

Collaborative Frameworks in Land Management: A case study on integrated deer management

A Rural Economy and Land Use project investigating where collaboration over natural resource management is effective, why it is effective, and what the barriers are, using wild deer in the UK as a case study.



Policy and Practice Notes

The Rural Economy and Land Use Programme is a UK-wide research programme carrying out interdisciplinary research on the multiple challenges facing rural areas. It is funded by the Economic and Social Research Council, the Biotechnology and Biological Sciences Research Council and the Natural Environment Research Council, with additional funding from the Scottish Government and the Department for Environment, Food and Rural Affairs.

Wildlife populations move across landscapes ignoring human boundaries, and may be viewed as a resource or a nuisance. Wild deer management demonstrates how conflicts arise between neighbours who have different management goals. Although deer are a key component of the natural environment their feeding activity limits plant growth and biodiversity in woodlands and other habitats. They are highly valued, provide employment through stalking and game meat production, and encourage tourism, but also cause traffic accidents. Although deer are not owned by anyone the right to hunt them rests with the landowner. They provide an opportunity to investigate collaborative management processes involving landowners and interested stakeholders.

How can ecological resources be managed?

The value of collaboration is already recognised within the world of deer managers, with community based deer management groups having been established widely in recent years.

The Deer Commission in Scotland, and the Deer Initiative in England and Wales, promote co-operation and the spread of best practice. The success of these local groups varies considerably, influenced by the diversity of those involved. We need to know more about who the stakeholders are and their interests in collaboration.

Who are stakeholders in deer management?

Stakeholders are individuals, groups or organisations (e.g. Forestry Commission, National Trust, Scottish Natural Heritage, Deer Initiative) with an interest in deer, their impacts on the environment or the management of these impacts.

Interviews and charting techniques were used to 'map' stakeholders in 'deer world' to identify who is included and their communication links. These showed that:

- Organisations that share objectives communicate with each other more than with those with divergent objectives.
- At local management level, talking to people and attending meetings are the most popular methods to gain knowledge.
- Scientific results are used by national organisations but not at local level.
- Government agencies have a key role in communicating science to practitioners.

How can stakeholder priorities and perceptions be identified?

Using novel approaches, at times convenient to stakeholders, enables engagement with a wider group.

- Choice experiments showed the importance of factors influencing managers' decisions, along with preferences for changes, and allowed the distribution of preferences within the management community to be charted. (see example of choice card below)
- Group interviews granted insights into the respondents' views and allowed a value to be placed on collaboration.
- Field workshops enabled stakeholders' preferences for woodland structure to be investigated.
- Group discussions enabled information on the influence of deer on woodlands to be presented, and evaluation of the effect of provision of additional knowledge on stakeholders' preferences.

	RTAs	Woodland regeneration	Deer population	Tick preferred
Option A				<input type="checkbox"/>
Option B				<input type="checkbox"/>
Status quo				<input type="checkbox"/>



How do societal groups vary in their landscape preferences?

Stakeholders used digital cameras to describe their preferences for distinct woodland landscapes impacted on by herbivores. This approach facilitated discussions about the landscapes and the impact of deer upon them.

- Different societal groups had similar perceptions of, and preferences for, woodland landscapes, but used different language to describe them.
- Individual preferences were very robust in the light of new information, with very little change in overall preferences.
- There was consensus that landscapes should have a patchwork of varied woodlands.

What are the benefits of collaboration?

Successful collaboration can increase the overall benefits derived from natural resources such as wild deer:

- A diverse range of stakeholders are involved and communication is increased.
- Stakeholders gain a wider perspective of management of the resource by sharing understanding and knowledge.
- Conflicts over management are resolved by focusing on shared knowledge and objectives.
- Policy development that is inclusive of local managers from the outset is more likely to lead to local collaboration.

What motivates stakeholders to collaborate?

Understanding managers' priorities and what motivates different stakeholders to collaborate provides insights into the obstacles to collaboration. It also helps to identify whether incentives could encourage collaboration.

- Deer managers preferred to address deer-related road accidents via mechanisms such as lower traffic speeds, rather than reducing deer numbers.
- Collaboration in deer management was favoured in most areas.
- Mandatory collaboration was resisted on the grounds that managers valued their independence.
- Financial incentives towards collaboration were generally viewed with scepticism, being seen as too unreliable to compensate for the perceived loss of independence.

