Repeat Photography

Methods and Applications in the Natural Sciences

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Chapter 18

Written on the Surface of the Soil: West Highland Crofting Landscapes of Scotland during the Twentieth Century

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> The history of the economical transformation which a great portion of the Highlands and Islands has during the last century undergone does not repose on the loose and legendary tales that pass from mouth to mouth; it rests on the solid basis of contemporary records, and if these were wanting, ***it is written in indelible characters on the surface of the soil***. (Parliamentary Papers 1884: 2; emphasis added)

"Crofts" are uniquely Scottish land units in the Highlands. The "crofting way of life" and its associated landscapes are iconic points of reference to the historical and contemporary identity of Scotland today (Smout 1994). Indeed, the past injustices of the Highland Clearances and the Crofters Holdings (Scotland) Act of 1886, which gave security of tenure to the peasant population of the area, are deeply embedded in the Scottish collective memory (Hunter 1976). There are many detailed accounts of this period and the subsequent history of land and agrarian reform that evolved during the last 120 years. Rather than re-visit this well-worn historical narrative, this chapter will explore the socio-economic and agrarian transformation which has come about over the last 75 years or so by tracing the evidence for these changes in the landscape itself, as seen in repeat photographs.

Today, some 17,000 crofts occupy an area of 8000 km^2, mainly within the rugged landscapes of the northwest highlands and islands. Typically, crofting townships consist of a scattering of simple whitewashed houses set amongst small arable fields, within a larger pastoral landscape of common grazing for sheep and cattle. In most instances, these townships are located within, or are surrounded by, large privately owned sporting estates. The wet and windy climate and geography dominated by acidic rock, shallow soils, and treeless heath make this an unpromising and uncompromising place to extract a living from the land. Many of the mainland glens that were cleared to make way for southern sheep farmers and sporting estates in the 19th century remain empty to this day. However, the crofting legislation enacted at the end of the 19th century effectively "fossilized" the pattern of land occupancy and resulted in a diverse rural economy with a high population density (Brown and Slee 2004).

The repeat photographs presented here are concentrated within the Skye and Lochalsh District of Scotland, which might be characterized as typical of the core crofting areas (Fig. 18.1). As such, these images are typical of northwest coast township landscapes. Apart from one photo by Erskine Beveridge taken in 1898, all the original photographs used in this study were made by Robert Moyes Adam (1885-1967; see also Moore, *this volume*), during the 1930s.

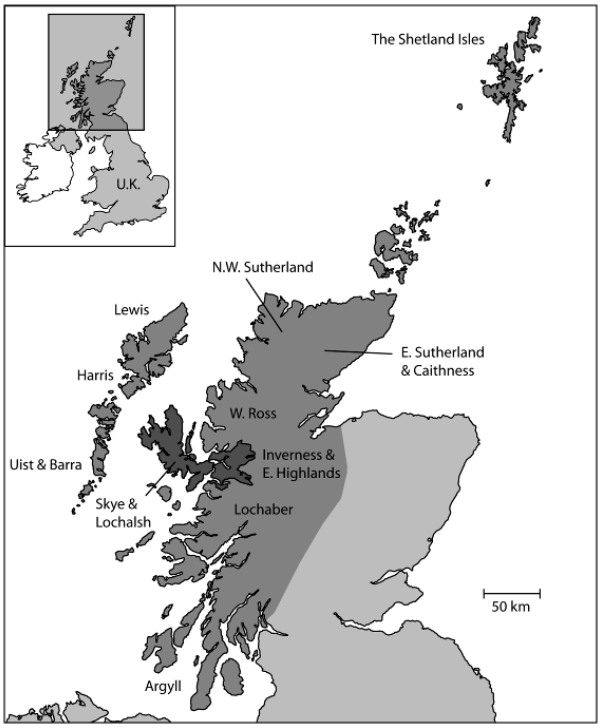

Figure 18.1. Map of crofting areas of Northwest Scotland showing Skye and Lochalsh District. (afterwww.croftingfoundation.co.uk/ accessed 14 October 2006)

His photographic record of the rural landscapes of Scotland during the first half of the 20th century is perhaps the most comprehensive of its kind, consisting of around 15,000 negatives now held in the library of St. Andrews University. His photographs of crofting townships depict a cultural landscape on the cusp of transition from the deep rural peasant subsistence agriculture of the late 19th century to a version of modern agriculture based on subsidies and economies of scale. He made at least ten trips to the Skye and Lochalsh area between 1926 and 1943, most often in the late summer or early fall when crofting activities were clearly visible in the form of hay stacks, corn stooks, and patches of un-harvested potatoes. Typically during each visit to the area, he would expose more than 50 glass half-plates depicting the area's landscapes, although only a small fraction of these were of human settlements. His images of crofting landscapes are of a quality and consistency that make it a pleasure to follow his footsteps into the past.

