

How does the natural heritage contribute to local economic development in Scotland?

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Abstract

Protected areas and the wider natural heritage are increasingly being promoted to local communities as opportunities for new economic and social developments. This paper considers the potential benefits from natural heritage in Scotland. A range of economic activities that are related to the natural heritage and wider environment can be identified. Of these, environment-related tourism appears to offer greatest potential for all but the most fragile remote sites. However, the potential benefits vary according to the specific type of activity, as well as with differences in site characteristics and the rural economies within which sites are located. The paper concludes that there is scope for further enhancing the benefits accrued by local communities from the natural heritage through appropriate area-specific policy action.

1. Introduction

Historically, rural communities have considered the physical environment as either a constraint to be overcome or as a resource to be exploited in production (Hoggart, Buller and Black, 1995). However, fundamental changes in the conception of the environment and the growing prioritisation of environmental issues have led to a new alternative role for the environment in rural areas. In particular, it is increasingly recognised that the level and quality of the natural heritage within an area can, indirectly, give rise to economic opportunities. Indeed, many argue that it is natural heritage and amenity values that are now the main determinants of the comparative advantage of rural areas and their development opportunities.

This paper considers the range of opportunities and constraints associated with realising the economic benefits associated with the natural heritage in Scotland. The paper begins with a brief overview of natural heritage in Scotland and the types of associated economic activity. This is followed by a more detailed consideration of the economic benefits associated with conservation activity and environmental-related tourism, and a consideration of some of the factors that influence the ability of local communities to maximise these benefits.

2. Scotland's natural heritage

Scotland is a relatively small country by European standards, with a land area that covers some 82,000 km². (How does this compare with Bulgaria?) However, despite its relatively small size Scotland's natural heritage, its plants and animals, geology and landforms, is remarkably diverse. Of the 37 "broad habitats" identified under the UK Biodiversity Action Plan (Jackson, 2000), some 20 occur in Scotland (Table 1).

Table 1 Estimated broad habitat extent in 1998 (SNH 2001)

	Lowland (km²)	Marginal upland (km²)	Upland (km²)	Scotland (km²)	Scotland (%)
Bog	1,170	8,840	10,370	20,380	25
Improved grassland	6,600	2,990	920	10,510	13
Dwarf shrub heath	910	2,200	6,910	10,020	12
Coniferous woodland	1,710	3,510	4,720	9,930	12
Acid Grassland	840	1,590	5,060	7,480	9
Arable & horticultural	5,360	1,000	40	6,390	8
Fen, marsh & swamp	710	1,770	890	3,370	4
Broadleaved, mixed & yew woodland	1,180	710	1,110	3,000	4
Others	3,900	4,550	2,010	10,490	13
Total	22,380	27,160	32,030	81,570	100

The eight largest terrestrial habitats account for around 87% of Scotland's total land area.

Including the surrounding seas, these habitats may support around 90,000 native species (Usher, 1997). It is estimated that around 30 Scottish species occur nowhere else in the world (SNH, 2001).

3. Nature conservation and recreation designations in Scotland

Scotland has a multi-layered system of land designations aimed at protecting and managing the natural heritage, with a large proportion of Scotland's total land area falling under one or more types of natural heritage designation. Each designation has its own objectives, but they can be broadly split into those primarily aimed at conservation of natural heritage, such as National Nature Reserves (NNRs), those aimed at supplementing national planning policy, such as National Scenic Areas, and those aimed at co-ordinating the management of informal recreation alongside other land uses, such as the Regional Parks. Table 2 shows the number of sites and the area of land covered by the main nature conservation and recreation designations in Scotland.

