Balancing social, economic and environmental pressures through integrated river basin management in the Cairngorm Mountains of northeast Scotland

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Abstract The rivers of the Cairngorms area are of great importance from an environmental, social and economic perspective. Opportunities have been identified to improve management of the rivers. This has been achieved through consultation and consensus building with key governmental and non-governmental organizations and special interest groups. The need for a sustainable and integrated strategy for the management of the rivers across the whole geographical area of the Cairngorms area is demonstrated. This is a significant departure from previous management regimes which tended to be largely sectoral, localized and fragmented in approach.

Key words: Cairngorm Mountains, Scotland; catchment management planning; integrated river basin management; Scottish rivers; sustainable rivers

INTRODUCTION

The Cairngorm Mountains are located in the northeast highlands of Scotland (Fig. 1). The rivers have numerous national and international conservation designations for their biodiversity and the high quality of freshwater habitats. Activities based on the rivers, such as whisky distilling, tourism and salmon fisheries, are fundamentally important to the local and national economy. The rivers are also important in a broader social context by providing opportunities for recreation and amenity for local people and visitors. This variety of uses provides opportunities for conflict, especially when they are coupled with land use change and potential climate change.

The Cairngorms Partnership (the Partnership) is developing a Rivers Strategic Management Plan which, by an integrated approach, seeks to balance the economic, social and environmental pressures on the Cairngorms rivers. The Partnership includes the key organizations involved in managing the area, such as the environmental regulators: Scottish Natural Heritage (SNH) and the Scottish Environment Protection Agency (SEPA); the District Salmon Fishery Boards; the local planning and development authorities; the water authority; and key industry and community representatives. Its management objectives for the rivers are to maintain and enhance the quality and quantity of water within the catchments, to improve fisheries, to reconcile the social, economic and environmental pressures on the rivers, and to maintain the provision of flood protection and warning, allowing where practicable the restoration of natural flood plain (Cairngorms Partnership, 1997).
BACKGROUND

Catchment management planning in the United Kingdom has been largely limited to plans developed by the National Rivers Authority in England and Wales (Woolhouse, 1994). Within Scotland, the fragmented nature of the legislation and the number of organizations involved in river basin management has led to a largely sectoral approach. Recent reviews have investigated how a more integrated approach to catchment management may be taken forward (e.g. Environmental Resources Management, 1998). A major impetus for this will be the forthcoming EU Water Framework Directive (European Commission, 1999). This will place integrated catchment management in a statutory framework. Pilot management plans are being initiated for the River Spey (personal communication, Spey Catchment Steering Group, 1999) and the River Dee (SEPA, 2000) in the Cairngorms area.

NEED FOR AN INTEGRATED APPROACH

In advance of the implementation of the EU Water Framework Directive, the Partnership recognized the value of a proactive and strategic approach to the management of the river catchments in the Cairngorms, which could provide a basis for integrated and sustainable management by consensus and cooperation. In doing this, a long-term perspective is being adopted to ensure that, as far as current science understands, policies implemented now will not cause problems in the future.
The Partnership’s area, as identified in Fig. 1, does not include the lower catchments of any of the main rivers. Consequently, the strategic plan focuses particularly on the headwaters and upper catchments of major river systems. As headwaters exert such a strong influence on the hydrology and ecology of downstream areas, a consistent approach to the sustainable management of upper catchments will help underpin catchment-based initiatives on rivers such as the Dee and the Spey.

An integrated approach is necessary in the Cairngorms because the traditional, sectoral approach has, in some cases, led to conflicts. Also, rivers have tended to be managed on a localized reach by reach basis, which has not always recognized that activities at one point in the catchment can have adverse, and sometimes far reaching, impacts elsewhere. Activities can also, sometimes inadvertently, have impacts across sectors. Hence the development of a common understanding and integrated approach to management is essential in developing sustainable practices across all catchment issues. Furthermore, a coordinated and strategic approach is needed as individual proposals may often have a small-scale impact, yet when combined with proposals in other sectors, the cumulative effect can be significant. The effects of incremental change can also be detrimental, though the impact of individual elements may be minor.

A large number of organizations are involved in managing the Cairngorms rivers. Each has its own remit, objectives, priorities and timescales. Many have statutory duties and powers within their own sphere, though these often interact with other statutory agencies. There are numerous communities, individual landowners and tenants and other organizations (including environmental, recreational, industrial and business interests), who have an involvement in managing the rivers or whose activities impact on them.

Whilst each river and catchment has its own particular set of issues and problems, many of these are generic even though they may have specific manifestations at particular sites across the area. A coordinated approach and a sharing and implementation of best management practices across all catchments could therefore generate major gains for the area as a whole.

The context of the strategic management plan is shown in Fig. 2. Underpinning the plan are the key elements of European, UK and Scottish legislation and policy regarding the water environment. The strategic management plan supports individual river, geographical area or sectoral plans, which in turn provide the basis for individual estate, enterprise, farm or forest plans. The aim is to ensure an overall consistency between the different plans, which should complement rather than duplicate each other.