My chapter focuses on an analysis of change evident in five case study sites drawn from 36 photographs depicting 19 crofting townships (Fig. 18.2). They show not only the environmental effects of changing agricultural practice, but also hint at the underlying socio-economic and political forces that accompanied agrarian change. The processes of deagrarianisation manifest differently across the developed and developing world (Bryceson 1996), and the crofting landscapes of the Northwest Highlands and Islands are one particular manifestation of this process. Population decline, which reached its nadir in the 1970s (Bryden and Houston 1976), has been reversed partly due to the influx of southerners over the last 30 years (Short and Stockdale 1999). Tourism is now the largest sector of the local economy, but in relation to national standards, the area remains marginal with high levels of poverty and unemployment (Chapman and Shucksmith 1996, Pacione 1996). The eight matched photos presented here illustrate three distinct processes that were "written in indelible characters" across the landscape of crofting townships throughout the 20th century: human population change, agrarian change, and parallel socio-economic transformation.

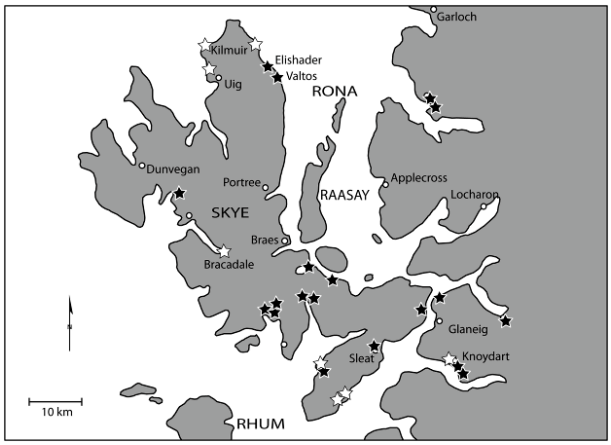

Figure 18.2. Map of the Northwest Highlands and Islands depicting the locations of all repeat photographs used in this study. White stars indicate the location of sites that are illustrated in this chapter, black stars indicate all other sites used in this study.

Background

The Northwest Highlands have been continuously occupied since around 8500 yrs BP when the first small bands of Mesolithic hunter-gatherers arrived. Arable farming has been practiced for at least 5000 years and the Neolithic, Bronze Age, and Iron Age cultures that preceded the Roman occupation of southern Scotland can be traced in numerous standing stones, brochs, hut circles, and souterrains scattered across the Northwest Highland landscape (Simmons 2001). During the last two millennia, a succession of cultures, including Pictish and Viking, have left their traces in place names and archaeological sites. Later medieval castles and Christian cathedrals such as Iona and Skeabost are testament to the organization of the regional polity connected by the waterways of the west coast.

Climate change too has left its mark on the landscape. The relatively benign conditions of the Holocene climatic optimum (8000-4500 yrs BP), when temperatures were up to 2.5 °C higher than today, gave way to the cooler, wetter peat-forming conditions around 4000 yrs BP, coinciding with a regional decline in tree cover eventually resulting in a treeless landscape in the Hebrides by around 2500 yrs BP (Hirons and Edwards 1990, Fossitt 1996, Seppä et al. 2003, Tipping et al. 2006). At the onset of the Iron Age (ca. 3000 yrs BP), anthropogenic and natural processes had already resulted in a reduction in woodland cover in the Northwest Highlands (Armit and Ralston 2003). Untangling the combined effects of climate change and anthropogenic disturbance is complex, but their combined impact on vegetation and soils over the last two millennia has been deleterious (Tipping 2003). Climatic oscillations during this period (e.g., the Romano-British warm period, deterioration during the Dark Ages, the Medieval Warm Period, and the Little Ice Age) have undoubtedly resulted in phases of agrarian abandonment and re-colonization of Northwest Highland landscapes. In common with all other parts of the British Isles, the Northwest Highlands have been significantly transformed by human intervention over the last several thousand years (Blundell and Barber 2005). However, the landscapes of the Northwest Highland crofting areas have attained their mythical status of "wilderness" only recently as a result of 19th century clearances, sporting estates, tourism, and conservation propaganda (MacDonald 1998, Mackenzie 2006).

The period preceding the Highland Clearances of the early 19th centuries probably left the most lasting impact on the environment. Population reached a peak in the early 19th century as landlords moved people out of inland glens into miserable overcrowded townships that became the defining characteristic of the crofting system until it was reformed in the 1880s. Townships were laid out, often superimposed on more ancient field systems, across old enclosures, and disregarding head-dykes (Dodgshon 1994). As populations expanded, every scrap of land capable of cultivation was put to use, and mixed herds of cattle, goats, and sheep were shepherded between summer and winter grazing land. Migrant labor, seasonal herring fishing, shellfish gathering, and kelping became essential livelihood activities in the subsistence economy (Hunter 1976).

After decades of struggle, reform finally came with the passage of the Crofter's Holding Act of 1886, which gave security of tenure, rights to compensation for permanent improvements, the right to a fair rent arbitrated by an independent Crofters Commission, and the right to bequeath tenancy to a family member. Typically, new crofting townships were planned on a grid or strip pattern, depending on topography, giving each household a roughly equal portion of arable land (between 0.5 and 2.0 ha) and rights to a limited number of grazing animals on common land as well as rights to defined areas to dig peat for fuel.

Crofting Township Case Studies

At the time of Adam's visits to the Northwest Highlands, the crofting society he photographed was on the cusp of change. It was a time when the "crofting way of life" came close to its apotheosis as an integrated and unique cultural expression. A number of folklorists, ethnographers, musicologists, photographers and writers from the outside world were attracted to the Northwest Highlands and the Hebrides at this time and several stayed and helped lay the foundations of the Gaelic revival. It also coincided with the economic hardships of the depression which forced many urban migrants back onto the resources of the family crofts (Cameron 1998).