**Table 2. Main natural heritage conservation and recreation designations in Scotland
(as at 31 March 2000)**

Designation	Number of sites	Total land area (ha)
Nature Conservation		
National Nature Reserves (NNRs)	71	114,098
Sites of Special Scientific Interest (SSSIs)	1,458	990,809
Special Protection Areas (SPAs) – Natura 2000	113	391,234
Special Areas of Conservation (SACs) – Natura 2000	134	717,862
Ramsar Sites	48	240,487
Biosphere Reserves	2	2,358
Biogenetic Reserves	2	2,388
World Heritage Sites	1	833
Local Nature Reserves	30	9,309
National Planning Policy		
National Scenic Areas	40	1,001,800
National Parks (proposed)	2	NA
Informal countryside recreation		
Regional Parks	4	86,160
Country Parks	36	6,481
Long Distance Routes	5	731 km

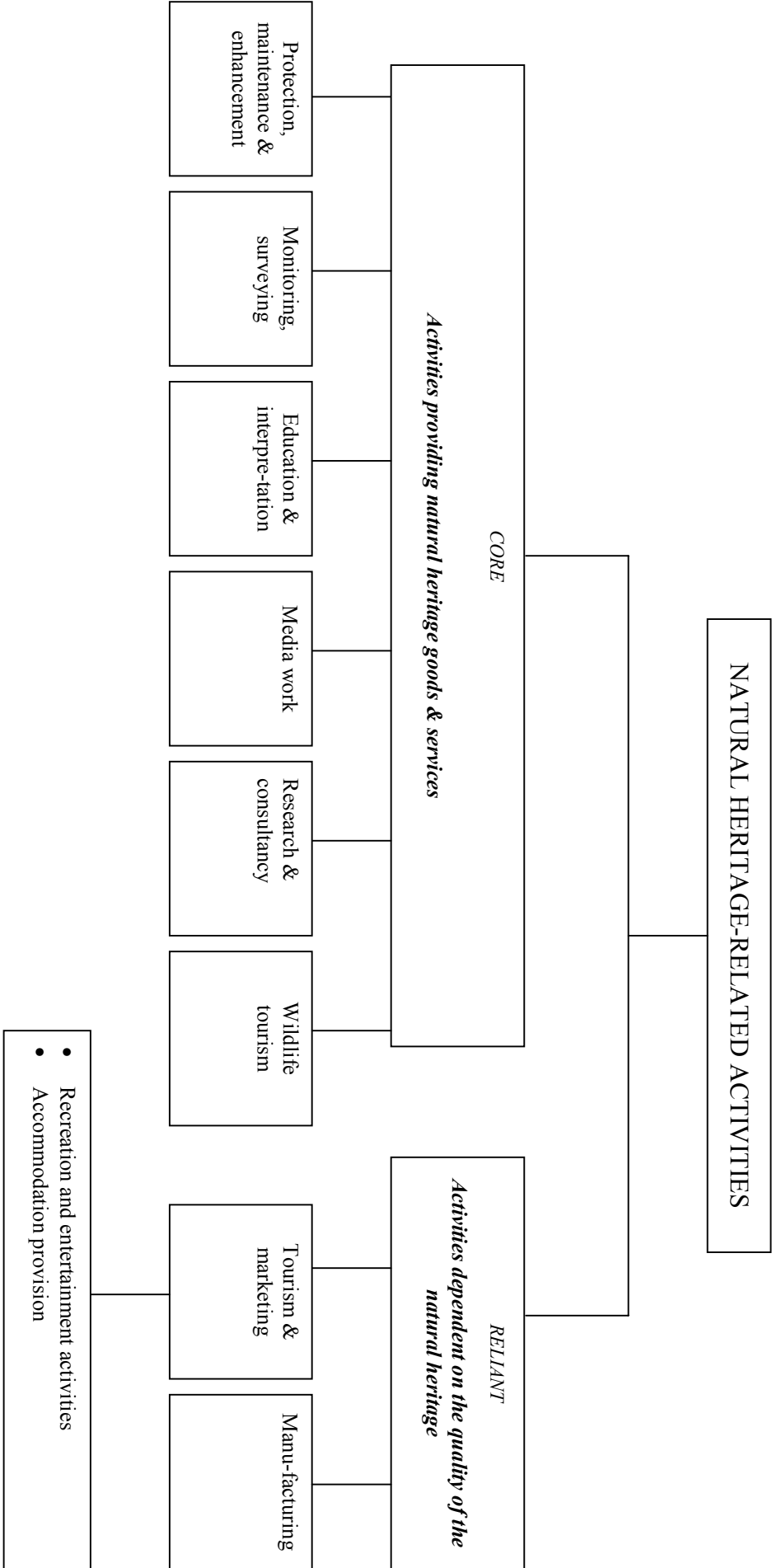
Sites of Special Scientific Interest (SSSI) represent the mainstay of national natural heritage designations in the UK. In Scotland there are over 1,450 SSSIs covering 990,000 hectares, around 12% of the total land area (SNH, 2000). There are currently two National Parks proposed for Scotland, the Loch Lomond and Trossachs National Park is expected to be established on 1 April 2002.

