

CHALLENGES OF IMPLEMENTING AN ECOSYSTEMS APPROACH IN THE CAIRNGORMS NATIONAL PARK

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SUMMARY

The experience of introducing the ecosystems approach into strategic planning for the Cairngorms National Park shows both benefits the approach could bring to management and the challenge that remains to implementing the approach in a particular area.

In the context of the Scottish Government's Land Use Strategy, National Parks offer a place-based approach in which sectoral remits (such as farming, forestry, water management) can be better aligned to regional priorities, and more proactively promoted through land management networks.

Scotland's National Parks are places where an ecosystems approach is an effective way to manage large scale areas requiring integrated management. This paper reflects on the experience of managing the Cairngorms National Park and the challenges and opportunity of developing the ecosystems approach in practice. Many of the building blocks for taking an ecosystems approach exist in the Park – good networks for collaboration, rich data, a statutory framework of governance for integrated management, all supported by a management plan tailored to the needs of this discrete area. But there remains a challenge to integrate data, effort and the priorities of traditionally separate sectors to make this happen.

INTRODUCTION

The Scottish Government's Land Use Strategy defines an ecosystems approach in line with the Convention of Biological Diversity 1993 as 'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way'.

The Strategy identifies three building blocks to implementing an ecosystems approach:

- Consider natural systems.
- Take account of the services that ecosystems provide.
- Involve people.

This paper draws on experience so far in the Cairngorms National Park to consider some of the challenges and opportunities of putting this approach into practice in a defined spatial area.

RELEVANCE OF AN ECOSYSTEMS APPROACH TO SCOTTISH NATIONAL PARKS

The draft Cairngorms National Park Plan 2012-2017 calls for an ecosystems approach to managing the Park. This is needed for two reasons: integration and scale. The need for integration is built into the aims of Scottish National Parks, which are:

- (i) to conserve and enhance the natural and cultural heritage of the area;
- (ii) to promote sustainable use of the natural resources of the area;
- (iii) to promote understanding and enjoyment (including enjoyment in the form of recreation) of the special qualities of the area by the public; and
- (iv) to promote sustainable economic and social development of the area's communities.

The aims are to be delivered collectively and in a co-ordinated way. Where there is a conflict with the first aim (i) and the other three, the National Parks (Scotland) Act requires that greater weight be given to the first aim.

This is in essence a sustainable development agenda, where the value of natural assets is recognised as well as the need to manage them for the benefit of all including future generations. This means there are inherent tensions to be managed. The aims must be delivered collectively, in a way that does not undermine the qualities which underpin the area's designation as a National Park.

Together with the scale of the Cairngorms National Park (at 4,500 sq km the UK's largest), the need to deliver these four aims collectively reinforces the need to think and plan in terms of systems and connections – an ecosystems approach.

In the context of the Scottish Government's Land Use Strategy, Scotland's National Parks should perhaps find it easier than some areas to implement an ecosystems approach. The Cairngorms National Park has:

- rich data covering a significant timespan;
- established stakeholder networks covering the scope of the Park aims; and
- a governance model based on collaboration and co-ordination rooted in legislation.

ECOSYSTEM SERVICES IN THE CAIRNGORMS NATIONAL PARK

To inform management planning CNPA identified and consulted on the principal ecosystem services provided in the Park as part of the Strategic Environmental Assessment for the National Park Plan. A summary of some of the ecosystem services identified is given in Table 1.

This reflects the broad categories of ecosystem services used in the UK National Ecosystem Assessment (UK NEA) but does not include supporting services (such as nutrient and water cycling) which are assumed as required for the delivery of other ecosystem services in all habitats. Given the particular importance and influence of both montane and moorland areas in the Cairngorms in both habitat and land use terms, the assessment considered mountains and moorland as separate habitat types.

Table1: Ecosystems services in the Cairngorms National Park

Habitat	Ecosystems services or benefits that this habitat is most important for
Enclosed farmlands	<ul style="list-style-type: none"> • Provisioning: food. • Regulating: soil and water quality, carbon storage, pollination. • Cultural: landscape, sense of place, living culture.
Woodlands	<ul style="list-style-type: none"> • Provisioning: timber (material and fuel), diverse habitats and species. • Regulating: soil and water quality, soil stability, carbon storage, shelter, pollination. • Cultural: landscape, sense of place, ecological knowledge, tourism and recreation, living culture.
Open water	<ul style="list-style-type: none"> • Provisioning: water, species and habitats. • Regulating: local climate regulation, flood regulation, water quality. • Cultural: landscape, tourism and recreation, sense of place, ecological knowledge.
Mountains	<ul style="list-style-type: none"> • Provisioning: rare and fragile species and habitats. • Regulating: climate regulation, soil and water quality, pollination and seed dispersal. • Cultural: landscape, tourism and recreation (including snow sports), sense of place, living culture, ecological and geological knowledge.
Moorland	<ul style="list-style-type: none"> • Provisioning rare and fragile species and habitats. • Regulating: soil and water quality, carbon storage, pollination. • Cultural: landscape, tourism and recreation, sense of place, ecological knowledge.
Semi-natural grasslands	<ul style="list-style-type: none"> • Provisioning: food via livestock, distinctive wild species and habitats. • Regulating: soil and water quality, carbon storage, pollination. • Cultural: landscape, tourism and recreation, sense of place, knowledge.
Urban	<ul style="list-style-type: none"> • Provisioning: shelter. • Regulating: local climate regulation, pollination. • Cultural: settlement patterns, sense of place, tourism and recreation.

Source: Draft National Park Plan 2012-17 Environmental Report (www.cairngorms.co.uk).