Although the region's demographic nadir would not be reached for another 40 years, poverty and poor living conditions were widespread and there were few economic opportunities apart from crofting. The "Highland problem," as it became known to developers in the following decades, was a result of the complex history of socio-economic change: the demise of the clan system of communal land ownership, the Clearances, the introduction of sheep, the Napier Commission, and the Crofting Acts that followed. Frank Fraser Darling, one of the most influential writers on Highland affairs during the 1940s and 1950s, defined the problem as a lack of resources and capital, as well as widespread depopulation. There was not enough arable land in the crofting areas to enable economic-sized holdings for each croft, a lack of capital meant that crofters could not improve their land, and "in order to gain capital crofters migrated to urban centers making it impossible to cultivate their land" (Darling 1955: 10).

The overpopulation, famines, destitution, squatting, rack-renting, and insecurity of tenure of the early and mid 19th century had been overcome by the time of Adam's visits. But by the 1950s, Darling found the problem to be moving "in the other direction," where there was excessive depopulation on the northwest mainland to the extent of endangering normal social life, and where the croft land and common grazing were deteriorating and used well below their agricultural potential (Darling 1955: 12). This is the cusp of change, between overpopulation and depopulation, that Adam captured in his township images.

Arnisdale and Corran

Two small villages of Arnisdale and Corran lie within two kilometers of each other, clustered around the bay on the north shore of Loch Hourn and on either side of the Arnisdale River and surrounded on all sides by Arnisdale Estate. The photographs I present here depict Arnisdale itself, but the historical narrative includes Corran as these two settlements are in reality one community that developed around the herring industry in the late 18th century. A census from 1836 puts the population of Corran and Arnisdale at 600, but even then it was in decline due to emigration (Miers 2006).

I include two repeat photos of Arnisdale in order to give an indication of the processes of social and material change preceding the time when Adam visited the area. Within 10 years of the passing of the Crofters Holdings Act in 1886, improvements of living conditions proceeded throughout the crofting areas. Erskine Beveridge's photo taken in 1898 (Fig. 18.3A) is a good example of how this change came about and contextualizes Adam's photo taken 33 years later (Fig. 18.4A). Like many other west coast crofting settlements of the 19th century, the land provided for small crops of potatoes and fodder for a few livestock, but in the main, livelihoods were won from the sea. During this period, Loch Hourn was renowned for its annual herring fishing between July and October when up to "a couple of thousand fishermen would come from all parts of Scotland" (Parliamentary Papers 1884: 2044).

A. B.

Figure 18.3. Beveridge photograph of Arnisdale, Scotland, UK.
A. (ca. 1898). Erskine Beveridge's photo shows the beginnings of the new, improved Arnisdale village, financed by the landlord, and is included here as historical background to an era of improvements in housing and social conditions that is often evident in Robert Adam's other township photos taken 30 years later. Note the numerous fishing boats on the shore and the small fields behind the houses. The wooded area and buildings from center right are part of the Arnisdale farm, soon to become a sporting estate with its signature "big house". (©RCAHMS [Erskine Beveridge Collection] Licensor www.rcahms.gov.uk).
B. (28 September 2006). The new row of houses was completed and the old "blackhouses" closer to the shore were demolished shortly after Beveridge's photograph was taken. The most noteworthy change in these repeat images is the increase of woodland, due almost entirely to cessation of firewood cutting and the effects of reduced grazing pressure on the in-bye fields. (R. F. Rohde, Sco 53b).

At the time of the Napier Commission, the crofting families of Arnisdale had no more than half a hectare of arable land apiece and no access to hill grazing. Only one family kept a cow by permission of the proprietor of Arnisdale Farm. Testimony of the poor living conditions was given to the Commissioners regarding the so-called turf and rush thatched "black houses," so named due to the fact that they had internal fires but no chimneys and often no windows (see Fig. 18.6). Typically they housed both humans and animals and their interiors were notoriously damp, dark, and dirty:

> We built them ourselves, for the proprietor gave us no assistance. [. . .] We spoke to the factor about a change of site for the houses and as an answer he asked us whether the sea was coming over the floors of them. We said it sometimes did; and he told us then that we should put back doors upon them, and when the sea came in that we could run away" (Parliamentary Papers 1884: 2027).

The dwellings under construction in Beveridge's 1898 photo are forerunners of the improved "white houses," subsidized by the Congested Districts Board, the Department of Agriculture, and the Crofters Commission, that became ubiquitous throughout the crofting region during the first half of the 20th century. In the 1890s, 45 houses were occupied in Arnisdale and Corran by a population approaching 200 people (Parliamentary Papers 1895, English 2000). By the time Adam took his photo in 1939, this number had nearly halved; many of these houses would have been occupied by elderly men and women, although the school remained open with a handful of pupils until 1954; today, only 16 houses are permanently inhabited by 32 people. These include 10 households occupied by the retired descendants of the original crofting families and four by young couples with eight school-aged children. However, this is a welcome improvement from the period between 1990 and 2000 when there were no school-aged children in the village.

