

RESOLVING CONFLICTS IN RESOURCES MANAGEMENT

Roger Crofts, Chairman, The Sibthorp Trust

Summary

This paper considers how the many conflicts in the use and management of nature and natural resources can be addressed. The problem is identified and the chances of success addressed. Practical examples are provided based on recent experience in Scotland. Finally, the relevance of the Ecosystem Approach is assessed.

Introduction

There are many conflicts about the use of natural resources. Many questions are raised. Which is the most important use? Which is the most remunerative? Which is the right of the resource owner to determine? What role do government institutions have? Do local communities have a role to play? Do other interests have a stake? Are there any solutions? Are there any practical examples for others to learn lessons from?

There is a great deal of literature on this subject in the fields of behavioural psychology and biological conservation, for example (see, for example, Sidaway, 2005). But, more significant, is the range of practical experience which has been gathered over recent decades.

What's the problem?

There are many conflicts. They centre on different demands for the use of natural resources, on the rights and responsibilities of different stakeholders: owners, tenants, managers, local interests, external interests, and on the struggle to find the best solution. Usually, there is no 'right answer' or silver bullet' solution. Therein lies the essence of the problem, that there is perceived from one interest point to be the ideal solution and it is just a matter of time until all of the other interests agree or accept the right of the lead protagonist to determine the solution.

What conflicts are the conflicts we talking about? Table 1 summarises those identified by the Royal Society of Edinburgh (RSE, 2008). There follows an examination of those which the author has experienced over the past two decades from working in Scotland.

Table 1 Actual and expected conflicts arising from the following activities

Land for renewable energy production (wind turbines, energy crops etc) to meet new and testing Scottish and EU targets
Land for afforestation to meet the target of 25 per cent cover in the recently approved Scottish Forestry Strategy
Land for food production to meet domestic demand and the development of local food niches for local and wider markets
Land for safeguarding areas for potential food production in response to increases in world demand for meat products
Land for maintaining and, where appropriate, enhancing landscape quality given the importance this has for the tourism industry and for local residents
Land for biodiversity conservation to meet international, EU, UK and Scottish targets

on reducing the loss of biodiversity
Land to make a full contribution both to the mitigation of climate change and for
adaptation to the changes that will continue to occur

Source: Royal Society of Edinburgh 2008 Committee of Inquiry into the Future of Scotland's Hills and Islands

Bird conservation versus habitat protection: is there a dependence or does statute determine that one is more important than the other or is one lobby stronger than the other?

Biodiversity conservation versus landscape protection: the former is tangible and easily measurable, and has international, regional and local status through the biodiversity planning process stemming from the Convention of Biological Diversity, whereas landscape is intangible and varies with human perception and that perception is difficult to measure. Therein lies the challenge.

Sporting estate management versus bird of prey protection: this conflict has proved to be the most contentious, longest standing and most difficult to resolve as the objectives of owners to maintain incomes from leasing out sport shooting of red grouse and red deer stags determines their approach to habitat management and anything that gets in the way, such as bird of prey predation down the food chain, particularly of grouse chicks and grouse prey species, is not easily tolerated.

Agricultural production versus nature conservation: this long-standing conflict has been brought into sharp focus by concerns about food security for the growing global population and changes in diets in emerging countries. It assumes that nature can be accommodated at the edge of the field and the edge of the farm, rather than be a mainstream objective of farmland management. Despite many schemes operating domestically in the UK and under the EU Common Agricultural Policy, there remains resistance to mainstreaming nature conservation into agricultural policy and practice (see, for example, ec.europa.eu/agriculture/cap-post-2013/index_en.htm).

Climate change mitigation/adaptation versus nature conservation: the traditional approach to nature conservation has tended towards the static of retaining the status quo focussed on protected areas and is, for example, enshrined in the EU Directives on Habitats and Species, and on Birds, which are the driving force for nature conservation throughout the EU. On the other hand, climate change mitigation and adaptation demand active approaches based on whole natural systems, and the restoration and improved management of natural systems and processes.

