in Scotland was generated by renewables, half from hydro; this was twice the proportion at the start of the century. But our efforts within Scotland are more than outweighed by the consequences of our growing consumption of goods. Thus greenhouse gas emissions for which we are responsible fell by 13 per cent between 1995 and 2004 if we take into account only those generated within Scotland, but if we take into account those emissions generated by Scots buying manufactured imports like cars and TV sets, they actually rose by 11 per cent over the same period.[46]

[43] Charles Clover, *The End of the Line* (London, 2004), 54.

[44] McNeill, *Something New Under the Sun*.

[45] 'Key Scottish Environment Statistics 2009', www.scotland.gov.uk/Publications/2009/08/26112651/0; P. Warde, *Energy Consumption in England and Wales 1560–2000* (CNR, Italy, 2007).

[46] 'Production of a Time Series of Scotland's Ecological and Greenhouse Gas Footprints', www.scotland.gov.uk/Publications/2009/10/28101012/0.

There is a lack of easily available environmental statistics specific to Scotland going back any distance of time, and it would be a good academic project to compile them. Climate statistics are the exception, with a good series going back to 1857. Scotland, like the rest of the globe, has become warmer over that period, markedly so in the last half-century: it has also become wetter. Rising consumption of inorganic energy across the world appears to be the root cause, but as Alasdair Dawson reminds us, there are other players in climate change (notably sunspot activity). The outcome of rising temperatures acting on the oceans could either lead to Scotland becoming as cold as Labrador or to an accentuation of present warming trends: we simply do not know.[47]

There is, however, an environmental history of Scotland since 1950 to be written apart from this catastrophe movie, and it concerns changes in agriculture, forestry, and fisheries, advances in pollution control, and the rise of an environmental movement. Not everything in our modern period is gloom and doom.

It is, however, all remarkably little studied. Scottish farming in the twentieth century lacks even an economic history, apart from a useful chapter-length study by Ewen Cameron, which stresses that livestock farming accounted for 76–77 per cent of output (by value) in the 1950s and 1960s, falling to about 64 per cent since 1990, and that about two-thirds of the agricultural area in Scotland is composed of rough grazing—'arable farming, though valuable, is a minority pursuit in Scotland'.[48] This sets parameters for rural environmental history, and explains why the consequences of mechanization, chemicalization, and arable-directed subsidy, which in the post-war period wrought such havoc with farmland biodiversity in England generally, had only a more muted impact on Scotland beyond the main grain-growing areas of Angus, Fife, and Lothian, and even there less severely than in East Anglia and other arable counties in England.

Nonetheless, Scottish farming was severely affected by all the crises and trends that moulded British agriculture as a whole in the late twentieth century. One event that has been studied in appropriate detail is the introduction and spread of myxomatosis in Scotland in 1954–5, which was unreservedly welcomed in Scotland (unlike in England) in the hope that a major pest to agriculture, the rabbit, could be eliminated.[49] Similar detailed treatment awaits historians of the epizootic diseases, of bovine spongiform encephalopathy (BSE, or mad cow disease) in 2000, and foot-and-mouth disease in 1967 and 2001, which affected not pests but the most valuable products of Scottish agriculture. Also worth consideration is the environmental history of agricultural pollution in Scotland, from the devastation caused by organochlorine insecticides (DDT and its allies) in the 1950s and 1960s (particularly to peregrine falcons and other raptors at the head of the food chain), to the pollution caused by excessive use of nitrogen fertilizer, notably to the Ythan river in Aberdeenshire and to parts of Fife.

[47] Graphs are conveniently reproduced in 'Key Scottish Environment Statistics in 2005', www.scotland.gov.uk/Publications/2005/08/15135632/56389; Dawson, *So Foul and Fair*, 204, 210–11.

[48] E. A. Cameron, 'The Modernisation of Scottish Agriculture', in T. M. Devine, C. H. Lee, and G. C. Peden, eds., *The Transformation of Scotland: The Economy since 1700* (Edinburgh, 2005), 184–207.

[49] P. Bartrip, 'The Arrival, Spread and Impact of Myxomatosis in Scotland during the 1950s', *Scottish Historical Review*, 88 (2009), 134–53.

The effects of overgrazing by sheep have already been referred to, but the manner in which it was exacerbated by subsidy before and after Britain joined the European Community in 1973 remains under-researched; yet this is reflected in dramatic declines of the characteristic birds of rough grassland, lapwings and curlews. The environmental history of the sporting estate is also largely a blank sheet: two related topics that are frequently in the news are the illegal persecution of raptors and the decline of grouse numbers, both of which have a history spanning much of the twentieth century. Often the latter appears to have been connected, as on the Buccleuch estates in the south of Scotland, with habitat deterioration associated with overgrazing when owners tried to make the most of two sources of income that were perhaps incompatible. Peter Hudson's work on the red grouse has a significant historical dimension utilizing runs of game books back to the nineteenth century, which indicates a way to proceed.[50]

The biggest land-use change in Scotland since 1950 has been afforestation by Sitka spruce and other American conifers: only 6 per cent of the land surface was under wood in 1960, but 17 per cent is afforested today, mostly by conifers. This was a programme initially driven by the forestry commission, but in the later 1970s and early 1980s it was largely executed by private forestry companies, the government agency granting permissions, distributing grants, and setting targets. Some Secretaries of State for Scotland (Willie Ross for one) thought these too low, such were the high and entirely unfulfilled expectations of the economic benefit of forestry to remote areas. The political, administrative, and technological background has been told both in relation to the UK and specifically to Scotland, and the social implications are being explored at the moment in a series of oral history pamphlets.[51] A longer, in-depth, oral history that does justice to the environmental impact of the process is Ruth Tittensor's study of Whitelee Forest in Ayrshire, which stresses the total ecological transformation involved in converting peat bog and open moor into a dense conifer forest. She also demonstrates the disenchantment of the local population when they found that afforestation was not the key to jobs and prosperity, and the loss of access when open country was replaced by an impenetrable and tall barrier of Sitka.[52]

The end of the planting bonanza came in 1986 with the withdrawal of Mrs Thatcher's government from supportive tax breaks for forestry, which had been designed to encourage investment irrespective of where the trees went. The occasion was a dispute over the proposed drainage for planting of the Flow Country in Caithness and Sutherland, which would have obliterated for small returns in timber production one of the last large wilderness areas in Scotland. That this conflict took place at all, and that it had a political outcome favourable to the wilderness, would have been unthinkable earlier. It

[50] P. Hudson, *Grouse in Space and Time* (Fordingbridge, 1992).

[51] D. Foot, 'The Twentieth Century: Forestry Takes Off', in T. C. Smout, ed., *People and Woods in Scotland: A History* (Edinburgh, 2003); J. Tsouvalis, *A Critical Geography of Britain's State Forests* (Oxford, 2000). The pamphlets are the Touchwood History series undertaken by Forestry Commission Scotland with the University of the Highlands and Islands and the University of Aberdeen.

[52] R. Tittensor, *From Peat Bog to Conifer Forest: An Oral History of Whitelee, its Community and Landscape* (Chichester, 2009).

demonstrates the political power of an alliance between ecological science and popular interest in nature conservation, which had Victorian roots but had grown in strength particularly since the 1970s.[53] In a British context such conflicts have been well studied by John Sheail,[54] and in a highland context discussed by several historians and anthropologists.[55] Conflicts between 'use and delight', rural developers or land managers on the one hand, and conservationists and their supporters on the other, were commonplace from 1950 onwards. Early in the twenty-first century they have lessened but not gone away. They do not always have consequences favourable to conservation, as the victory of the American developer Donald Trump demonstrated in 2008 when he gained permission from the Scottish government to destroy the largest mobile dune system left in Scotland in order to build a golf resort. Such battles have been wide-ranging, focusing in the earlier decades particularly on hydroelectric schemes, then on the conservation of habitat, more recently on the placing of wind farms and the reintroduction of lost species like sea eagles and beavers.[56]

These conflicts are often conceptualized as town versus country, or expert versus local knowledge, but the reality is complex. Rural communities have indeed often been hostile to attempts to restrict their development opportunities, but have sometimes rounded on the developers (as with the Lewis windfarm and Harris superquarry in the Western Isles) or have at least failed to support them (as with the Flow Country). And urban populations have been indifferent to some problems, like the siting of waste tips and incinerators beyond their boundaries, or the course of motorways. As Kevin Dunion has shown, local communities have then been left to fight their own corner in a search for environmental justice, with no support from the big conservation charities like the National Trust for Scotland, the Scottish Wildlife Trust, or the RSPB, who fight for nature conservation, and only the relatively impoverished Friends of the Earth as backers. In such cases direct action was often the only realistic course for the objectors (as defenders of their families and communities), and the history of the protests at Greengairs in North Lanarkshire and at Kirknewton in West Lothian, both in the 1990s, read like episodes in radical labour history.[57] Far more work can be done on the structure and social meaning of conflicts over the environment since the end of the Second World War. It is worth noting that the history of biodiversity decline and nature conservation in Scotland has received far more attention than the history of emissions and pollution control, with the history of amenity preservation falling somewhere in between.

[53] Smout, *Exploring Environmental History*, 107–8.

[54] J. Sheail, *Nature in Trust: The History of Nature Conservation in Britain* (Glasgow, 1976); J. Sheail, *An Environmental History of Twentieth-Century Britain* (London, 2002).