A. B.

Figure 18.4. Adam's photograph of Arnisdale, Scotland, UK.
A. (20 August 1939). Adam's photograph of Arnisdale, taken from a position left of Beveridge's camera station in Fig. 18.3A, shows how extensively it was cultivated in 1939. (R. M. Adam, RMA-H7115, courtesy of the University of St. Andrews Library).
B. (28 August 2006). The most noticeable changes evident in 2006 are the amenity trees near the row of houses, while the trees in the arable croft land have grown more as a result of agricultural abandonment in the last 30 or 40 years. Other signs of agricultural neglect are evident in the *Pteridium aquilinum* (bracken) and *Juncus effusus* (rushes) that have invaded the arable ground and *Ulex europaeus* (gorse) on the steeper slopes. Comparison of Figs. 18.3 and 18.4 underscores that these changes are recent. (R. F. Rohde, Sco 10b).

During the last 20 years, several derelict houses have been bought and restored as holiday homes, and most of the year-round residents of the village have also modernized and extended their original croft houses.

At the time of Adam's photo, employment in the village would have revolved around the Arnisdale and adjacent estates, involving stalkers, stockmen, boatmen, housekeepers, two school teachers, a shopkeeper, postman, and laborers for the recently established Forestry Commission. Employment today consists of one estate worker, one contract worker in the oil industry, one construction worker and one support staff for a local wind-farm company, a part-time post mistress, a nurse, one bed and breakfast business during the summer months, a seasonal tearoom, a school bus driver, and one self-employed seasonal boatman ferrying hill-walkers to more remote parts of Loch Hourn.

During the period between the repeat photographs, crofts have gone fallow and unused as crofters have retired or died. By the 1970s, there were only 10 active crofters, and today none; the last of the livestock were sold in 2006. This is not untypical of marginal and remote townships where agrarian decline has been inexorable during the whole of the 20th century. Today, a slow renewal of the local economy by diverse enterprises such as fish-farming, wind-farms, tourism, and service-related self-employment mean that the marginal agriculture underlying the "crofting way of life" is less relevant than ever before.

Tarskavaig

The village of Tarskavaig was created as a result of forced removals from other parts of Skye during the early 19th century. The arable land was divided into 31 lots, and by 1883, 45 families subsisted on remittances from migrant labor and the produce from mixed agricultural smallholdings varying in size from 0.6 to 1.4 ha (Parliamentary Papers 1884: Q5535). In 1931, the village was still agriculturally active and several new "white houses" indicate a degree of improvement in living conditions at that time (see Fig. 18.5A).

A. B.

Figure 18.5. Lower Tarskavaig village, Scotland, UK.
A. (24 September 1931). This view of Lower Tarskavaig village, from just outside the head dyke of this crofting township, shows extensively cultivated fields during the late harvest. (R. M. Adam, RMA-H2769, courtesy of the University of St. Andrews Library).
B. (23 September 2006). The effects of changing agricultural technology and improved housing are evident. Within the frame of the repeat photograph, there are now five occupied modern houses and one new house under construction while several of the old thatched or corrugated roofed houses are either derelict or used as barns and sheds. Today there are no hay stacks, corn stooks, and strips of potatoes; earlier harvesting of the grass for big-bale silage has left a lush green sward for early winter grazing. Underlying these changes is a remarkable stability in the social fabric of the crofting community reflected in the persistence of basic settlement and field patterns. (R. F. Rohde, Sco 6b).

Adam's photo of Tarskavaig (Fig. 18.5A) found its way into various publications in the following decades (e.g., Barnett 1933). Fraser Darling used several of Adam's photos depicting the townships of Sleat in his seminal books *Crofting Agriculture* (1945) and *The West Highland Survey* (1955), where he commented that, unlike many other parts of Skye, Tarskavaig had good grazing and well-drained arable land of light loam and represented "an idyllic picture of a crofting township" (Darling 1955: 39). Adam's image does indeed seem idyllic: it depicts one of those relatively rare dry clear days of autumn with the hay, oats, and barley harvest neatly stacked to dry before being moved into larger stooks or indoors for the winter. Even the smallest fields and most marginal arable land were worked and the adjacent hill grazing kept free of bracken. Seven houses, two of which were new government subsidized "white houses," two partially modernized black houses with corrugated iron roofs, and three traditional "black houses" of dry-stone-rubble walls with thatched roofs are evident in this part of the township.

> This would be good early potato ground, and seaweed would not be hard to get. The crofts look trim and well kept. The oat crop also looks a good one. The bracken is evidently creeping in, from the appearance of the foreground. Many crofters in such a district as West Sutherland would think themselves fortunate with stretches of arable as good as this. Small mechanized agriculture is possible here, and vegetables for the Skye tourist trade would do well (Darling 1945: 74).

The most obvious contrast with 2006 is the absence of stooks and hayricks or potato fields. The precarious and labor intensive business of drying fodder and grain has been superseded with the aid of a large tractor and big-baler to make silage for cattle.