Renewable energy versus other land uses: the recognition that production of electricity from renewable energy sources is necessary to reduce greenhouse gas emissions has been a major driving force in the UK through the stringent emissions reduction targets in statute (Climate Change Act 2008 and Climate Change (Scotland) Act 2009). The most developed technology and the one which brings greatest profits through the government

established incentive schemes (Renewable Obligation Certificates) favours onshore wind turbine installation. The windiest and, therefore, the most profitable locations are in areas of high biodiversity and landscape value, in areas previously afforested for commercial soft wood production and in areas of high landscape value. No national spatial strategies have been developed to help to overcome these conflicts and the overriding policy imperative for renewable electricity generation brings it into conflict with all other land uses, especially in the uplands.

River basin management versus flood protection: with the increasing episodicity and high peaks of precipitation events there are greater demands for flood protection works to insulate farmland and settlements from flooding. On the other hand, for example, the EU Water Framework Directive, based on achieving ‘favourable ecological status’ of water bodies, is best achieved through allowing river basins to operate naturally. Decision makers find it easier to agree to and fund flood protection, and interfere with natural processes, especially on floodplains.

This list is by means exhaustive. And, it is likely that they are echoed in other similar environmental, political and social milieus.

Behind these specific problems and conflicts lie many deep seated and fundamentally opposite views of natural resource management and the rights, responsibilities, obligations and demands of the different parties. In these circumstances, it is fair to ask the question whether there is any chance of finding solutions in the specific circumstances and in the generality.

Is there any chance of finding solutions to conflicts?

From recent experience, to be exemplified later in this paper, the author considers that there is a positive answer to this question. There are a number of reasons for this optimism.

There are many well tried and tested methods of conflict resolution in theory and, most important, in practice. In these approaches it is essential for all stakeholders, defined as widely as is reasonable to be inclusive of all legitimate interests, to understand the lengthy, arduous and often tortuous process which has to be gone through. The process outlined many years ago by the outstanding conflict resolution practitioner Ulysses S. Seal in many capacity building workshops recognises this step wise process:

- **business as usual** – familiar opinions on a new topic leading quickly to a decision point;
- **divergent zone** – attempted decision with diverse perspectives with feelings of hope, aliveness, curiosity, relief and thoughtfulness;
- **groan zone** – competing frames of reference leading to confusion, frustration, perplexity, anxiety, aggravation, disgust, boredom and exaggeration;
- **the commitment to struggle** – patience, tolerance and perseverance lead to a shared framework of understanding;
- **convergent zone** – imagination, focus, eagerness, clarity and confidence leading to inclusive alternatives, synthesis and refinements; and ultimately to

- **the closure zone** – the decision point which is shared by all of the parties (quoted in Crofts, 2003). Allowing for argument and confrontation is a necessary starting point to the process. Whether the participants can achieve some agreement on shared goals and objectives is a key early issue. Sometimes it is preferable to use an external facilitator or independent chair who has no axe to grind, is strictly neutral, is a good listener but can gently drive the process forward.

There is a more general reason for optimism. Continuing conflict is draining of both human energy and corporate resources; it is an inefficient and ineffective mode of operation. The frustration of key parties is a waste of human resource, which is better put to addressing solutions than to arguing about problems and conflicts.

What are the practical examples of conflict resolution?

The examples are drawn from Scotland where over the last two decades many approaches have been undertaken in the quest to achieve resolution of long-standing and avoid emerging conflicts (see www.snh.gov.uk for more background information on the cases assessed; Baxter and Galbraith, 2010; Marrs et al. 2011). The approaches are classified into six types.