[55] Smout, *Exploring Environmental History*; Smout, *Nature Contested*; R. A. Lambert, *Contested Mountains: Nature, Development and Environment in the Cairngorm Region of Scotland, 1880–1980* (Cambridge, 2001); K. V. L. Syse, *From Land Use to Landscape: A Cultural History of Conflict and Consensus in Argyll, 1945–2005* (Acta Humaniora 402, University of Oslo, 2009).

[56] C. Warren, *Managing Scotland's Environment*, 2nd edn. (Edinburgh, 2009); C. Warren and R. V. Birnie, 'Re-Powering Scotland: Windfarms and the "Energy or Environment? Debate"', *Scottish Geographical Journal*, 125 (2009), 97–126.

[57] K. Dunion, *Troublemakers: The Struggle for Environmental Justice in Scotland* (Edinburgh, 2003).

What happens on land is always better studied than what happens invisibly below the surface of the sea. Marine fisheries provide the example of the most profligate of all resource exploitations, not only in Scotland but throughout the globe. The Scottish fisheries entered the second half of the twentieth century with replenished stocks (thanks to the interruption of fishing during the war) but with an industry at low ebb following the interwar collapse of the once-enormous herring sales to the Baltic and Russia. The fleet was rebuilt with the help of government subsidy and a remarkable level of technological application. The period of 1945–75 was critical for the introduction of scientific methods of fishing, both mechanical and electronic. Two modern purse seiners (fishing vessels) with a crew of thirty could in 1986 catch more fish than could a thousand boats with five thousand men in the 1840s, even if they only fished for a quarter of the time of their predecessors.[58] Much of the harvest of the purse seiners was used for fertilizer or animal foodstuffs, whereas earlier the catch had been entirely for human consumption except in times of glut.

The 1970s began with closure of the herring fisheries for several years due to depletion of stock: forty years later it was the cod stocks that were in deep trouble. After entry to the Common Market in 1973, the industry was directed through the European Common Fisheries Policy (CFP). Live-weight landings of demersal fish (cod, haddock, flatfish) dropped from around 300,000 tons in 1982 to about 80,000 tons in 2008, and of pelagic fish (mainly mackerel once the herring had declined), from 260,000 tons in 1988 to 140,000 tons in 2008. The number of regularly employed fishermen halved between 1992 and 2002 as stocks fell, and larger boats were used to catch what was left as cheaply as possible.[59] The CFP presided over a marine disaster where each nation's politicians were swayed more by the mutual suspicion of their fishermen than by the warnings of scientists. Scotland reckoned it got a raw deal in the allocation of catch quotas compared to other fishing nations like Spain, but in the widespread evasion of quotas and landings of 'black fish' the Scots were excelled by none. There is an urgent need for an environmental history of modern European sea-fishing, and no less for an environmental history of the salmon farm, which, since the 1970s, has come to supplement and replace wild-caught fish.

Paradoxically, as the open sea was emptied of commercial fish, and the sea-lochs were filled with floating cages of salmon and their heavily polluting waste, other animals that feed on fish flourished in the second half of the twentieth century as never before. Certainly the end of persecution at their breeding stations was a very important factor: fishermen, who had objected to the first protection of the gannet in the 1870s, a hundred years later objected far more vociferously to the protection of the grey seal, which they saw as a serious competitor.[60] Seals and most of the seabirds, however, feed mainly

[58] I. Sutherland, *From Herring to Seine Net Fishing on the East Coast of Scotland* (Golspie, 1986).

[59] J. R. Coull, A. Fenton, and K. Veitch, *Boats, Fishing and the Sea, a Compendium of Scottish Ethnology*, vol. 4, esp. the chapters by Coull (Edinburgh, 2009); Coull, *The Sea Fisheries of Scotland*; www.scotland.gov.uk/Publications/2009/09/11100225/0.

[60] R. A. Lambert, 'The Grey Seal in Britain: A Twentieth-Century History of a Nature Conservation Success', *Environment and History*, 8 (2002), 449–74.

on sand-eels: the destruction of most of the cod, herring, and mackerel that also fed on the sand-eels may have led to an increase in food for seals and birds.

To the scholar approaching from the outside, environmental history can appear daunting in the range of knowledge that is expected of its practitioners. To take the last example, surely the skills of a fishery expert and an ornithologist are more appropriate than those of an historian in solving the paradox of declining fish numbers contrasted with increasing seal and bird numbers? The scientists are certainly indispensable here, yet it is the historian who can give the right time perspective and who is best equipped to research how human attitudes towards birds and seals have changed. Very frequently, and probably in this case, a partnership between scientists and historians will produce the best environmental history. Institutional obstructions to such partnerships exist, but they are there to be overcome. There are other cases, though, where an historian could be comfortable working entirely alone with no more than the usual background knowledge of the technicalities of his subject: thus an urgently needed history of the Scottish Environmental Protection Agency and its predecessors back to the inspectorate of the alkali industry in the nineteenth century would not need a pollution scientist as partner. The field of environmental history is so wide, and its questions so far-ranging and intriguing, that there is ample room both for the associational spirit and for the lone practitioner.

Further Reading

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CHAPTER 2

THE DEMOGRAPHIC FACTOR

MICHAEL ANDERSON

As Christopher Smout shows in Chapter 1, for its size, Scotland has a very diverse natural environment. Historically, there have also been major regional differences in landholding practices, industrial development, and popular and religious culture. All these produced a highly differentiated spatial demography; and this means that we always need to go below the national level if we are fully to understand Scottish population change and its implications for the people of Scotland.

The Pre-Census Period

In practice, however, we have extremely little hard evidence about regional or even national populations before 1801. Robust information on births, marriages, and deaths is only available from 1855. Migration remains a problem even in 2010.

Scotland's first official census, in 1801, showed a national population of somewhat over 1.6 million, with figures for every civil parish. In spite of some problems with data collection, the results for most places are probably accurate for the civilian population to within a few per cent.

By contrast, though widely used by modern historians, Alexander Webster's estimates for 1755 require considerable caution, especially at the local level.[1] Webster did challenge some figures from parish ministers, but many were only estimates. Frequently, ministers only provided rough guesses, especially in the towns, whereas others gave numbers they considered eligible for 'examination' on the Catechism, plus the age at which they treated children as 'examinable'. Webster implies that he estimated children under the examinable age using a standard formula, derived from Halley's Breslau life-table. But Scotland

[1] A late copy of Webster's *Account* is reproduced in James Kyd, *Scottish Population Statistics* (Edinburgh, 1975).

was not Breslau, and variations in mortality and migration meant that age structures between parishes varied widely, so Webster's method could only produce very approximate results at the local level even if he applied it systematically. But in fact he did not, instead frequently adjusting many of the ministers' figures, presumably to make the results look more plausible by removing obvious roundings to zero. One result is that well over a quarter of his parish totals have final two digits in the range '89' to '99', two and a half times the randomly expected number. But the surviving returns from ministers suggest no such pattern in what was sent in.[2]

Use of Webster's parish figures thus requires a strong degree of scepticism, especially in towns and the Highlands, though, at larger levels of aggregation, some errors will cancel out. The most likely conclusion is that Scotland's 1755 population fell somewhere between 1.15 and 1.35 million, possibly towards the higher figure—but, even at 1.2 million, Scotland's growth to 1801 would have been significantly slower than England's.

Most population estimates for earlier dates are largely guesswork.[3] Robert Tyson suggests a total of 1,234,575 for 1691.[4] But this derives from incomplete counts of hearths from tax returns, adjusted by regionally varied estimates of the number of hearths per household, plus data on mean household size by county from a century later. Given these levels of uncertainty, we should not even try to guess more than very rough national population figures before 1801, but focus on what we can infer, from contemporary commentary or data on related matters, about the likely impact of changing opportunities and pressures on people's experienced demographic lives.

On this basis, what might we suggest? Older work mostly assumed that variation in mortality was the key source of demographic change, in a high-pressure world of elevated birth and death rates. So, for example, it was suggested that inoculation against smallpox provided significant stimulus to population growth in the later eighteenth century. Unfortunately, the timing and extent of inoculation makes this unlikely except in the Highlands and the south-west (where there is also supporting contemporary comment).

Above all, however, great stress was laid on fluctuations in death rates, based on contemporary comment and, for the later seventeenth and eighteenth centuries, on counts from parish registers.[5] These suggested that recovery from devastating disease and famine crises of the early fourteenth century was delayed by recurrent outbreaks of bubonic plague before 1500, implying a national population in 1500 of 500,000 to 700,000. Plague and crop failure recurred frequently throughout the sixteenth century, but the number

[2] Michael Anderson, 'Guesses, Estimates and Adjustments: Webster's 1755 "census" of Scotland Revisited Again', *Journal of Scottish Historical Studies*, 31, i (2011), 26–45.

[3] Michael Flinn et al., *Scottish Population History from the 17th Century to the 1930s* (Cambridge, 1977), 242.

[4] Robert Tyson, 'Contrasting Regimes: Population Growth in Ireland and Scotland during the Eighteenth Century', in S. J. Connolly et al., *Conflict, Identity and Economic Development: Ireland and Scotland, 1600–1939* (Preston, 1995), 64–6.

[5] Flinn et al., *Scottish Population History* is probably the clearest exponent of the mortality-driven position; for a more subtle view, see R. A. Houston, 'The Demographic Regime', in T. M. Devine and Rosalind Mitchison, *People and Society in Scotland, 1760–1830* (Edinburgh, 1988), 17.

of very high food-price years, plus increasing action against vagabonds, hint that the population rose significantly by 1600, perhaps even to one million, but that it probably grew little if at all thereafter.