The recollections of Flora MacLean, who was born in Tarskavaig in 1949, confirm that little changed during the 20 years following Adam's visit. Flora recalled that when she was a child, all the crofts were

ploughed with horses and cut with scythes, the oats were made into stooks, and hay was dried just as in Adam's photo. Most crofters kept a cow and follower, and the village population worked the sheep and planted potatoes together. Change came during the 1950s and 1960s as the old people died, crofts became disused, and many of the houses stood empty. She herself went away to work in the south after leaving school, but came back in the 1970s.

> The decline in the village continued until about 15 years ago when people started coming back. Four or five houses are now occupied by people who do not croft or have a plot of land. Some of these work at the nearby Gaelic college and have family ties to the area. Young people have come back and almost all the houses are still in possession of the original crofting families. Those that are complete incomers have integrated well. (F. MacLean, personal communication, 26 October 2006)

Today, only one farmer makes a substantial part of his income from the land. He has a tractor and round baler, and cuts grass for four or five other crofters who still keep a few cattle. Deagrarianisation has followed contemporary economies of scale relying on capital-intensive big-bale silage technology by one farmer where previously there were over 30. The more marginal lands have been left fallow, and only the larger fields are cut (Fig. 18.6B). About 10 of the 30 houses in the village are used intermittently during holidays by the relatives of original crofting families or are holiday houses used by outsiders. The other houses are occupied more-or-less all year round by locals. The village is a healthy thriving community today—back from the brink of depopulation. The land is no longer the mainstay of the economy since people no longer accept that level of hardship and poverty. A diversity of employment opportunities, many of them related to the seasonal tourist trade in the area, sustain many similar communities in Skye and Lochalsh.

Calligarry and Ardvasar

> Before 1803 there were only 7 families in the Calligarry township—in that year it was divided into 18 lots—everyone that sent a son to his lordship's regiment would get one . . . five entire lots are held by as many tenants, the remaining thirteen being subdivided into as many as six divisions. There are two cottars in the township that have no land at all and cannot even keep a hen. (Parliamentary Papers 1884: 274)

From testimony to the Napier Commission in 1883 it is clear that no one in either Calligarry or Ardvasar had kept sheep since about 1800. The tacksman of Ord (whose farm extended to 2400 ha with 9 ha of it arable) employed a few crofters as ploughmen. About 10 or 12 people were employed at Armadale Castle (the Clan Donald seat) each summer in the gardens, and others went south to seek employment. "They go to the Irish coast fishing—the younger ones; and a number of girls go to be house servants in the towns; and those that don't do that go to work with farmers in the Lothians and on the east coast of Scotland" (Parliamentary Papers 1884: 313).

The establishment of larger croft holdings and substantial common grazings after the Crofters Holdings Act of 1886 meant that a higher standard of living based on small-scale agriculture was possible. Fraser Darling's comments on the crofting landscape depicted in Adam's 1931 image of Calligarry (Fig. 18.6A) show some insight into the agrarian change taking place at the time:

> Some of the hay is in large quoils, some in small quoils, some lying in the swathe and some uncut. Tripods in the middle distance indicate that the big quoils are being made with air space inside them. They would dry even better if they were lifted clear of the ground. This township has obviously shrunk since the days when much of the ground behind the crofts was cultivated. The lazy-beds evidently supported a large population, for all those acres of *feannagan* [so-called 'lazy-beds'] in the photograph represent hard labor (Darling 1945: 44).

Figure 18.6. Calligarry Township, Scotland, UK
A. (21 September 1931). This image of Calligarry Township depicts one of the few "blackhouses" described in the text and still inhabited at the time. Within 20 years, none were inhabited in the parish and only a handful in Skye itself (Barron 1985). (R. M. Adam, RMA-H2752, courtesy of the University of St. Andrews Library).
B. (29 August 2006). The "blackhouse" and thatched byre are today barely recognizable ruins. The more marginal fields have been abandoned and natural woodland regeneration is evident as a result. The open spaces between the wooded areas and in the drier sections of the fallow fields are now overrun with *Pteridium aquilinum* while *Juncus effusus* have invaded the rougher and damper ground. Today, the croft land is farmed in the same way as described for Tarskavaig—a few crofters with tractors and big bale silage machines crop the grass early in the summer. The bales are wrapped in plastic and stacked at the sides of fields close to where cattle will be fed in the winter months. Anyone who has tried to make hay during the wet west Highland summers will agree that this modern technique is a great advance on the hay cutters, turners, and balers of the more recent past, to say nothing of hand scything, raking and stooking of the 19th and early 20th century. Forestry Commission plantations of *Picea sitchensis* and *Pinus contorta* that have transformed the open moorlands of the Highlands during the 20th century are visible in the distance. (R. F. Rohde, Sco 40b).

The trend that Darling noted in the 1931 photograph has continued into the present (see Fig. 18.6B). Figure 18.6A depicts one of the few black houses still inhabited at the time. Within 20 years, none were inhabited in the parish and only a handful in Skye itself (Barron 1985). The relatively large and fertile crofts of the Sleat peninsula provided partial livelihoods for crofters at the time of Adam's photos, but similar to previous eras, in the 1960s a family needed another source of income apart from the croft. But given a large enough landholding, "a young man would be justified in working well and making crofting his full-time occupation, because present day Government subsidies and good proceeds for stock and wool bring in more income now than ever before" (Barron 1985: 513). During the 1960s electrification and rural water supplies were completed, and most houses had piped water and modernized bathrooms.