1. New management prescriptions and practices:

Debates about the future use of large areas of blanket peat in north mainland Scotland (the **Flow Country of Caithness and Sutherland**) came to the fore in the 1980s when the state Forestry Commission, working with private forestry companies, decided that the best use of these mires was for soft wood timber production. It deep ploughed and drained the ground and planted non-native softwood tree species. At the same time, the environmental charity RSPB had identified the importance of the area for wetland bird species. The conflict was made worse by the emotive publication on the area by the Nature Conservancy Council (Stroud et al, 1988). The conflict was gradually resolved through 4 decisions, albeit not in any planned or systematic manner. First, the scientific importance of the habitats and dependent species was formally documented and peer reviewed (Lindsay et al, 1988). Second, the Scottish Secretary of State determined that offering financial compensation for threatening to plant trees was a waste of public money and stopped these schemes, hence removing the incentive for private sector investment. Third, the formal designation scheme of the key sites was approved by government and allied to the implementation of the **Peatland Management Schemes** (SNH, 1992). The latter offered special payments to landholders in turn for agreeing to manage these mires in a traditional, environmentally sensitive manner. The dispute took a long time to resolve despite the plethora of measures as rights holders saw their freedom of operation being reduced. However, without the positive incentive scheme it is doubtful whether any progress could have been achieved.

Support for this conclusion comes from a later adoption of this approach on the island of Lewis. A programme of designation of the Lewis peatlands had been approved by the UK Government as part of its implementation programme for the EU Birds, and Habitats and Species Directives. This was proving to be very unpopular with the local landholders, the crofting tenants, but the heat was almost entirely taken out of the conflict by the

introduction of the Lewis Peatland Management Scheme. Within less than 6 months virtually all of the 3,700 landholders had signed agreements to join the scheme.

A further lesson from these two schemes is to ensure that they are implemented by local staff who have an empathy with the people of the area and their livelihoods and cultures, as well as knowledge of the conservation business. The converse is that outsiders with no knowledge and dictatorial approaches can either lead to conflict or make it worse.

A long-term reintroduction programme for the sea or white-tailed eagle began in the late 1970s on the island of Rum, owned on behalf of the state by the Nature Conservancy Council. The problems only arose when later in the reintroduction programme birds began to move further afield and, in particular, to nest and breed on the island of Mull. The conflict arose over claims by farmers that young lambs were being taken alive by the sea eagles to their nests where they were killed and fed to the young birds. Despite indications to the contrary that this was not possible by those knowledgeable of sea eagle habits, the conflict continued to the point when the officials in the Scottish Ministry for Agriculture demanded that SNH establish a scheme to compensate the formers for loss of income from lambs. SNH refused and instead introduced the **Sea Eagle Management Scheme**, based on the same principles of the peatlands management schemes, notably that a shared approach to management between landholders and the government was likely to be the most effective in protecting the interests of both parties and in reducing the cost of safeguarding the species in question. There were a number of elements, including farmers monitoring the type of species taken by the sea eagles to their nests, independent adjudication on the causes of death, and encouragement to focus lambing on fields nearest the farmstead. Giving the farmers a leading role in conservation of these birds and encouraging them to establishment watching points and parking for visitors to observe the birds also helped to change opinions to a more positive footing. Having an explicit objective of bringing economic benefits to the communities also helped.

Substantial changes in the populations of migratory geese (Barnacle geese of both Greenland and Svalbard populations and pink-footed geese from Iceland) had a major impact on the grazing capacity of farms in the over-wintering host areas, in particular on the island of Islay and along the northern shores of the Solway Firth. Farmers had reduced early spring grass because of geese grazing before returning to their summer breeding grounds, the ground was over fertilised by goose droppings and the surface compacted by their roosting. A number of approaches were trialled as part of **Goose Management Schemes** beginning with joint government/local goose management committees especially in the Uists. These proved to be centres for argument and debate rather than resolution and more effective approaches were needed. Again the lessons learned from positive management schemes described earlier were applied. Various forms of scaring of geese to reduce their grazing and compaction impact were trialled – gas guns and human scaring – but they proved to be ineffective as the birds returned to the ground eating grass within seconds. More imaginative approaches were brought into operation, including development of sacrificial areas on farms which were seeded and fertilised just for the geese alongside scaring from the rest of the farm which was reserved for traditional farming activities. Parallel to these local activities were

international discussions on the management of geese on both wintering and breeding grounds within the flyway, and monitoring of population numbers and trends to determine the level biologically sustainable populations.