The focus on ecosystem services brings a sense of strengths in terms of natural assets and opportunities to enhance this natural capital, as well as identifying potential weaknesses and threats. For example, woodlands provide a large range of services from timber provision to

carbon storage to tourism and recreation opportunities. The cultural services are particularly prominent, given the expectations for visitor experience that National Park status brings.

CNPA has introduced the ecosystems approach into the development of the next National Park Plan (2012-17) and its associated Strategic Environmental Assessment. The National Park Plan sets out the outcomes and priorities that all government bodies together with private and voluntary sector partners deliver for the area. The draft National Park Plan seeks to engage people in shaping the future land use strategy for the Park, essentially seeking to implement the principles of the Scottish Government's land use strategy as they relate to the Cairngorms. The UK NEA habitat types provide a useful framework in which the draft plan sets out a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis for each habitat to stimulate discussion.

The same UK NEA habitat framework was used in scoping the Strategic Environmental Assessment (SEA). The SEA for the National Park Plan uses ecosystem services to identify the most relevant environmental issues and questions. This allowed the SEA questions to be more tailored to the management issues rather than generic topic-led questions, and therefore more useful to the plan preparation. Further analysis of the range and interaction of ecosystem services in the Park would allow this approach to be taken further in informing the assessment. In particular, an ecosystems approach could significantly strengthen the assessment of cumulative effects, making this the principal focus of an SEA. This approach could offer a better insight into the cumulative effects of a plan, which at present are usually the most difficult to assess.

CHALLENGES AND OPPORTUNITIES

These are considered in terms of the three building blocks identified in the Land Use Strategy.

Consider Natural Systems

An ecosystems approach provides an effective framework for management planning and consultations to consider natural systems. A valuation of ecosystem services is not needed to build this approach into planning, rather it involves simply identifying the ecosystem services connected to broad habitat types. SEA offers a useful way to use the approach by using ecosystem services to identify significant environmental issues. Focusing on systems rather than individual sectors does mean that the standard topics identified in current SEA guidance may have less prominence but a brief cross check can ensure the relevant factors have been covered. In many cases the SEA factors, such as air, soils, water, biodiversity represent the environmental assets from which ecosystem services flow, so they are inherent. Using ecosystem services encourages the full range of interactions between these components to be considered, including for example, the movement of water through soils and vegetation and implications for flood management.

A Cairngorms National Park Knowledge-Exchange workshop in 2010 brought together different research disciplines and practitioners to identify research priorities, inter-disciplinary connections and opportunities to connect research and practice. One of the main outcomes of the workshop was a call for inter-disciplinary research on ecosystems

management to be carried out and applied to one place, in this case the National Park, in order to integrate sectoral analysis.

Bringing together different data sets, across sectors, in a way that can inform decisions about a defined area remains a key challenge that is not addressed by national level or sectoral analyses. Even in an area as data-rich as the Cairngorms, there is significant work to do to bring together data on ecosystem services associated with, for example, carbon storage, flood management and water quality in a way that can inform management choices.

Take Account of the Services that Ecosystems Provide

Focusing on the services provided by ecosystems offers a way to focus planning and engagement on the key choices or decision points. For example, while a general objective to enhance habitat networks may be a reasonable aspiration, its delivery will involve choices and prioritisation. In the Cairngorms, identifying the services delivered by woodland, wetlands and farmland for example has provided some parameters for land use policy to consider whether the range of services is compromised by expansion of one habitat at the expense of another and has made any necessary trade-offs more transparent.

Focusing on the services or benefits that ecosystems provide also offers a potentially valuable way to approach apparently conflicting land use objectives. In the Cairngorms, work led by the River Dee Fisheries Trust in the Upper Dee catchment is identifying options for establishing riparian woodland. Such woodland could deliver multiple benefits ranging across landscape enhancement, strengthening habitat networks, contributing to flood management and shelter for livestock. However, it is the benefit of woodland in reducing water temperatures which are at risk of becoming too high to maintain salmon populations, a prime economic asset associated with the river, that has proved the most significant driver of land managers' motivations in considering woodland establishment.

While this is a small example, the wider challenge and opportunity is to use ecosystem services to develop sufficient regional/local flexibility to tailor and target land management support. Recognising the services delivered offers a way to connect land management support more directly to the benefits that both land managers and the wider community derive and value.

Involve People

There is no doubt the concept of an ecosystems approach remains challenging to communicate beyond the specialist interested audience, if only because of the term itself. Including reference to it in plans brings suggestions of jargon and policy-speak. However, if plans and consultations don't focus on the concept and theory, but simply use the approach as a framework for considering the issues, it can be an effective way to engage people. The opportunity it brings to connect to what matters to people through ecosystem services, such as food, timber, water, views, shelter, job opportunities, recreation, offers a less abstract way to engage people in natural resources.

The challenge is to identify some headline services provided by ecosystems that might provide better ways to inform community planning processes and other engagement opportunities. Land managers often see a disconnect between the benefits their management

provides and the wider economic value that is built on or derived from those assets, such as tourism. Ecosystem services may offer a pragmatic way to connect these land use decisions with the community planning processes that value and use the services provided.

CONCLUSION

Using an ecosystems approach in land use planning can help to focus on the key decision points, tensions and choices, and can engage people through what matters to them – whether land managers or the wider community.

Given the relatively recent policy focus on an ecosystems approach, much of the policy, guidance and data are focused either on sectors (such as water or carbon), or on national level analysis (such as the UK NEA). These provide the necessary building blocks, but there remains a challenge of alignment of data, effort and priorities if this approach is to guide management practice in particular areas, whether National Parks or other planning units such as community planning partnerships.