4. Natural heritage and the economy

The last few decades have seen major changes in the nature and role of rural Scotland. Most, if not all areas, have seen a decline in the importance of traditional rural sectors such as agriculture and fishing. In contrast, service-sector activity has grown in importance with rural Scotland experiencing a 23% increase in employment in the service sector between 1991 to 1997 (SERAD, 1999).

Arguably one of the most important drivers of change in rural Scotland has been the changing way in which people perceive and value the natural environment. Increasingly, it is recognised that the level and quality of the environment in an area can give rise to economic opportunities, particularly in the more remote, economically fragile areas. There is a range of economic activities that can be associated with the environment and natural heritage. In a recent study for SNH (Hill *et al.*, 2002) distinguish between two categories of activity. The first category of 'core' activities includes "activities that are directly related to the management of the natural heritage, or those that help people to understand or enjoy it" (SNH, 1998). The second category of 'reliant' activities includes those activities to which the natural heritage forms a backdrop. Reliant activities include a wide range of tourism activities (other than wildlife tourism which is a 'core' activity), as well as those activities that are involved in the manufacture and marketing of goods that embed environmental values, i.e. green consumerism. Figure 1 presents a detailed classification of natural heritage activities.

Figure 1. Classification of natural heritage related activities (Hill et al., 2002)



5. Economic benefits from conservation activity

Conservation jobs in environmental protection, quality maintenance and enhancement are estimated to account for over half the total employment in ‘core’ natural heritage activities in Scotland (Table 3).

Table 3 Core natural heritage-related jobs in Scotland (SNH, 1998)

	No. of Jobs	%
1 Environmental protection, quality maintenance & enhancement*	4,280	52
2 Environmental survey and monitoring	1,065	13
3 Environmental education and interpretation	1,390	17
4 Wildlife tourism	800	10
5 Environmental archaeology	50	1
6 Environmental media work	95	1
7 Environmental consultancy	290	4
8 Environmental equipment design and production	260	3

*These figures do not include agricultural employment arising from agri-environment schemes.

In the UK there is an increasing range of policy initiatives aimed at encouraging land management practices that protect and enhance the natural heritage value of the countryside. These initiatives lead to employment in the conservation sector as well as in other sectors such as agriculture. Examples include individually negotiated SNH management schemes on SSSIs and other area-based SNH schemes, the EU LIFE-NATURE scheme¹ aimed at Natura 2000 sites, and agri-environment schemes such as the Environmental Sensitive Areas (ESA) Scheme and the Countryside Premium Scheme. These schemes are either compensatory for profit forgone arising from imposed management requirements; payments for management measures, financial support for conservation initiatives or payments designed to maintain traditional farming and to encourage the production of public environmental goods. Table 4 gives some examples

¹ The EU LIFE scheme is rather different than the other projects mentioned in that it is aimed more at the public and voluntary sector than private land owners, to fund land purchase and employ people to manage individual schemes.

of the different SNH land management agreements, whilst Table 4 shows the total payments committed under the ESA scheme in Scotland over 5 years to 1997.