2. Experimentation and demonstration projects

Birds of prey and grouse moor management have been and are a matter of great contention. A number of novel measures have been trialled and some of these are ongoing. The **Joint Raptor Study** 1992-97 (Redpath and Thirgood, 1997) and the **Langholm Moor Demonstration Project** 2007-17 seek to address these conflicts through an experimental approach with a number of elements (Redpath et al, 2010). The studies are partnerships between the host private sporting estate, government nature conservation agencies and bird and sporting management non-government organisations with independent input by raptor scientists. There is agreement on the objectives and methods. At the heart of the studies is accurate monitoring of predator/prey relationships and the state of health of the habitat, and novel methods of feeding the raptors. The key species is the hen harrier protected under the EU Birds Directive which it is claimed is the main species preying on grouse chicks. The situation is very much more complex than this in terms of predator/prey relationships, in terms of moorland management and, very significantly in terms of the views held by different stakeholders on the rights of their case and the wrongs of the case put forward by others. The results have not been clear cut. Predation reduced during the latter stages and immediately after the first study but increased afterwards, grouse numbers never recovered, artificial feeding during the breeding and chick periods worked moderately well but cannot be sustained in the longer term. Despite the significant investment in money and time by all partners, there remain questions about whether an outcome satisfactory to both parties can be achieved. Maybe the aims are incompatible and maybe there are factors operating over longer time scales, such as habitat management, which overwhelm shorter term efforts, such as reduction in natural predators by legal means.

There are many non-native invasive species in the UK. They have spread by humans realising knowledgeably or unwittingly into the wild plants and animals which then create threats to the survival of native species. North American Signal crayfish, American grey squirrel and American mink are among the mammals, and Japanese knotweed, Himalayan balsam and *Rhododendron ponticum* among the plants being regarded as causing the greatest conflicts. Eradication is both technically difficult, and in some cases well nigh impossible, and expensive so the approaches taken are very selective in scale and location. One example illustrates how an eradication programme can reduce conflict between local people and wildlife to the benefit of both species. The **Hebridean Mink Project** aims to remove all mink from the whole of the Western Isles. So far it appears to have been successful in Barra and the Uists and is now being pursued in Lewis and Harris. The main issue from a conflict resolution standpoint is that where two parties can find a common cause, in this case the mink preying on ground nesting birds and on domestic chickens, to the detriment of livelihoods from reduced eggs and from reduction in tourism, there is every chance that the conflict can be reduced and all parties benefit.

3. Research based approaches

These type of approaches are very rare. The aforementioned Langholm studies have elements of this approach, but the main example is the reintroduction of the European beaver. This specie was made extinct in Scotland through persecution. A long period of research and assessment was undertaken by Scottish Natural Heritage before formal proposals were made for its reintroduction. The specific species type, its genetic origins, habitat requirements, feeding habitats, effects on vegetation and water courses, on fishing and agriculture, and on disease were all assessed in detail and reports on these studies published. Despite all of this endeavour, some local and national sectoral interests argued against its reintroduction on grounds that this would damage fisheries through predation and through significantly changing water courses by damming and therefore making fish movement more difficult, and by causing flooding of adjacent farmland through raising water levels by dam building. The scientific evidence concluded that this was most unlikely to be the case, but the opposition remained. It was not until there were changes in the personalities dealing with the issue amongst the protagonists and in the government ministry that a policy decision to reintroduce was made, albeit for a time-limited trial with work to be undertaken on the validity of various exit routes if the trial was concluded to have been unsuccessful. Nevertheless, since the reintroduction the level of local support has risen as a result of more people visiting the area and the local community becoming interested themselves. So attempts to terminate the trial by removing the animals are likely to be resisted by local interests, other than some fishing and farming interests who may never be reconciled to the reintroduction. The lesson is that, despite detailed objective research, unless there is local opinion in favour it is unlikely to be successful in the minds of decision makers, and even then, there may well be some vested sectoral interests who will never be reconciled.