The photo of Ardvasar township (Fig. 18.7) shows similar trends in agricultural practice: only the larger fields are used for grazing or silage production resulting in increased woodland, invasion of *Pteridium aquilinum* (bracken) and *Juncus effusus* (rushes), as well as the development of new modern bungalows close to the main road linking Skye to the mainland ferry.

The change in cattle numbers in the Sleat Parish over the last two centuries is indicative of the change in agricultural practice from intensive mixed farming centered on cattle to extensive sheep farming (Dodgshon 1993). In 1795, there were about 2600 cattle and almost no sheep: in 1963, there were only 749 beef cattle and 15,010 sheep (Barron 1985), and by 2005 these numbers had fallen to 607 and 10,437, respectively (SEERAD 2007).

A. B.

Figure 18.7. Ardvasar Township, Scotland, UK.
A. (21 September 1931). This view of Ardvasar Township shows enclosed grazed fields in the foreground and crofts in the midground, overlooking the Sound of Sleat and Knoydart. (R. M. Adam, RMA-H2751, courtesy of the University of St. Andrews Library).
B. (29 August 2006). Note the heavily grazed sward in the foreground, the increase in *Juncus effusus* and *Pteridium aquilinum* in the mid-ground and woodland incursions around arable fields in the distance. These are combined symptoms of extensification of land-use associated with sheep farming and a decline in arable production. The monoculture forestry plantation in the left distance is nearing maturity when it will be clear-cut and exported primarily for pulp. (R. F. Rohde, Sco 41b).

Drynoch

In common with the townships described above, the crofters of the parish of Bracadale were confined to pitifully small patches of land while the bulk of the area was divided up into six enormous sheep farms in the mid 19th century, of which Drynoch was one (Hunter 1976). At the time of the Napier Commission, only 11 families remained in Drynoch "very much decreased," all being cottars with no land of their own and not allowed to keep livestock, "apart from five families allowed to keep 1 cow and 2 or 3 sheep—all tethered" (Parliamentary Papers 1884: 336). Most of the evictions had taken place in the early 19th century, and the remaining hill ground was taken away from the crofters in the 1840s. Those tenants who were not removed were required to labor for the family of the lowland proprietor of the sheep farm.

Unlike the townships in Arnisdale and Sleat, land-tenure reform did not reach Drynoch until 1923 when Drynoch Farm came into the hands of the Board of Agriculture for Scotland and was put under crofting tenure (Cameron 1996). By the time of the third Statistical Report compiled during the 1950s, the crofts of Drynoch were described as being

> … in the main of such a size as to afford their occupants a very fair standard of living. There is no great poverty in the parish. The smallholders, who form the greater bulk of the population, are now in a comparatively prosperous condition, and many of them own motor cars, tractors and other farm implements. Ploughing by horses is becoming rarer and rarer. . . (Barron 1985).

Overall, the major changes suggest that this is a highly productive and valued agricultural landscape. Large crofts that were created with some consideration for economic viability in the 20th century have survived with little change (Fig. 18.8).

A. B.

Figure 18.8. Drynoch Township, Scotland, UK.
A. (24 September 1936). Drynoch township is an ancient cultural landscape with extensive pre-clearance dykes, which are apparent against hillslopes in the midground and distance. Sheep are grazing in the foreground near the footstones of a pre-clearance dwelling that are hidden within a patch of *Juncus effusus*. To the left of frame in Glen Drynoch, abandoned homesteads and pre-crofting field systems are widespread. (R. M. Adam, RMA-H5226, courtesy of the University of St. Andrews Library).
B. (23 September 2006). Large fields on the lower flood plain, where there are now six new large agricultural sheds corresponding to six large croft holdings, are in use for big-bale silage and suckler beef production. Only two of the six crofts on the opposite slope are now cropped for silage; the others are either abandoned or used only for grazing. Other changes include the extension of arable fields into the lower floodplain, the planting of conifer shelter belts, and several new houses on what appears to be a subdivided croft to the left. Forestry Commission plantations are visible on the skyline between Drynoch and the Cuillin Hills in the distance. (R. F. Rohde, Sco 44b).

Kilmuir District

In 1847, the 18,600 ha Kilmuir estate had been sold by Lord MacDonald and turned over to several large sheep farms and the crofting tenantry confined to small coastal settlements (Barron 1985). During the land wars of the 1880s, Kilmuir was known to be one of the most fertile areas of the island and at the same time one of the most afflicted by clearances and the practice of rack-renting by an unscrupulous landlord (Cameron 1996). In the wake of the Crofters Holdings Act in 1886, Kilmuir crofters and cotters petitioned their landlord for the restoration of their former grazings at Monkstadt and Duntulm farms which "were in the hands of strangers while . . .the rightful owners were huddled together on rocks and moss not fit for cultivation" (Hunter 1976: 176, quoting Crofting Files AF67, Scottish Record Office).