Table 3. Examples of payments made to a selection of SNH management agreements during the year to 31 March 2000 (SNH, 2000)

	No. of agreements	Area covered by agreements (ha)	Total payments £000	Mean £/ha
SSSI Management Agreements (SNH)	393	64,932	1,854.0	28.55
Caithness & Sutherland Peatland Management Scheme	127	122,227	175.9	1.44
Solway Merse Management Scheme	40	1,413	47.0	33.28
Solway Barnacle Goose Management Scheme	32	1,784	82.1	46.05
Islay Voluntary Goose Management Scheme	118	40,000	418.1	10.45

Table 4. Committed capital and recurrent expenditure on approved ESA schemes in Scotland over 5 years as at 1 November 1997 (Crabtree et al., 2000)

	Total entrants	Area (ha)	Total expenditure (£000)	Mean £/ha
All ESAs in Scotland	1,349	526,800	23,420.6	44.45

In addition to the people directly employed as a consequence of conservation activity, there are indirect and induced employment benefits arising from expenditure on inputs and expenditure of conservation employees respectively. Funds aimed primarily at nature conservation are often targeted at specific sites. Where this is the case the site owners/managers are the main beneficiaries with some indirect and induced benefits falling to the local community. Overall, the impact of these schemes on the economy can be both positive and negative depending on the degree to which the scheme stimulates conservation work or restricts agricultural production. However, due to the different patterns of upstream economic linkages the local economy tends to be a net gainer in

employment from increases in conservation work, whilst job losses from reductions in agricultural production often fall outside the local area (Crabtree *et al.*, 2000).

6. Economic benefits from tourism activity

Of all natural heritage-related activities, environment-related tourism is generally regarded to be the most significant in terms of local economic benefits. Taking into account the difficulties of quantifying environmental additionality, estimates suggest that conservation activity supports 4 to 6 times as many jobs by attracting visitors to rural areas than it employs directly (Rayment, 1995; ERM, 2000). Quantifying the contribution of the natural heritage to the economic benefits associated with tourism activity is complex. However, it is possible to distinguish between those activities where the natural heritage clearly plays a central role in the activity, such as wildlife tourism, and those, which supply a service to all visitors to the area only some of which are attracted to the area by its nature and landscape, for example, accommodation provision.

Importantly, in addition to sustaining employment directly, tourism may generate substantial additional spending in the locality and support local services such as shops, garages and public transport of importance to the rural community. Significantly, in a recent study of local economic linkages and the natural heritage in Scotland, both ‘core’ and ‘reliant’ activities had stronger multiplier effects than other activities, i.e. they were found to have greater potential for generating local benefits in the area in which they were sited (Hill *et al.*, 2002). However, in contrast to the economic benefits arising from conservation, local communities are more likely to be the main beneficiaries of environment-related tourism with only limited opportunities for conservation site owners/managers to directly exploit these markets.

Nevertheless, there are some opportunities for wildlife sites, and recent technological advances, particularly the development of CCTV, has enabled far more visitors to “see” animals and birds than was previously the case. This has also reduced the disturbance to animals and birds under observation, and provided valuable links to other existing visitor facilities in the area. Examples of individual wildlife tourism projects in Scotland include those with a general natural history theme, such as the Ardnamurchan Natural History Centre, and those focussed specifically on high profile ‘flagship’ species on wildlife, such as Operation Ospery at Loch Garten, Dolphin watch at North Kessock and the Kylwerea Otter Haven.

For many other projects wildlife tourism represents just a part of a broader pattern of land use. For example, the privately owned Rothiemurchas Estate offers recreational opportunities that run alongside the estates more traditional agricultural and forestry enterprises. These include a visitor centre and shops, walks, cycle hire, land rover tours, fishing, clay pigeon shooting and birdwatching. These are all integrated within a management regime that aims to conserve the considerable wildlife interest on the estate.