Nor, in Scotland, did mass mortality linked to harvest failure end after 1600, as it largely did in England, except for the north-west in the 1620s. Seventeen Scottish dearth years in the seventeenth century included major mortality crises in 1623–4, 1650–1, 1673–6, 1681–3, and, above all, in the 1690s, when probably at least a tenth of Scotland's population died—but perhaps as much as a quarter in inland areas of the north-east and much of the western and northern Highlands. Later still, deaths from hunger-related disease were reported in the 1740s and the 1790s, especially in the Northern Isles and the northernmost mainland.[6] Elsewhere, improved market integration, better transport, and proactive steps by local landlords or Poor Law authorities reduced hunger migration and its consequential deaths from famine-related disease (though we still need further research on these developments, from the 1690s onwards).[7]

Locally, before 1700, short-term crises could be severe, a key factor in the constant insecurity of everyday life at this period. In really bad crises, a third of a parish's population could die within a few months. However, most demographers now believe that the medium- and long-term impact of crises on population trends anywhere in north-western Europe was less significant. The only exceptions were crises of exceptional severity (as in the fifteenth century, or in Aberdeenshire in the 1690s, where some parishes took several decades to recover[8]), or if crises followed each other closely clustered in time (as happened in Scotland in the civil-war years).

The main reason for rapid recovery was that most areas in north-western Europe had many young adults quite literally 'waiting' for an opportunity to marry, through land, or another regular source of income, becoming available. When the opportunity arose, because most new households were headed by younger couples, fertility was also boosted. In Scotland, delayed marriage seems to have been normal in lowland farming areas before 1800, with an average age at first marriage for women in their later twenties, and perhaps one in ten not marrying in their fertile years. Scottish Lowlands thus had capacity for rapid recovery after a mortality surge; the same was true in the north-west and the islands, though marriage ages were often rather lower here.[9] Lowland populations

[6] For more on this, see ch. 1 above.

[7] Looking ahead, this same set of market, transport, and welfare measures, together with the greater concentration of population near the coasts and lower population densities, saved north-west Scotland from Irish-level mortality when the potato crop failed in the 1840s.

[8] Robert Tyson, 'The Population History of Aberdeenshire, 1695–1755: A New Approach', *Northern Scotland*, 6 (1985), 113–31. Karen Cullen et al., 'King William's Ill Years: New Evidence on the Impact of Scarcity and Harvest Failure during the Crisis of the 1690s in Tayside', *Scottish Historical Review*, 85 (2006), 250–76.

[9] R. A. Houston, 'Age at Marriage of Scottish women, c.1660–1770', *Local Population Studies*, 43 (1989), 63–6; Michael Anderson, 'Population Growth and Population Regulation in Nineteenth-Century Rural Scotland', in Tommy Bengstsson and Osamu Saito, *Population and Economy* (Oxford, 2000), 122–4.

in particular were also highly mobile, so mortality-induced gaps in one community were readily filled by in-migrants from elsewhere.[10]

Most of the time, these processes restricted population growth. For example, Tyson[11] shows that, between 1755 and 1841, many landlords in the north-east and central Highlands not only limited additional household formation by prohibiting subdivision of holdings, but consolidated holdings when the opportunity came up, shifting from mixed farming to stock rearing. In one parish with reasonably robust data (Rothiemay in Banffshire), mean marriage ages rose by over two years for women and four years for men from 1750 to 1800 and 1801 to 1851. In the Western Isles, a similar policy restricted population growth on Coll to less than 10 per cent between 1755 and 1831.

But elsewhere on the west coast and in the islands, restrictions were widely relaxed, especially in the later eighteenth century, as landlords encouraged or even forced holding subdivision to encourage new marriages and in-migration on the coast. The extreme was Tiree, where these policies were reflected, as early as 1779, in a mean female marriage age around 22 and over a quarter of women marrying before they were 20. In 1799, as the kelp boom took off, larger farms were also subdivided and in some areas in-migration was actively encouraged. Population roughly trebled between 1755 and 1831, and subdivision only ceased in the 1840s. Similar processes were widespread around the Argyll coast and the islands at least through to 1815.[12]

However, the consequences were severe when the market for kelp collapsed after 1815, and fishing became increasingly unreliable. In many parishes, populations had only been marginally viable at much lower levels even before the kelp-related boom. Only the potato had made the new numbers sustainable under any contemporary agrarian regime—and, when the potato crop failed dramatically in the 1840s, massive population decline in parishes like Tiree was inevitable, whatever landlords might have sought to do.[13] But, beyond this, ever since the mid-eighteenth century in particular, some landlords in a growing number of areas of Scotland had been actively reducing even populations with more robust means of subsistence in favour of larger- scale arable or livestock farming. The 'Highland clearances' of the first decades of the nineteenth century were merely one part of a longer and much more widespread trend.[14]

Tyson also notes a very contrasting picture, illustrated by a quote in the *New Statistical Account* from the minister of the fishing parish of Rathven in Banffshire; this also has parallels right across western Europe in this period. 'At eighteen years of age they become men, and, whenever they acquire the share of a boat, they marry, as it is a maxim among

[10] Ian Whyte, 'Population Movement in Early Modern Scotland', in R. A. Houston and I. D. Whyte, *Scottish Society 1500–1800* (Cambridge, 1989), 37–58.

[11] Robert Tyson, 'Landlord Policies and Population Change in North-East Scotland and the Western Isles 1755–1841', *Northern Scotland*, 19 (1999), 63–74.

[12] Eric Richards, *A History of the Highland Clearances: Agrarian Transformation and the Evictions 1746–1886* (London, 1982), 128–34.

[13] Ibid.; Flinn et al., *Scottish Population History*, 34, 421–30.

[14] For more detail, see ch. 6 below.

them "that no man can be a fisher, and want a wife." '[15] The result, it was claimed, was almost universal male marriage, and women typically marrying between 18 and 22. Elsewhere in western Europe, expansion of employment in low capital-base craft and manufacturing activity and in mining created similar opportunities for couples to establish their own homes at earlier ages than in the past, thus stimulating local population growth. New opportunities also encouraged in-migration from rural areas where marriage chances were more limited. The differential regional population trends of the years 1755 to 1851, to be discussed further below, are entirely consistent with this kind of behaviour also occurring in Scotland.

It seems therefore that, as in England and many other countries, opportunities for marriage were a major control over Scottish demographic change in this period. However, in the decades around 1800 there is no sign in Scotland of the significant fall and subsequent rise in mean marriage age that was widespread in England. Given the similar economic and social changes in the two countries by this time, this is surprising, and further research is needed if we are to understand it. However, two areas that were important in the nineteenth century may also have been at work earlier.

First, in early nineteenth-century lowland Scotland, a much higher proportion of agricultural labour than in England was accommodated by farmers, and contracted for at least six months at a time—and there were fewer sites for squatters to settle; the result was greater control over how many single or married people could reside in each parish. Second, the Poor Law in England, especially from the later eighteenth century until 1834, supported casual labourers and their families in their own homes when work was not available, and even subsidized families on the basis of numbers of children. In Scotland, by the mid-nineteenth century, no significant Poor Law support was provided to indigent workers and their families; this was arguably an important risk factor restraining Scottish nuptiality at this time. More work is needed to see whether this also applied in really bad times in Scotland in the eighteenth century, but Poor Law support in many parishes was anyway much less effective at that time.[16]

Finally, what about migration?[17] Even in the medieval period, Scots were renowned in Europe as mobile people. From the sixteenth to the mid-nineteenth centuries at least, much internal migration was of younger men and women moving through a series of short hirings between rural communities as farm workers, or spending time in trading or manufacturing activities, especially in the towns. These needed migrants to grow—and in this period, especially in the larger ones, to counteract their high death rates (though up to the mid-eighteenth century the overall demographic impact of urban centres was limited in Scotland compared with many other parts of Europe, with less than 2 per cent of the population living in towns of more than 10,000 people in 1500 and

[15] *New Statistical Account*, vol. 13, 257.

[16] Anderson, 'Population Growth', 120–1; T. M. Devine, 'Urbanisation', in Devine and Mitchison, *People and Society*, 45–7.

[17] The paragraphs that follow rely heavily on Ian Whyte, *Migration and Society in Britain, 1550–1830* (Basingstoke, 2000). On emigration, see also ch. 16 below.

only about 9 per cent in 1750—thereafter was a different story).[18] Until the early eighteenth century, there were also many famine migrants and vagrants in bad times, large numbers of whom died (mostly from disease) as a result. Later, as industrialization and agricultural improvement accelerated, with an accompanying rise or decline of local opportunities in farming, fishing, or manufacturing, growing numbers of families moved in response, which was reflected, for example, in the widespread falls in population in many north-east parishes in the later eighteenth century.

Externally, especially through the sixteenth and seventeenth centuries, many Scots traders went to parts of Continental Europe (more than went to England). Scots also formed major components of continental mercenary armies (over 50,000 on one estimate in the 1620s and 1630s alone)—and many of these never returned. And there were major outflows to Ulster at various points in the seventeenth century (and notably in the 1690s). Overall, probably about 200,000 Scots left the country in the seventeenth century, enough, at an average of two per hundred population per year, to provide an important supplementary safety valve against excessive population pressure.[19]

Overall in the eighteenth century, net emigration was lower as a proportion of national population, not least because, by its end, there was growing net inflow from Ireland, especially into the south-west and the west Central Belt.[20] Emigration probably reduced population growth between 1750 and 1800 by less than 5 per cent, but regionally there was real impact in parts of the north-west, with perhaps 20,000 emigrants to North America between 1765 and 1815 coming from the Highlands, where the average population was well under 200,000.[21] Even more than earlier, in this period many men also moved or were moved out of Scotland as soldiers (up to a fifth of adult males in some areas of the north-west by 1805), as pressed sailors, and, especially in the Northern Isles, in fishing and whaling—and, in all these categories, many died abroad.