What can stand in the way of collaboration?

The research has identified specific needs for effective collaboration. Such an approach may not succeed without:

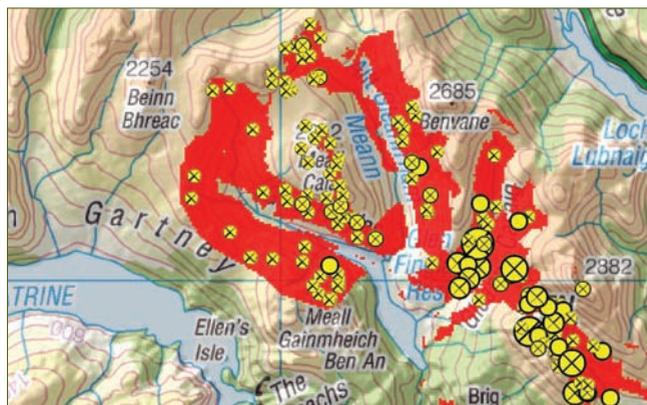
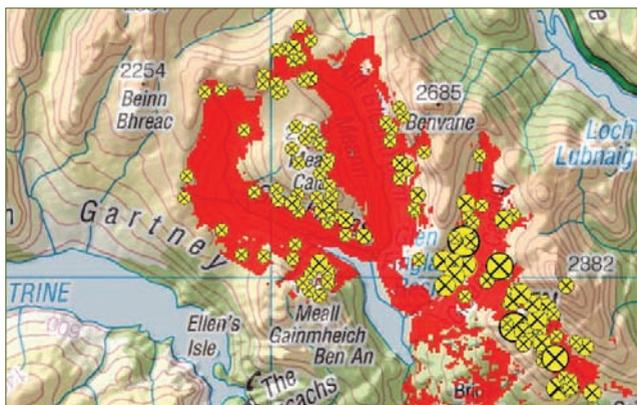
- A strong leader who is sufficiently motivated to overcome the challenges
- Enough time for stakeholder engagement, allowing trust and an understanding of others' perspectives to develop

Can a common understanding between stakeholders be achieved?

Conflicting interpretations of evidence can limit stakeholders' willingness to collaborate.

New techniques such as Geographical Information Systems (computer-based mapping software) to produce maps identifying areas and integrating local manager knowledge allows development of ecological models with locally specific predictions. These techniques enable:

- Neighbouring landowners to explore their views of what is happening to the local resource
- Stakeholders to check their ideas against agreed evidence from the GIS maps
- Conflicts in interpretation to be diminished
- Improvements to be made to the ecological models by bringing local expertise to bear on the assumptions used



These maps of an example estate demonstrate the benefit of adding local information to a 'generic' GIS model of deer habitat use. Yellow circles represent sightings of groups of stags in winter ranging in size from <10 to 72. Areas shaded red on the left hand map are predicted to be favoured by deer from the generic model. The map on the right demonstrates that including information provided through interviews with local stalkers improves the overlap of predicted favoured areas with actual deer presence and improves the model fit from 51.1% (left) to 76.6% (right).

How can policy makers and practitioners encourage collaboration?

Building trust and increasing information sharing is critical to increasing collaborative management of natural resources at local and regional level. Policy makers and those implementing policies and best practice should:

- Engage with local resource managers at the outset
- Include all those with a stake
- Identify stakeholders playing a key role in disseminating information
- Use social research techniques to identify and give voice to apparent outsiders who may be able to improve the quality of the collaborative process
- Use face to face meetings to develop trust and for information transfer
- Note that novel approaches can enhance the process
- Develop flexible adaptive platforms, such as participatory GIS, to integrate locally specific knowledge with ecological understanding across the landscape over which the resource occurs
- Use adaptive and flexible methods, such as field workshops and discussion groups to engage with stakeholders
- Schedule these during evenings and weekends

Further information

The research has been carried out at the universities of Aberdeen, Edinburgh, Kent, St Andrews and York, the Macaulay Institute and Forest Research, with funding from the Rural Economy and Land Use Programme and the Forestry Commission.

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Useful resources:

Douglas, C., MacMillan, D.C., and Phillip, S. (in press). The role of economic incentives in resolving conservation conflicts: the case of wild deer management and habitat conservation. *Environmental Conservation*
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Project websites: www.macaulay.ac.uk/relu/
www.forestryresearch.gov.uk/reludeer