4. New strategic approaches:

The Climate Change (Scotland) Act 2009 contains provisions for the development of a **Land Use Strategy** for Scotland, including a timetable for completion and for review, all subject to the approval of the Scottish Parliament. The original proposal came from Scotland's national academy, The Royal Society of Edinburgh, in a report of its Committee of Inquiry into future of Scotland's Hills and Islands (RSE, 2008). The reasoning was that conflicts between different present and potential future land uses were creating problems for all parties and interests and that conflict resolution was essential. The government strategy sets out a series of high-level objectives determined following extensive consultation between all stakeholders and an action plan has now been produced. The framework therefore exists for helping to reduce conflict. However, two problems remain.. First, the Scottish Government has a series of policies which give preference to certain uses of land, for example for renewable electricity generation by onshore wind turbines, and for commercial forestry. Second, the Scottish Government does not intend to undertake any demonstrations or trials of implementing the strategy on the ground so its validity cannot be trialled and tested in practice. There are offers of undertaking such demonstrations by organisations around the country but these are not formally recognised by the government.

5. New forms of spatial planning:

One well tried and tested method of reducing conflict and agreeing trade offs between different interests is the creation of strategies for new land and water uses. These have been used in Scotland for a number of decades. The forerunner were **indicative forestry strategies** undertaken by local councils at the behest of the Scottish Government (SDD, 1999) in order to resolve the conflict between development of commercial forestry plantations using non-native species and nature conservation species and habitat protection interests. What the strategies did successfully was to force the parties in the argument to sit down and determine what compromises were possible with the help of local council land use planning specialists as, in effect, the adjudicators. This approach proved to be a model which was later used to lessen the conflicts in different parts of Scotland between marine fish farm development and nature and landscape conservation interests in the form of **indicative fish farm location strategies**. Almost a quarter of a century later they have been advocated and used in an attempt to reduce the conflict between the many different interests about the sighting of onshore wind turbines.

However, specific sector strategies, even though they bring protagonists together to reconcile conflict do not solve all the conflicts because they are so multi-faceted. Hence there are now calls for the development of **new spatial strategies**. The idea is to development land planning strategies beyond the narrow boundaries of the town and country planning system and specifically beyond the boundaries of those matters which consent under those procedures and to embrace agriculture and forestry. These ideas are still at an early stage, but as a regional/local adjunct to the national strategic land use plan, they should at least force the various parties to matters far beyond their horizons and to consider what is in the best public interest.

6. New forms of stakeholder engagement:

Finally, a whole series of stakeholder engagement approaches have been used in Scotland over the last quarter century where there was actual or potential conflict: **Cairngorms Working Party**, **Moorland Forum**, and **Access Forum** are examples. In each case, there was conflict between different interests and a need and desire to share problems, understand other perspectives, identify common ground and determine practical solutions. In each case a formal group was established, either by the Scottish Government or with its informal blessing. It really does not matter which route is taken provided that the parties wish to engage in constructive dialogues to realise solutions. In one case, the Access Forum, the lead came from one of the parties – the sporting estate interests - who recognised the problem of disturbance to deer stalking and grouse shooting by walkers and wished to find a constructive solution. In the case of the Cairngorms there were tensions between virtually all stakeholders in a variety of development versus conservation, locals versus incomers issues: between government departments and agencies, between landowners with different objectives, and between different organisations. The members of the moorland Forum are every protagonist organisation imaginable: a tall order but a necessary one. For the Cairngorms an agreed report on the future was published (The Scottish Office, 1992)), for the Access Forum a Scottish Outdoor Access Code was eventually agreed (SNH, 2010) and for the Moorland Forum a code of practice has been published (Scotland's Moorland Forum, 2003), there has been

agreement on further trials and demonstrations at Langholm. By appointing a chair who was well respected and who refused 'to take no for an answer', progress was made, albeit slowly, in each case. No formal machinery was established, but the governance structure was agreed between the parties.