Contrasting Patterns of Population Change, 1801–2001

After 1800, information on key aspects of Scotland's population becomes more robust. National populations from the decennial censuses, and changes compared with other parts of Britain and Ireland, are shown in Table 2.1. Census data for 2011 are not available at the time of writing and, given the many uncertainties about the pattern and causes of Scottish demographic change after 2001, discussion of the years 2001–10 is here confined to a short final section of this chapter.

[18] Jan de Vries, *European Urbanisation 1500–1800* (London, 1984), 39, 45, 46; see also ch. 24.

[19] For more detail on numbers and destinations of emigrants in this period see chs. 7 and 16.

[20] More detail on this period is covered in chs. 26 and 27.

[21] Marjorie Harper, 'Emigration from the Highlands and Islands since 1750', in Michael Lynch, *The Oxford Companion to Scottish History* (Oxford, 2001), 230.

Table 2.1 Scotland's population, and decadal rates of change for the components of Great Britain and Ireland, 1801–2001

Census	Scottish population (thousands)	Per cent change over previous 'census'*			
		Scotland	England	Wales	Ireland
1801	1608				
1811	1806	12.3	14.2	14.7	
1821	2092	15.8	18.1	18.0	
1831	2364	13.0	16.0	14.0	14.2
1841	2620	10.8	14.4	15.5	5.3
1851	2889	10.2	12.8	11.3	–19.9
1861	3062	6.0	13.3	11.4	–12.9
1871	3360	9.7	13.5	9.3	–6.7
1881	3736	11.2	12.1	10.9	–4.4
1891	4026	7.8	13.0	12.7	–9.1
1901	4472	11.1	12.1	13.6	–5.2
1911	4761	6.5	10.3	20.4	–1.5
1921	4882	2.5	4.7	9.7	
1931	4843	–0.8	6.0	–2.4	
1939	5007	3.4	4.7	–5.4	
1951	5096	1.8	5.3	6.0	
1961	5179	1.6	5.6	1.7	0.3
1971	5229	1.0	5.9	3.3	3.9
1981	5180	–0.9	1.7	3.0	10.5
1991	5083	–1.9	2.3	2.1	2.8
2001	5064	–0.4	2.7	1.0	7.5

* There was no 1941 census, but we have population counts for 29 September 1939. Faster Scottish growth between 1931 and 1939 is largely due to the low emigration of these years.

Compared with England, the Scottish population grew more slowly in every decade between 1801 and 2001. Scottish growth was a little over threefold, England's was nearly sixfold, and Welsh nearly fivefold; only in the 1870s and 1890s did Scottish growth approach England's. From 1921 to 2001, Scotland's population fell in four decades; England's lowest growth was a 1.7 per cent rise in the 1970s. Wales matched Scottish rates in the later nineteenth century, grew rapidly in the 1900s, fell in the interwar period, but rose much faster after 1951. Ireland's population boomed from the mid-eighteenth century until 1841, but the failure of potato crops initiated nearly a century of decline, followed by modest growth, though in the 1970s and 1990s Ireland grew much faster than any country of Great Britain. Even compared with English regions with a large concentration of staple industries, Scotland's growth was in general slower, except marginally for the English North and North-east in the first decades after 1945.

In a wider European context, Scotland's sluggish performance is even more striking. Up to 1911, Scotland's growth, though markedly slower than England's, was much faster than France, and not very different from Belgium, Switzerland, or Sweden, but significantly slower than Denmark, Norway, the Netherlands, or Germany. But, after 1921, Scotland's relative demographic depression dramatically stands out. No significant Western European country, regardless of size, saw decades of actual population decline in the inter-war period. Scottish population rose by only 2 per cent between 1921 and 1951, while that of Belgium, Sweden, Denmark, and Norway increased by between 17 and 41 per cent. The last half of the century was relatively even worse. Scotland's population in 2001 was about 32,000 less than in 1951; everywhere else in north-western Europe, populations grew, in some cases rapidly. The fastest growth was in the Netherlands (over 50 per cent), but Sweden, Norway, and Denmark all exceeded 20 per cent.

Just why Scotland's population was so relatively sluggish for so long cries out for further research, but part of the answer is that there were multiple Scotlands. Published census material at parish level is available from 1801. There are awkward boundary changes in the 1890s, and problems as urban areas extended their boundaries and from local-authority reorganizations in 1975 and 1996. Nevertheless, we can reconstruct six reasonably consistent regional groups; the results are shown in Figure 2.1.

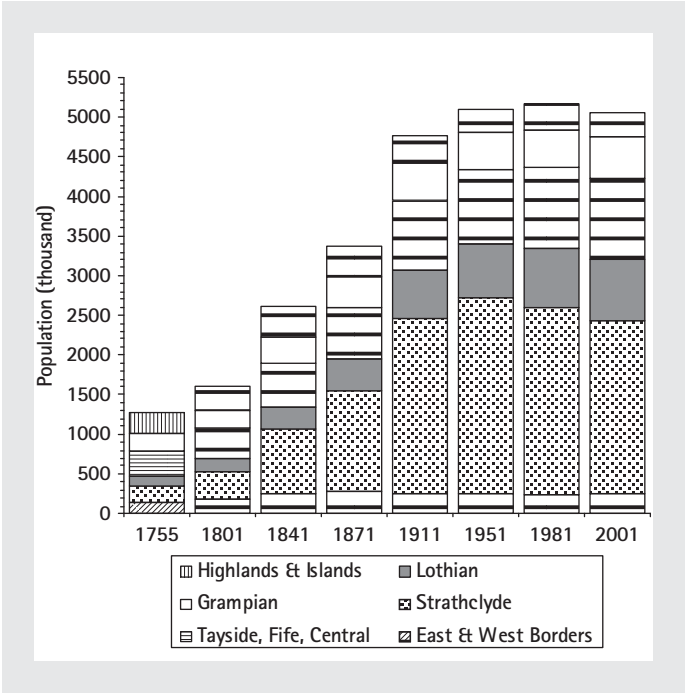


FIGURE 2.1 Populations of the regional groupings of Scotland, 1755 to 2001 (in thousands).

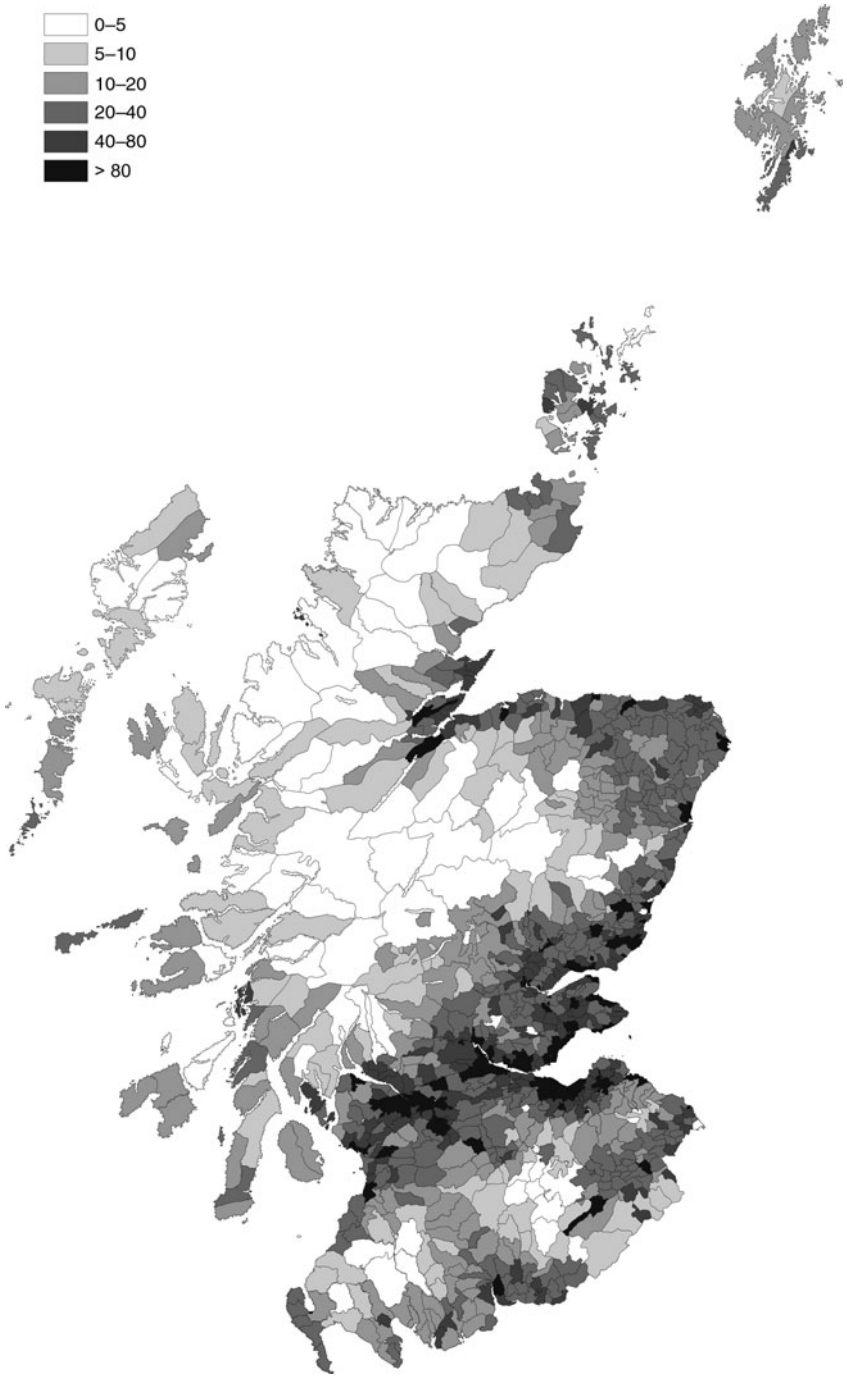
First, note the huge changes in the *relative* shares of the different regions of Scotland. For 1755, Webster's figures suggest that the Highlands and Islands had over a fifth of Scotland's population, at a time when Strathclyde (less Argyll, which is here treated as Highland) held only 15 per cent, and the Lothians 10 per cent. Thereafter, for two centuries, the developing industrial and commercial activities of the west of Scotland meant that Strathclyde's share rose almost continuously, peaking in 1961 at nearly 49 per cent, before falling back below 43 per cent by 2001 (the fall in Glasgow was even larger). In 2001, by contrast, the Highlands and Islands held just 6 per cent of the population (and the East and West Borders together a mere 5 per cent—compared with nearly 12 per cent in Webster's figures).