A. B.

Figure 18.9. Totescore Township, Scotland, UK.
A. (27 September 1936). Totscore Township with Monkstadt House (now derelict) visible in the distance. Adam's photo shows haymaking in various stages and unharvested potatoes late in the season. Evidence for more extensive cultivation and drainage of surrounding fields is clearly visible in 1936. (R. M. Adam, RMA-H5268, courtesy of the University of St. Andrews Library).
B. (1 September 2006). Aerial photographs show that every scrap of land on the coastal plain has been turned by cas-krom (hand-plough) or horse-drawn plough at one time or another. Today, these fields have been abandoned for so long that little trace remains of this intensive land-use apart from the ancient head-dyke and the single croft in the right midground. (R. F. Rohde, Sco 45b).

The estate, consisting of seven townships, was bought by Congested Districts Board in 1904. The lands of Monkstadt farm were given to the adjoining townships of Totscore (Fig. 18.9) and Bornesketaig (Fig. 18.10), and a new settlement of Linicro was formed in 1914 along with the creation of new croft holdings in Flodigarry (Fig. 18.11). All the townships in this parish were enlarged at the expense of sheep farms by the Congested Districts Board and later the Department of Agriculture.

A. B.

Figure 18.10. Bornesketaig Township, Scotland, UK.
A. (27 September 1936). This view of Bornesketaig township shows partially harvested hayfields and small patches of potatoes with "blackhouses" behind. (R. M. Adam, RMA-H5269, courtesy of the University of St. Andrews Library).
B. (1 September 2006). Surrounded by new modern bungalows, the "blackhouses" inhabited in 1936 but abandoned soon afterwards, have now been restored - one as a heritage museum. The fields in Adam's photo are now fallow and used solely for grazing sheep. (R. F. Rohde, Sco 46b).

Over the next 25 years, the area of arable land increased from 990 to 1345 ha and the total area of crofting tenure from 9847 to 18,049 ha. Ten large sheep farms were incorporated into the crofting landscape, and 85 new crofts and 268 existing holdings were enlarged. "Landlessness had been eliminated and the number of thatched houses had fallen from 336 to 137 while the number of modern stone-built houses with slated roofs had increased from 20 to 304" (Hunter 1976: 206). When the Smallholders Act became law in 1912, the estate was registered in the name of the Board of Agriculture for Scotland and is now a Crofting Estate under the Secretary of State for Scotland.

> Fifty years after Kilmuir was taken into state ownership there were . . . great changes in the material conditions of the people, with a consequent change in their outlook. Black house to white house; lorry for the creel and cart; tractor and plough for the *caschrom*; bus or car instead of walking or riding; daily post office van instead of thrice weekly delivery; free medical services; free school transport; etc. (Barron 1985: 477).

At the same time, a massive reduction in population occurred, from a peak of 3625 in 1841 to a quarter this amount in 1961. In contrast to the District as a whole, this locality has seen a further fall of almost 40% in the population since 1971 (SL local plan 1999). Accompanying these socio-economic and demographic trends, arable cultivation (including temporary grass) fell by one half. Since 1963, cattle numbers have halved from 2349 to 1176 while sheep numbers have almost doubled from 16,974 to 30,220, reflecting the wider trend of extensification.

In 1949, the number of part-time jobs (apart from crofting) in the nine townships of Kilmuir Parish was 16, half of which were fishing for export and the others either estate work, public services and road maintenance, and textile manufacturing (Darling 1955). Today crofting continues to provide supplementary income to tourism and service based employment, much of it dependent on commuting to the nearby town of Portree (Skye and Lochalsh Local Plan 1999).

A. B.

Figure 18.11. Flodigarry Township, Scotland, UK.
A. (27 September 1936). This view of Flodigarry township shows a recently built "white house" with large stacks of peat to the right and winter fodder stacked in the yard behind. All the arable land in the township has been cropped for oats and hay. (R. M. Adam, RMA-H5276, courtesy of the University of St. Andrews Library).
B. (1 September 2006). Modern bungalows have replaced the improved "white houses." Over half of the fields are now fallow and invaded by *Pteridium aquilinum* and *Juncus effusus*, and native woodlands are on the increase. (R. F. Rohde, Sco 47b).

Discussion

Deagrarianisation in the Northwest Highlands has much in common with trends throughout the more marginal agricultural areas of Europe, which are characterized by a diversity of cultural landscapes shaped by traditional land-use practices (Plieninger et al. 2006). These landscapes support high levels of biodiversity and ecological services, both of which are being lost due to deagrarianisation, extensification and land abandonment (Birnie and Mather 2005, Plantureux et al. 2005). The repeat photographs of crofting townships illustrate the links between socio-economic, agrarian, and ecological systems, and by implication the relationship between cultural and biological diversity (O'Rourke 2006). The species-rich hay meadows that were developed on crofts over more than a century of stable agricultural tenancy were the result of long rotations of late cutting with after-grazing by cattle interspersed with short periods of cropping. The repeat photographs show that all but the largest and most productive fields have suffered deterioration evidenced by the invasion of *Juncus effusus* and *Pteridium aquilinum* and the loss of conservation value based on floristic composition (Tiley and Jones 2005). Land abandonment and impoverishment of marginal fields has also resulted in scrub woodland regeneration, which might otherwise be welcome from a biodiversity perspective, were it not that scarce hard-won agricultural land is being lost. Furthermore, the larger fields that are now cropped for silage are likely to be less floristically diverse due to reseeding and application of nitrogen fertilizer. Both trends are consistent with the change from "traditional" croft management to more modern capital-intensive fodder production dependent on economies of scale, extensification of sheep farming, and complete abandonment due to deagrarianisation and de-crofting (Dodgshon 2006).