IDENTIFICATION OF ISSUES

During the investigation, extensive consultation took place with stakeholder organizations with a key interest in managing the rivers of the Cairngorms. Existing policies and management plans were collated. Any conflicts were noted. Major issues were identified through discussion with consultees to identify where it was felt there were important challenges on which the Partnership should focus its work on rivers. Gaps were recognized between the various policies and plans, which if addressed, would provide an opportunity to enhance management of the rivers.
The investigation was as inclusive as possible in order that as many key players as possible could be involved. The aim was to develop a consistent, though not necessarily identical, approach across all the catchments. However, the issues and solutions, whilst broadly similar, may require modification to address catchment specific issues. The investigation will aid future planning by identifying current issues, whilst recognizing that the catchments themselves are evolving and subject to natural and anthropogenically induced change.

A total of 38 organizations were consulted. There was discussion with key partners such as SNH, SEPA, District Fishery Boards, local authorities, the water authority, the hydroelectric company and the Scottish Executive. Non-governmental environmental organizations such as the World Wide Fund for Nature and the Scottish Wildlife Trust were consulted. Land-owning, recreational and tourism interests were also approached. The consultees provided information on over 130 policies and plans relating to the Cairngorms rivers. The plans cover a range of activities and include formal written plans and policies and also relevant informal policies and plans.

Key issues were identified which were felt by consultees to be major challenges facing the rivers. Generic rather than site specific points were identified, though often site specific examples were given as illustrations. Site specific issues were felt to fit better into individual river or geographical area initiatives, whilst the generic points were more useful in identifying common themes across the whole Cairngorms area.

In identifying issues, attention was focused on the Partnership's area. However, it was important to recognise the interaction of upstream and downstream effects with, for example, flood risk often occurring downstream of the Partnership's boundary with potential solutions perhaps upstream within the area. There are also interactions with catchments outside the Partnership's area, for example due to the inter-basin transfer of water. At an even larger scale, the rivers of the Cairngorms provide significant interactions in national and even international terms. For example, the rivers provide a focus for visitors from outside the area and even beyond the UK. The economic contribution of activities relying on the rivers is important to the economic well-being of not just the immediate area but also to Scotland as a whole. At a global level,
hydropower generated using the water from the rivers is significant in helping the UK to reduce its fossil fuel dependence and meet carbon reduction targets under the Kyoto agreement.

The discussions highlighted a large number of issues facing the Cairngorms rivers. The majority are cross-sectoral. The issues were assigned an importance and cross-referenced, where possible, to the Partnership’s strategic objectives for water. Most of the issues link to these or to other elements of the Partnership’s management strategy. However, the decline in protection of species other than salmon, the landscape value of rivers, biodiversity impacts of alien species, public health issues and non-salmon fisheries were seen as important or highly important by consultees but are not overtly mentioned in the Partnership’s strategy.

OPPORTUNITIES FOR ENHANCED MANAGEMENT

Following the discussions with consultees, a large number of opportunities were identified where enhanced management could be realized by developing a more integrated and sustainable approach to the management of the rivers. Many of the opportunities interact with each other, so the overall benefits are likely to be more than the sum of the individual components. In all, 30 specific recommendations were made to enhance management of the rivers. These ranged from the development of water level management plans to the assessment of the risks of water-borne diseases. With so many opportunities to enhance the management of the rivers, it is essential that a structured and co-ordinated approach is taken to ensure resources are utilized effectively and efficiently to deliver real improvements. The successful delivery of the strategic management plan will require a commitment in terms of time and resources from all the partners and a number of other external organizations who have a clear interest in managing the Cairngorms rivers.

Whilst assessing the time and resourcing requirements to deliver the Strategic Management Plan is a matter for the next stage of the process, the scale of the time and resourcing requirements to deliver the recommendations should not be underestimated. Many of the recommendations relate to the setting up of the key initiatives on a whole river or Cairngorms wide basis, such as the development of a co-ordinated habitat improvement programme. Such initiatives may cost several million pounds over a number of years. At the other end of the scale, for example, setting up of best management practice forums and developing mechanisms for data exchange depend on the provision of (mainly) staff time rather than capital costs, so are of more modest proportions, providing adequately skilled staff are available. Other suggestions, such as the need for a strategic approach to river maintenance, would require a commitment to recurring operating costs on an ongoing basis. A further group of recommendations, reflect a need to encourage a shift in policy rather than carry out works on the ground. Other recommendations relate to specific management projects, e.g. the development of a recreation and amenity strategy. Whilst such documents need to be updated to reflect changing circumstances, they are, in resourcing terms, largely a “one-off” exercise. Overall the recommendations split into 3 long-term programmes involving major investment, 14 “one-off” management projects, 9 commitments to increased/new ongoing operational activity and 4 campaigns to encourage policy shifts.
The Partnership is currently discussing the way forward. The next step will be to identify target outputs and timescales against individual recommendations in order that resources can be identified and the Strategic Plan initiated.

CONCLUSION

Key issues have been identified by consultation and consensus building with the key organizations involved in managing the rivers of the Cairngorms. Various special interest groups were involved, representing for example, recreation and land-owning interest and the community. Existing management plans and policies were collated and gaps identified where action can be taken to improve the management of the rivers. The opportunities cover a range of issues involving water resources, water quality, flood alleviation, fisheries, ecology, recreation and land-use management. The key feature is their cross-sectoral nature. The need for a sustainable and integrated strategy for the management of the rivers across the whole geographical area of the Cairngorms is well demonstrated. This is a significant departure from the previous, largely sectoral, localized and fragmented approaches.

Acknowledgement The author thanks the Cairngorms Partnership for permission to publish this paper.

REFERENCES