But if we look at absolute numbers, a rather different picture emerges. The 2001 Highlands and Islands population was around 315,000, up from 298,000 in 1951 and above the 306,000 of 1801 (even if Inverness is excluded, the 1801 figure is still around 297,000 and that for 2001 about 271,000). The Borders, with a population almost identical to that of 1841, had over 100,000 more people in 2001 than in Webster's estimates for 1755. Strathclyde's population in 2001 was eleven times that of 1755 and more than six times that of 1801, but was 15 per cent down on its 1961 peak. No other major manufacturing region in Europe experienced anything approaching this scale of loss, and Strathclyde is a principal cause of Scotland's comparative demographic weakness in the twentieth century.

But even these figures conceal subtler changes in Scotland's population. In 2001 most Scots were spatially highly concentrated, with 63 per cent living in parishes with a population density above five hundred persons per square kilometre (km^2); these parishes occupied just 3.3 per cent of the land area, mostly in the Central Belt or around Aberdeen, Perth, or Inverness.[22] At the other extreme, 46 per cent of the land area consisted of parishes with fewer than five people per km^2, holding just 1.7 per cent of the population. And in these sparsely populated parishes, excepting some coastal crofting areas, most residents were concentrated into villages or other grouped settlements, thus further boosting the image of the remaining 'deserted lands'.

But, as Map 2.1 suggests, most of these parishes had always been sparsely settled, the only major exceptions being some island parishes and parts of Argyll and Caithness—but even these areas were only settled at a fraction of the density of most of rural Ireland in the years before the famine (for example, even Tiree, which was among the most crowded, had a density in 1841 that was only a third of the average for the County of Cork). Except for a few fishing centres, there was hardly a mainland parish on the north-west coast of Scotland between Fort William and Thurso, and also deep into western

[22] Post-1800 parish data used in this chapter come from the decennial censuses. Data up to 1951 were originally collated by Donald Morse and used, for example, in Michael Anderson and Donald Morse, 'High Fertility, High Emigration, Low Nuptiality: Adjustment Processes in Scotland's Demographic Experience, 1861–1914, Part 1', *Population Studies*, 47 (1993), 5–25. These data have now been thoroughly rechecked and data to 2001 have been added. I am very grateful to Corinne Roughley for her work on the maps.



MAP 2.1 Population density (persons per km^2), Scottish parishes, 1801.

Perth and Aberdeenshire, where population density in 1801 exceeded ten per km^2; mostly, the average density was much less. Durness in Sutherland where just 1,208 people were settled on 570 km^2, had an average density of 2.1 people (less than half of a household) per km^2. These low densities arose because, even *within* highland parishes, most areas were largely empty excepting only parts of the most fertile glens. At the other extreme, the principal clusters of population by 1801 were already located in the Central Belt, up the east coast, around the Moray Firth, and along the coast of Dumfries and Galloway. Two centuries of spatial change, therefore, principally made sparsely populated parishes sparser, and densely populated areas denser—and the same process was also at work within most parishes, as noted above.

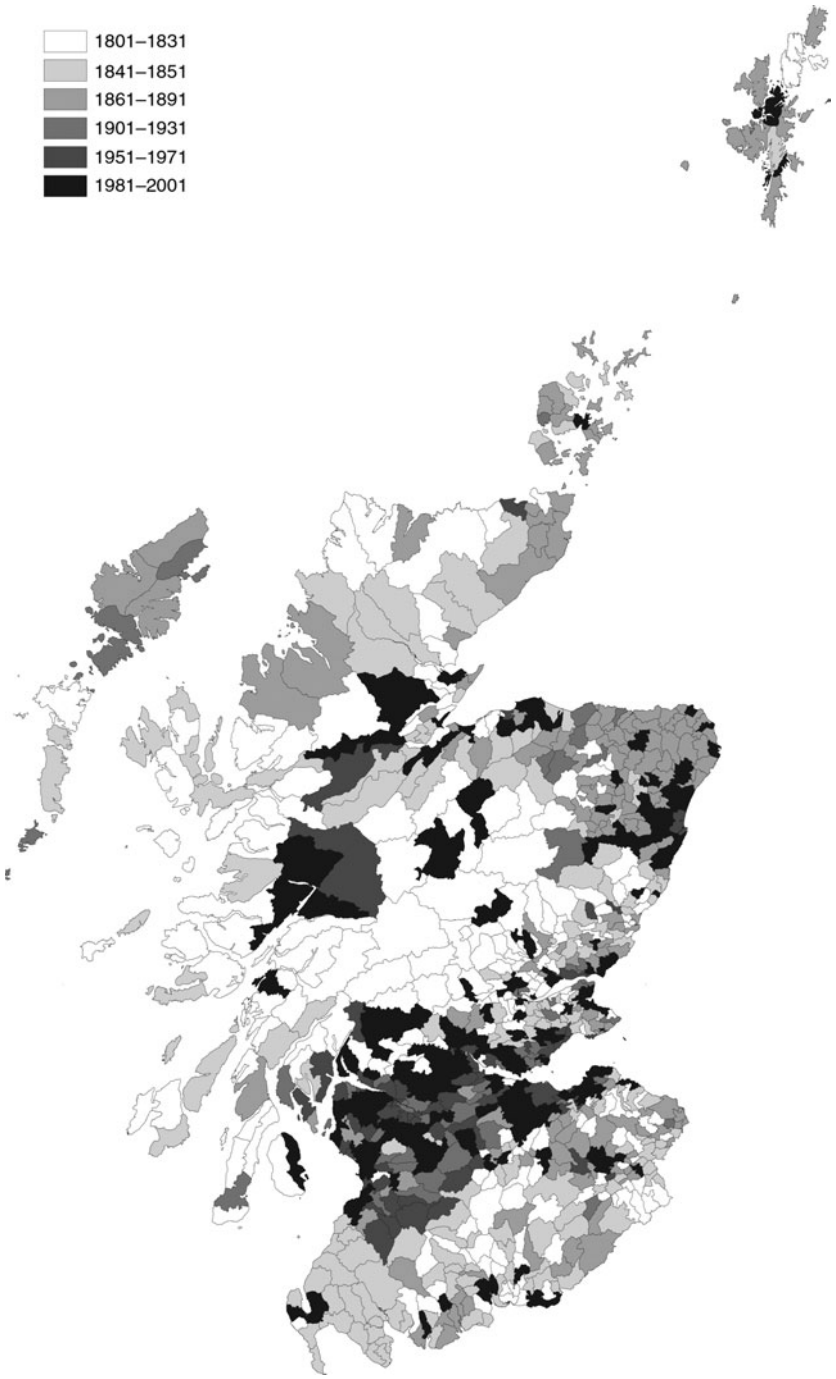
But the process of population decline in the now sparsely settled areas was not homogeneous. Map 2.2 shows the widely varying dates, even between neighbouring rural areas, when parish populations peaked.

Some explanations for differences are well studied: the contrast between Argyll and much of Perthshire, where landowners were consolidating holdings (initially mainly for cattle) in the later eighteenth century, compared with eastern Aberdeenshire, where new settlement was actively encouraged for small cattle-breeding farms even in the 1870s; or the mixture of active clearance and flight from deprivation in the Uists, Skye, and Sutherland before 1851, compared with Harris and Lewis, where prosperity from fishing partly backed by landlord investment delayed most decline until the later nineteenth century; or the contrasting fates of smaller and larger east-coast fishing ports, as processing concentrated in those with the largest fleets and best communications.[23] But under-researched puzzles remain: for example, why did almost every parish in Wigtown peak in 1851 (it was more than just an Irish effect); why was decline later in north Berwickshire than in eastern East Lothian (was it because of the water-powered industry in the Whiteadder valley?); and what population effects did turnpikes or railways have?