The repeat photographs from all 19 townships of this study clearly illustrate these inter-related trends that constitute nothing short of an "ecological revolution" between the 1930s and the present (Merchant 1997, Rohde and Hoffman 2008). This has been accompanied by an economic transformation in the local economy due in part to the recent creation of employment in fish-farming, tourism, services, and a boom in house building related to the national surge in property values. The reasons for these changes are complex and revolve around European agricultural and development policy as well as global changes in commodity production, transport, and tourism. However, agriculture now plays a minor role in an environment that was once almost wholly dependent on it to sustain the local economy.

Two very different perceptions of the crofting landscape were espoused during the decades following Adam's trips to the Northwest Highlands that echo into the present. One portrayed it as devastated and degraded "and that is the plain primary reason why there are now few people and why there is a constant economic problem" (Darling 1955: 192); the other identifies the landscape "as a wilderness of mountain flanked glens and mist shrouded islands, inhabited by a quaint, noble and once warlike race" (Lorimer 1999: 518). Darling (1945: 192-193) sums up the first viewpoint throughout his influential book on crofting agriculture:

> It is possible that the wilderness value of the West Highlands for the jaded townsman will still be sufficient to justify a large subsidy to maintain a sufficient population of people following practices of misuse to prevent any natural healing of the devastation. . . . Man in numbers, combative and political man, who has no place in nature, has entered this complex organism like a protozoan parasite in its blood-stream and had brought the organism to a state of debilitation. . . . The greatest value the mass of Highland land could give to the nation would be as a continuing productive wild land in which perhaps twice as many people could live than are there at present. . . . A period of a century is probably needed together with skilful management, to repair the damage . . .

Thirty years later, Bryden and Houston (1976), commenting on the ability of the recently formed Highlands and Islands Development Board (HIDB) to effect socio-economic improvements in the crofting areas, diagnosed the "problem" in somewhat different terms but reiterated Darling's sentiment:

> [In] the 1960s the central problem was widely considered to be depopulation . . . . Unless special measures were taken, it was argued, many areas would soon reach a critically low level of population density, the continuation of basic public services would be threatened and, at best, only a semi-derelict economy would survive. [And] since the main cause of the Highland problem in agriculture appeared to be the main cause of the Highland problem in the 1960s, it seemed absurd to look on the development of that industry as helping towards its solution (Bryden and Houston 1976: 132).

Development planners within the HIDB analyzed the socio-economic "problem" as stemming from subsistence agricultural practices, protected from market forces, largely as a result of crofting —"a stultifying form of land tenure" (Highlands and Islands Development Board 1967: 4, quoted in Carter 1974: 293). However, without crofting agricultural activity and the security of tenure associated with the institution of crofting, it is doubtful that a population large enough to engender a local economy would exist in the Northwest Highlands today (Hunter 1991). Furthermore, the modernization ideology of the 1960s has been replaced today by nature conservation as the driver of landscape change. Production subsidies are in the process of being replaced by an assortment of area-based and management activity subsidies that act as incentives for crofters to pursue environmental and conservation objectives as well as social and economic development. An equally diverse array of government landscape designations (which include Sites of Special Scientific Interest, National Nature Reserves, National Scenic Areas, Special Protection Areas, Special Areas of Conservation, Areas of Great Landscape Value, Listed Wildlife Sites, Sites of Importance for Nature Conservation, and Biodiversity Action Plans), aimed at reviving the area's "natural heritage," are an increasingly important factor in the local economy, although these are rarely directly related to the economics of "traditional" crofting. Furthermore, if Europe's new carbon management agenda is not carefully integrated into existing agricultural policy and support schemes, this is likely to have an adverse effect on crofting in the Northwest Highlands, leading to further stock reductions and a spiral of decline in crofting activities (Quill and Cook 2007).

Crofting and its association with cultural heritage is central to the popular currency of modern tourism, the mainstay of the economy in the Northwest Highlands today (Rohde 2004). At the same time and for similar reasons, the myth of the area as "wilderness" is given increased symbolic importance in the promotion of tourism, as well as by conservation NGOs and the defenders of deer-stalking on sporting estates (MacDonald 1998). These contradictory ways of seeing the environment have become "naturalized" in the landscape, corresponding closely with Darling's prescient vision. It would seem that the contradictory ideological discourse on nature and society that places traditional crofting society in a wilderness arises out of today's neo-liberal economy and the globalization of the conservation lobby.

From an ecological perspective, the lack of agricultural activity now evident in the crofting areas, especially the more marginal townships, represents a distinct hiatus in the area's long history of intense anthropogenic disturbance. The changes evident in the brief period of 75 years depicted in the repeat photographs is but the latest of a long series of transformations, stretching back several millennia, brought about by the impact of humans within this evolving landscape. Although recent, the detail and clarity of these images are a valuable source of evidence towards understanding the environmental history of the Northwest Highlands. They also

help to put into perspective the discourse of political ecology related to the relative values of cultural landscapes, wilderness areas, and natural heritage, all of which have been "written on the surface of the soil" and continue to influence the way we see and respond to this landscape today.

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