7. Barriers and constraints to achieving socio-economic opportunities

Given the wide diversity of wildlife and landscape characteristics between locations it is not surprising that there is wide variability in opportunities for economic development between communities. For local communities, it is important to identify the factors that limit the type and magnitude of benefits, particularly those that are within their control. It is arguably equally important for policymakers to identify those factors outside community control in order to target assistance and to ensure limited developmental funds are used efficiently. A number of inter-related factors can be identified.

Ecological and geographical constraints

In ecological terms, habitats and species being conserved can directly influence the level of funding flowing into the area. Likewise, the number of potential visitors to a site is heavily influenced by ecological characteristics, with high profile ‘flagship’ species attracting much greater visitor interest than others. However, the fragility and vulnerability of many habitats and species may constrain the type and level of leisure opportunities that can be developed.

Geographical factors such as nearness of the site to areas of population, and accessibility also play a part in determining the type, scale and structure of any potential environment-related tourism.

Economic constraints

Both conservation and tourism are clearly dependent on factors associated with the general performance and structure of the local and wider economy. For example, the demand for both tourism and environment-related products are a function of income levels in the wider economy and exchange rates, whilst the state of the macro-economy will influence the level of public funds allocated for conservation management.

At the local level, tourism enterprises and activities associated with green consumerism are often small scale, marginally profitable operations, run as additional activities for individuals who also gain income from other activity, often fishing or farming. Consequently, the relative success of other sectors of the local economy can be highly instrumental in the viability of such ventures and the willingness of local actors to undertake new initiatives.

Importantly, opportunities to develop tourist-related enterprises may be restricted by a lack of tourism infrastructure, marketing expertise and trained personnel.

Institutional constraints

Access to capital and revenue support funding is a major institutional factor influencing the type and magnitude of natural heritage-related economic opportunities open to a community. Funding support for new initiatives often comes from a range of different sources, is delivered through a diverse range of mechanisms and institutional arrangements and may be targeted at different land designations or community groups. The range and scale of funding support that any one site or individual may qualify for may be dependent on a whole range of circumstantial factors. Generally, those communities with active networks and partnerships are likely to be best placed to take advantage of any funding opportunities that exist.

Human constraints

Demographic change, social cohesion, education, cultural values, aspirations, confidence and experience are all human factors that play an important part in determining the relative success of local communities in responding to changing economic circumstances. Invariably new initiatives rely on the leadership, energy and enthusiasm of aspiring, active and committed individuals. However, rarely do all community members share the same aspirations, or exercise equal power. This can be a significant barrier for small communities where the successful development of any initiative requires the co-operation and participation of individuals that control key resources. Here, the development of local community partnerships can be significant, building social cohesion, raising levels of confidence and generally enhancing a community's ability to deal with change.

8. Discussion and conclusions

Protected areas and the wider natural heritage are increasingly being promoted to local communities as opportunities for new economic and social developments. This paper has considered some of the potential opportunities and some of the barriers that must be overcome if these opportunities are to be realised.

Whilst there are a range of opportunities, conservation and environment-related tourism account for the majority of natural heritage-related employment. Given the potential of growth in tourism activity and in general interest in wildlife and the environment, environment-related tourism appears to offer considerable further potential for all but the most fragile sites and remote locations. Furthermore, tourism activities can provide a valuable complementary activity for individuals involved in the more traditional declining rural sectors such as agriculture and are also relatively well integrated into the local economy with good potential for generating local economic benefits. However, access to funding is likely to be a vital ingredient in ensuring adequate tourism and marketing infrastructure and experience exists to support new initiatives.

Overall, opportunities vary considerably between locations, as do local priorities. This suggests the need for area specific strategies and policies to maximise the potential role of the natural heritage in rural development. However, a few general points can be identified:

- Wildlife and environmental tourism offer considerable economic potential.
- Need to develop adequate tourism infrastructure

- Need to develop co-ordinated marketing strategy at local, regional and national levels.
- Local areas need to exploit their comparative advantage, e.g. 'flagship' species.
- Communities with active networks and partnerships are likely to be best placed to take advantage of any funding opportunities that exist.
- The co-operation and participation of individuals that control key resources is essential.

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