Map 2.2 also shows that many of the industrial, mining, or commercial parishes that had expanded so rapidly between the later eighteenth century and the First World War, then subsequently peaked long before 1971.[24] This included a swathe of mining districts across south Ayrshire, and, as their mining, shipbuilding, iron and steel and engineering industries went into decline, especially after 1921, most of the parishes north-west and south-east of Glasgow, including the city itself. Less dramatic falls can also be observed after 1951 in the city cores (though not the suburbs) of Edinburgh, Aberdeen, and Dundee.

[23] See also ch. 6 below.

[24] Devine, 'Urbanisation', 27–52; R. J. Morris, 'Urbanisation and Scotland', in W. Hamish Fraser and R. J. Morris, eds., *People and Society in Scotland 1830–1914* (Edinburgh, 1990), 73–102.



MAP 2.2 Peak population decades for Scottish Civil Parishes, 1801–2000.

Fertility, Mortality, and Migration: The Processes of Population Change, 1801–2001

How do we understand all this? Before we can link civil registration to the censuses after 1861, it is difficult to be precise about the causes of Scotland's sluggish demographic change. Very high urban mortality from the late 1820s, as rates of town and city growth unparalleled in Europe overwhelmed housing and sanitary infrastructure,[25] was a factor, but more detailed local studies outside the cities are needed to establish its national importance. In spite of the major Irish inflow, net emigration was high in the 1830s and 1840s, as manufacturing experienced the first major trade-cycle depressions, and also in the 1850s (when it spread right across the country). But why Scotland fared much worse than England is still not clear.

After 1861, we can explore for each decade the precise net interplay between numbers of births, numbers of deaths, and net migration. The results are shown in Figure 2.2.

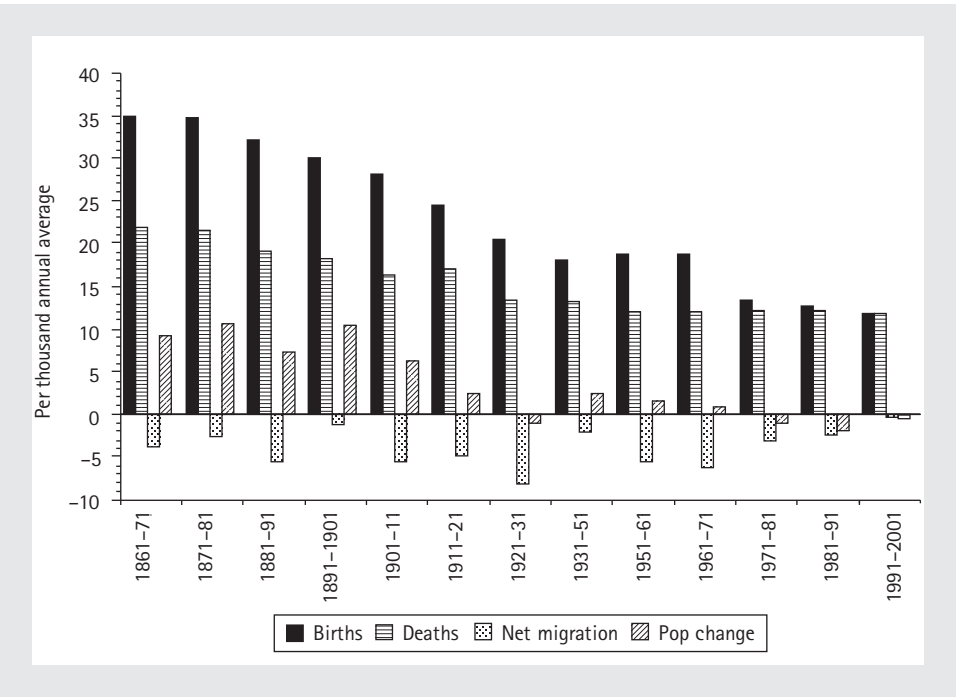


FIGURE 2.2 Components of Scottish population change, 1861–2001.

[25] See ch. 24 below.

These data have been explored extensively elsewhere.[26] For present purposes note: the steady decline in natural increase of population from the 1870s to the 1930s, as the birth rate fell faster than the death rate; the stabilizing death rate from the 1950s, as improved survival was offset by an ageing population; and the boom and then collapse of the birth rate, which eventually pushed Scotland into negative natural increase in the last decade of the twentieth century.

In many ways, these trends roughly parallel those of England and Wales, and, indeed, many other parts of Western Europe. Marital fertility began to decline significantly in many parts of most countries from the 1860s at the latest, for reasons that we still do not fully understand. Scotland's pattern is fairly typical: a shift to small families, with their huge implications for living standards and the lives of women, was widely occurring by 1911 among professional middle-class and textile workers (including a growing number of very small families of zero and one), while many large families persisted until the 1950s in mining, heavy industry, and crofting areas—though early fertility decline in farming areas such as East Lothian (where many women worked in the fields) appears in comparative terms unusual.[27]

But two features are internationally special about Scotland's demography over the 150 years to 2001: first, the rate of net emigration (including movement to other parts of the UK); and, second, the substantial variability of birth, marriage, death, and migration rates in different parts of the country.

In the 1880s and the first decade of the twentieth century, net out-migration exceeded 5 per cent of the population and remained high right up to the First World War; between 1904 and 1913, more than 600,000 people left the country (annually more than 1 per cent of population in six of these years and more men than were killed in the First World War). Overall, between 1830 and 1914 about two million people left Scotland for overseas destinations and probably roughly similar numbers went to the rest of the UK, making Scottish emigration per head second in Europe after Ireland. In the 1920s net out-migration exceeded 8 per cent of the population and was the principal factor producing real population decline; some 400,000 people (net) left Scotland in these years, mostly, after the introduction of severe restrictions on migration to the United States in 1923, to the rest of the UK. Net outflow was high again in the 1950s (around 5.5 per cent) and the 1960s (around 6.3 per cent), in total some 600,000 people, about half going overseas. Continued net out-migration at these levels would have produced massive population decline after 1970, but, as natural increase fell, net out-migration declined, to just 2.9 per cent in the 1970s, 2.4 per cent in the 1980s, and 0.3 per cent in the 1990s.[28]

[26] Flinn et al., *Scottish Population History*, Part 5; Anderson and Morse, 'High Fertility'; Michael Anderson, 'One Scotland or Several? The Historical Evolution of Scotland's Population over the Past Century', in Robert Wright, *Scotland's Demographic Challenge* (Glasgow, 2004).

[27] Michael Anderson and Donald Morse, 'High Fertility, High Emigration, Low Nuptiality: Adjustment Processes in Scotland's Demographic Experience, 1861–1914, Part 2', *Population Studies*, 47 (1993), 319–43; Michael Anderson, 'Highly Restricted Fertility: Very Small Families in the British Fertility Decline', *Population Studies*, 52 (1998), 177–99.

[28] For more detail on emigration and the destinations of the emigrants, see chs. 7 and 27 below.

The situation in England was dramatically different. In spite of high overseas emigration in terms of numbers, England had relatively low rates of net loss even in the first thirty years of the twentieth century (the highest was 1.7 per cent in 1911–21), and migration was mostly modestly positive thereafter (between 0.8 and a little over 0.9 per cent per decade between 1921 and 1951, and again between 1981 and 2001).

But Scotland also attracted large numbers of in-migrants, actually having a higher proportion of non-natives than England back to at least 1851. The big difference in Scotland's situation was that most Scottish immigrants after the Second World War came from elsewhere in the UK, while a growing majority of those south of the border came from overseas. Thus, in 2001, 9.1 per cent of the population of Scotland was born in the rest of the UK (up from just 5.4 per cent in 1951),[29] whereas in England and Wales this number was just 2 per cent. However, most of this 2 per cent consisted of Scots, the equivalent of 16.2 per cent of Scotland's population in 2001 (up from 11.4 per cent in 1951 and 7.1 per cent in 1901). In 2001 England and Wales had 8.9 per cent of their people born outside the UK; for Scotland it was just 3.8 per cent (though this was significantly above the 2.5 per cent of 1951).

The other remarkable feature of Scotland's net out-migration has been its spatial pervasiveness. When this can first be measured, in the 1860s, over 90 per cent of Scottish parishes, holding over 60 per cent of the 1861 population, had net out-migration. This included all but nine parishes in the Highlands and Islands and Perthshire, all but six in the north-east, and most of the farming parishes in the south-east and south-west, where rates of loss were often far higher than from the Highlands and Islands.[30] But, even this early, it also included many urban and industrial parishes, among them nine with populations of more than 20,000, the largest of which was Paisley. More remarkably in a UK or European context, after 1870 at least one of Glasgow, Edinburgh, Dundee, and Aberdeen (by the 1900s all the four) experienced net outflow in every decade.

The other defining feature of Scottish demographic history right up to the 1970s was a remarkably repressed nuptiality, especially for women.[31] Not only was there a greater reluctance to marry in Scotland than in similar kinds of areas in England, but, in the Highlands and Islands, Scottish nuptiality was among the lowest in the whole of north-western Europe. Possible explanations for this, but with even clearer applicability for the century after 1850, have been discussed above, to which we may add markedly lower real wages than in England, as a discouragement to all but those most confident about their futures from entering into marriage.

Nevertheless, while nuptiality was repressed in the century before the Second World War compared with south of the border, marital fertility was somewhat higher, though also regionally variable. Figure 2.3 illustrates this for different groups of Scottish

[29] For English migration to Scotland see Murray Watson, *Being English in Scotland* (Edinburgh, 2003).

[30] Anderson, 'Population Growth', 111–31.