An emerging approach is the **Galloway and Southern Ayrshire Biosphere Partnership** with two dozen members presenting community, business, representative bodies, government agency interests with an independent chair with the intention of being a formal organisation not tied to government and inclusive of all of the partners. Lessons learned from previous bodies have been learnt and taken into account in its establishment.

What lessons can be derived from this experience?

The general principles which can be drawn from the variety of approaches and practical examples are as follows.

i. Process lessons

Lesson 1 Multi stakeholder engagement is essential. A collaborative approach involving all stakeholders and legitimate communities of interest should be established with independent and respected leadership as chair, dedicated resources for managing the process and, where necessary, independent facilitation.

Lesson 2 Patience and commitment to the process by all involved. It takes time to form the basis for collaborative working and to achieve common goals and agree shared objectives. Parties need to show willingness to compromise and to identify trade offs, rather than resolutely safeguard their own interests. A key lesson for government agencies and departments is to always use staff who are naturally good communicators, are empathetic to local interests, and preferably live in the area.

Lesson 3 The process of engagement and collaboration is a means to an end and not the end itself. Outcomes and agreement to the means and timing of achieving them are the most important

ii. Types of approaches lessons

Lesson 4 Integrated approaches with multiple objectives are most likely to be successful. This is the best way of breaking down barriers between sectoral interests and achieving new solutions.

Lesson 5 New forms of spatial planning are needed. Strategic spatial approaches along with indicative land and water use plans help to resolve conflicts, remove uncertainty and inform decision making

Lesson 6 Traditional forms of compensation should be replaced by positive management incentives. These incentives have proved to be a more effective use of scarce resources, compared with paying compensation for activities that are stopped or may never be undertaken despite the threat to do so.

iii. Information and knowledge lessons

Lessons 7 Objective, verifiable information should inform debates and decision making. A budget for data collection and analysis should be made available. Analysis of trends and their causes is essential. Independent collection and analysis of data and drawing conclusions and recommendations for action is likely to be necessary if the outcomes are to be credible with all of the parties.

Lessons 8 Learn from the successes and failures of others. It would be a valuable contribution to review the various approaches to conflict resolution used in the UK and further afield to determine what worked and what did not and the reasons for success or failure.

How is the Ecosystem Approach relevant to conflict resolution?

The above Principles are written from the basis of practical experience in Scotland. However, they are, in effect the key components of the Ecosystem Approach as in the Principles and Operating Guidelines.

Bearing in mind that ‘The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way’ (CBD CXOP Decision V/6), it should be clear from the foregoing that

Table X The Twelve Principles of the Ecosystem Approach

1. The objectives of management of land, water and living resources are a matter of societal choice.
2. Management should be decentralised to the lowest appropriate level.
3. Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.
4. Recognising potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context.
5. Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.
6. Ecosystems must be managed within the limits of their functioning.
7. The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.
8. Recognising the varying temporal scales and lag-effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long term.
9. Management must recognise that change is inevitable.
10. The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
11. The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.

12. The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

Source: CBD The Ecosystem Approach

Table XX The Five Operational Guidelines of the Ecosystem Approach

1. Focus on the functional relationships and processes within ecosystems
2. Enhance benefit-sharing
3. Use adaptive management practices
4. Carry out management actions at the scale appropriate for the issue being addressed, with decentralisation to the lowest level, as appropriate
5. Ensure intersectoral cooperation

Source: CBD The Ecosystem Approach

The essential points of conclusion are:

1. multi-objective approaches are necessary,
2. the situation should be considered from all perspectives: environmental, economic and social,
3. a dynamic approach should be adopted, focussing on maintaining and improving environmental systems and processes, rather than a static approach,
4. the engagement of all relevant interest to achieve a mutually acceptable solution is necessary. The many and varied approaches assessed from Scottish experience illustrate that the Ecosystem Approach does provide a valuable framework for addressing conflict.

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