[31] Michael Anderson, 'Why was Scottish Nuptiality so Depressed for so long?', in Isabelle Devos and Liam Kennedy, *Marriage and Rural Economy: Western Europe since 1400* (Turnhout, 1999).

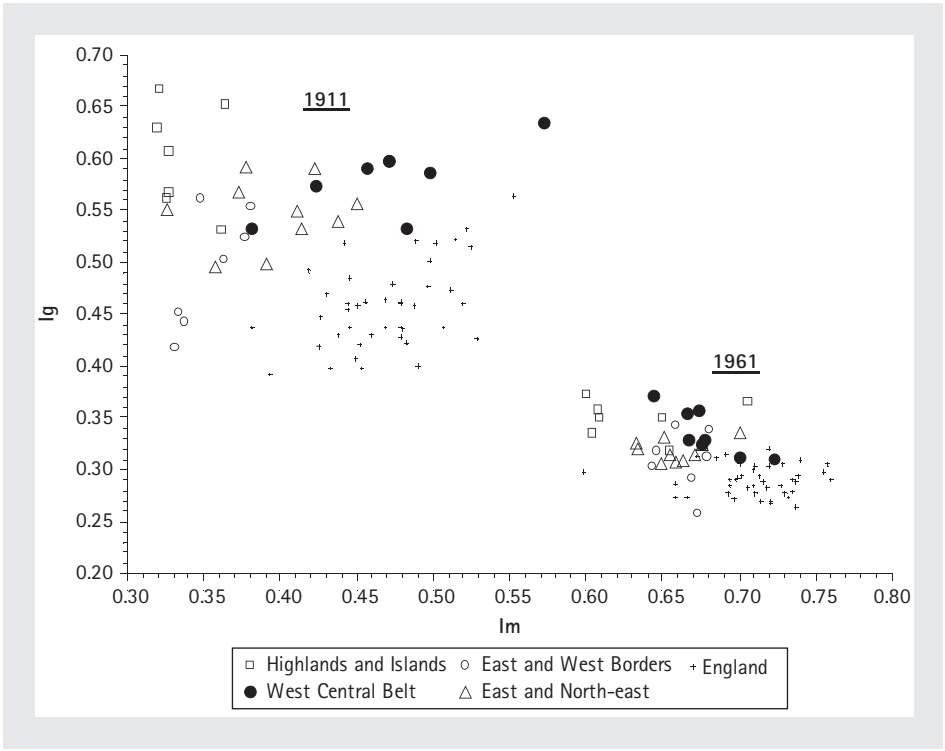


FIGURE 2.3 Age-standardized nuptiality and marital fertility, Scottish and English counties, 1911 and 1961.

counties for 1911 and 1961, and compares them with English counties as a whole. In the absence of detailed information on ages at childbirth, this graph uses the Princeton measure of marital fertility (I_g) and relates it to the Princeton measure of nuptiality (I_m). I_g is an age-standardized proportion of 'potential' (and roughly 'maximal') fertility that a group of women actually produced over a ten-year period around the census date. I_m is most easily interpreted by noting that 1-I_m gives the proportion of a woman's potential fertility that is not available for conception within marriage, because of delayed marriage or non-marriage.[32]

The pattern for 1911 shows the highly characteristic features of Scottish nuptiality and fertility before the First World War. Firstly, compared with England, Scottish nuptiality tended to be lower, but, for reasons that we do not yet understand, marital fertility significantly higher; as a result, overall levels of fertility were similar. Second, Scottish fertility and nuptiality were spatially more differentiated than in English: notably, the Highlands and Islands had extremely low nuptiality but high fertility

[32] For further discussion see Anderson and Morse, 'High Fertility', Parts 1 and 2.

within marriage, the industrialized and mining counties of the west Central Belt tended to be high on both (with West Lothian as the UK peak on both), and Roxburgh, Selkirk, and Peebles, with their strong concentration of female employment in textiles, were low on both.[33]

The 1961 pattern was different, even though, overall, age-standardized fertility in Scotland and England had only fallen by 10 and 9 per cent respectively (it had been markedly lower in the 1930s). But, if we break this down into its components, nuptiality was much higher in both countries and marital fertility much lower—yet, for reasons we still do not fully understand, Scotland still tended to rather lower nuptiality and higher marital fertility than England. Within Scotland, a similar regional patterning to that of 1911 was still visible, but with a markedly reduced range of variation.

One caution, however, has recently emerged: in the north-west, high marital fertility may partly reflect a custom whereby women living elsewhere returned to their mothers' homes to bear their first child.[34] The same behaviour also partly explains high non-marital fertility in some parishes, notably in the south-west and parts of Banffshire and Aberdeenshire, where over a fifth of babies were born to non-married mothers in the later nineteenth century.[35] This raises an important issue for further research: it could well be, for example, that highland-born migrant women were as likely as those born elsewhere to marry somewhere, but this is concealed by our only having evidence on the limited numbers who remained at home. The same may also apply to women born in Wigtownshire, for example.

In the later twentieth century, significant changes occurred in both nuptiality and fertility, both within and outside marriage. First, the mean age at first marriage for men, which was about 27 in the late 1850s and peaked at 28.2 in the 1930s, fell after the Second World War to a low of 24.2 in the early 1970s, then rose to 30.7 by 2001. A parallel pattern for women produced a peak of 25.4 for 1911–20, a post-war low of 21.8 in the mid-1970s, and a rise almost to 30 by 2001.

Second, for both men and women, the proportions who married rose markedly in the post-1945 period and fell dramatically in the late twentieth century. In 1971, 58 per cent of women aged 20–24 were married and 91 per cent of those aged 30–34. This compares with 22 per cent and 67 per cent in 1911, and 8 per cent and 61 per cent for 2001.

However, much of the post-1970s marriage decline was substituted by a rise in cohabitation. Cohabitation was very uncommon even among the childless as late as the mid-1970s but, in 2001, despite reduced levels of marriage, a quarter of women aged 20–24 and three-quarters of the 30–34 age group had either at some time been married or were cohabiting, figures well above the proportion who had ever been married in Scotland for

[33] Data and further discussion are in ibid.

[34] Personal communication from Eilidh Garrett.

[35] Andrew Blaikie, *Illegitimacy, Sex and Society: Northeast Scotland, 1750–1900* (Oxford 1993), ch. 5, who also summarizes the work of Paddock. For the eighteenth century, see Rosalind Mitchison and Leah Leneman, *Sexuality and Social Control: Scotland 1660–1780* (Oxford, 1989).

any year before 1939 (when cohabitation was extremely uncommon). In the long historical picture of partnership, it is the post-1945 period and not the late twentieth century that is the anomaly.

The overall trend in fertility was markedly downward in the later twentieth century. However, this significantly reflected not a flight from childbearing altogether but the near disappearance of very large families, plus a general shift to later childbearing, which itself resulted in more very small families. As late as 1981–5 women's median age at childbearing was 25; by 2001–5 it was 29.3. In the same period, births to non-married mothers rose from 15 per cent to 45 per cent of all births (Dundee's figures were 25 per cent and 60 per cent respectively). Most of this rise was directly linked to the growth in cohabitation. The first detailed data, for 2001–5, show almost two-thirds of all births to non-married mothers as registered by couples living at the same address and just 14 per cent by a mother alone. More generally, however, the whole question of changes and regional differentiation in fertility is still poorly understood even for twenty-first-century Scotland, and there remains great scope for more oral history as well as statistically focused research for earlier periods.

Detailed examination of mortality changes in the nineteenth and twentieth centuries is beyond the scope of this chapter; indeed, most of the mass of mortality statistics produced by the General Register Office has not yet been addressed by historians. But a few key points are clear. In the early twenty-first century, Scotland had the lowest life expectancy at birth in Western Europe. Within the United Kingdom's 432 local authorities (LAs) in 2005–7, only three Scottish authorities were in the best 200 for women's life expectation either at birth (e_0) or at age 65 (e_{65}), and six Scottish LAs in Greater Glasgow were among the worst ten UK LAs for female e_0.[36] In 1999–2001, Glasgow City was four years below the UK average figure of 80.2, and 2.3 below the Scottish average.

Over the long term, however, there are some brighter signs. Over the previous 150 years, e_0 rose dramatically from 40.3 years for men and 43.9 for women in 1861–70 to 44.7 and 47.4 in 1891–1900; by 1950–2 the figures had climbed to 64.4 and 68.7, and in 1996–8 to 72.4 and 77.9 (note the widening absolute gender gap in the twentieth century).

But this was not the only widening gap. When comparable data first became available, for the 1870s, e_0 for England and Wales was less than six months longer than in Scotland and about ten months longer for women. The situation in Scotland was better than France and Germany, but well behind Denmark, Sweden, and Norway. By 1930–2 the gap compared with England and Wales was 2.7 years for men and over 3.4 years for women (for women compared with Sweden it was over six years); these gaps only narrowed slowly over the rest of the century.

However, in one area there was marked relative improvement, at least until after the Second World War. As Chapter 24 shows, in great part due to their dramatically

[36] Recent data on life expectancy and survival are taken from the General Register Office for Scotland website at www.gro-scotland.gov.uk/statistics/publications-and-data/life-expectancy/index.html. For earlier material see the Decennial Supplement to the 48th Detailed Annual Report of the Registrar General…for Scotland, *Parliamentary Papers*, 1906, xxi.

rapid growth, Scottish nineteenth-century cities had appalling death rates (for example, e_0 in Glasgow even in the 1890s was almost ten years below the Scottish average). In the 1860s most rural areas had far lower death rates than small towns, and they in turn than those of the large towns and cities. Over the century up to 1950, marked improvements in sanitation and living conditions brought crude death rates down much faster in larger towns and cities than in the smaller towns and the countryside, though this was helped by the general ageing of rural populations. However, in the last quarter of the twentieth century, most of Greater Glasgow (and also the Western Isles) experienced slower improvement in mortality from key diseases than most of the rest of the country; as male death rates from heart disease fell dramatically for Scotland as a whole, the relative position of people living in many LAs in the west of Scotland worsened; the same was true of female lung-cancer deaths, which rose faster in these areas than in Scotland as a whole.

Figure 2.4 reflects the principal changes in overall mortality in Scotland from the 1860s to 2000–2. It shows the numbers of females born in any year who would have survived to any particular age had the mortality conditions of that year not changed during their lifetimes (for example, at 1860s mortality levels, roughly half of all girl babies would have survived to the age of 50, compared with around three-quarters at 1930–2 levels and over 95 per cent if 2000–2 rates continued). It also captures the relative impact of deaths at different ages on survival chances at any particular point in time. Glasgow in the 1890s is also shown for comparison. The figures for males were always rather worse but broadly moved in parallel.

Over the second half of the nineteenth century, infant death rates actually increased, with more than one in eight babies not reaching their first birthday by the 1890s; this, above all, kept expectation of life at birth so low. Thereafter there was steady improvement as family size fell and sanitation and baby-care improved, but even in the late 1930s infant mortality was still above 70 per 1,000 live births (about 100 in Glasgow, 90 in Dundee). The key change came after the Second World War, and by the end of the century infant mortality was down to about one in 200 births.

By contrast, big improvements from improved sanitation and living standards impacted much earlier on deaths, especially from infectious diseases, of children and young adults. In the 1860s a fifth of baby girls died between their first and fifth birthdays, by the 1890s this was down to one in eight, and by the 1930s to one in eighteen; aided by antibiotics, by 2000–2 it was one in 200. And of women reaching 15 but dying before 45, the parallel figures were a quarter, a fifth, one in nine, and, once mortality associated with childbirth and tuberculosis had been brought under control after the 1930s, one in fifty.

Improvements were much slower at older ages, where most deaths were always from chronic conditions—indeed, increasing tobacco consumption with a consequential marked rise in respiratory cancers was a key factor ensuring that expectation of life for men aged 60 only improved by one year between the 1860s and 1950–2, when it was 14.3 years. It reached 15.3 in 1980–2, and then, as tobacco smoking, cholesterol, and high blood pressure all became more controlled, it rose much faster to 18.5 by 2000–2.

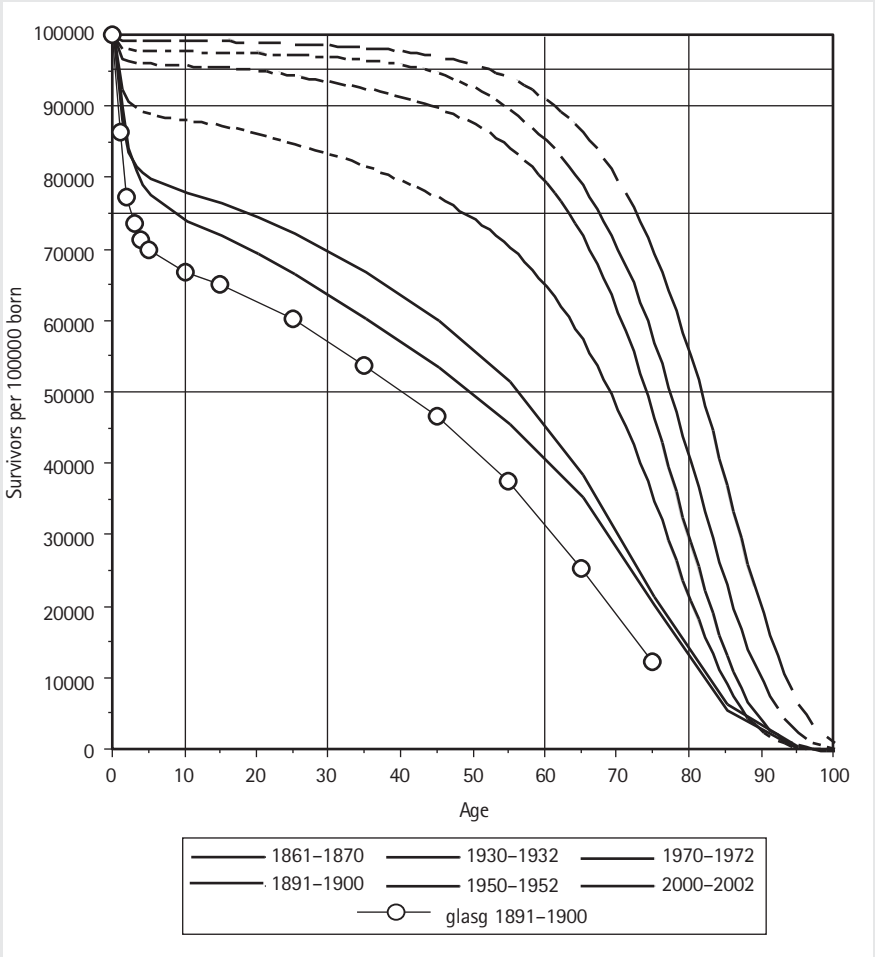


FIGURE 2.4 Survivors per 100,000 females born, Scotland and Glasgow, various dates.

What were the impacts of the combination of fertility, mortality, and migration changes on the age structure of the Scottish population? In 1851, 36 per cent of Scots were aged under 15 and just 4.8 per cent were 65 or over. At censuses from 1911 more detail is available: see Figure 2.5.

The graph for 1911 reflects a society where population had been growing rapidly, with more people born in each decade than in its predecessor, but where relatively high mortality at all ages pulled down the numbers surviving to older age groups. As a result, the proportion of the population aged 65 and over in 1911 was only 5.4 per cent, while the proportion under 15 was 32 per cent.

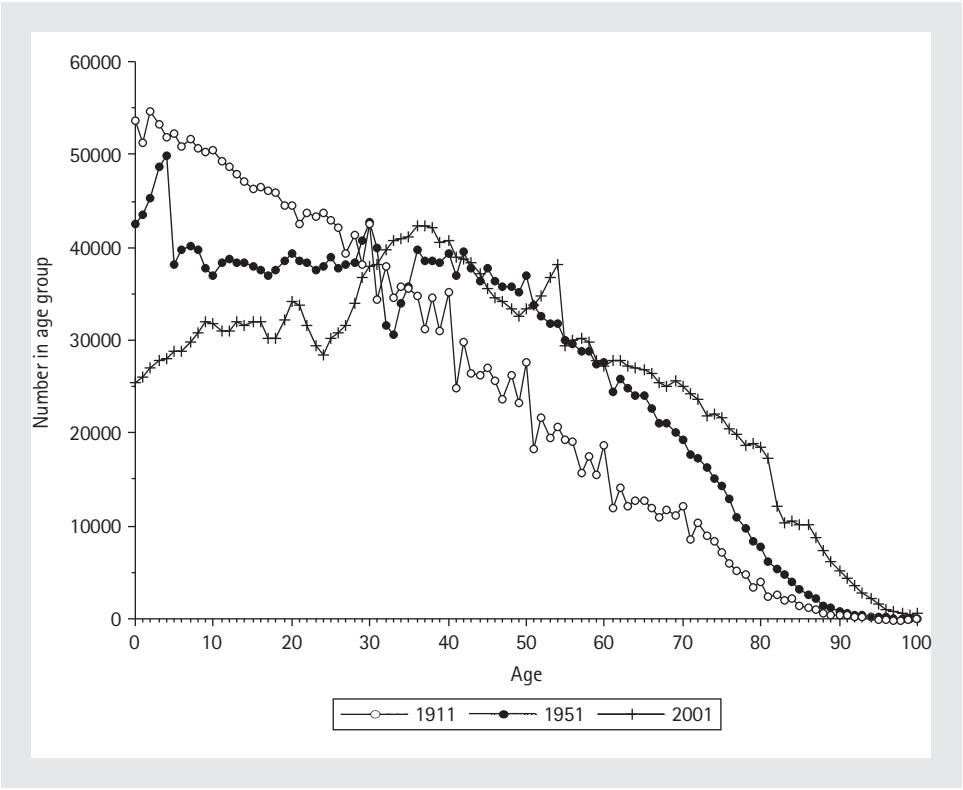


FIGURE 2.5 Age structures of the Scottish female population, 1911, 1951, and 2001.

By 1951, the pattern had changed. Low fertility in both World Wars was followed by post-war baby booms, but, above all, the graph reflects low interwar fertility and the fertility decline and high emigration before 1914. Fewer than 25 per cent of Scots were under 15. Survival at older ages was still restrained, leaving 9.9 per cent of the population aged 65 and over.

The 2001 pattern changed again. The birth-rate boom of the 1960s and the subsequent erratic decline are well shown: just 18 per cent were aged under 15. But rapidly extending survival chances of the older population meant that 16 per cent were aged 65 and over.

Note finally, however, that even if everyone aged under 20 and over 64 is defined as dependent, this still produces a dependent percentage of 40.1 per cent for 2001, below the figure for 1951 and more than ten percentage points below 1851 (when many people even aged 65 were far less capable of work than at the start of the twenty-first century).