

Making partnerships work across landscapes – the role of Nature Improvement Areas

New Nature Improvement Areas are expected to bring benefits for wildlife and for people, so how can recent research help them achieve this?



Policy and Practice Notes

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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.

The Lawton Review 2010, *Making Space for Nature*, advocated the creation of ‘ecological restoration zones’ which were subsequently incorporated into the Natural Environment White Paper as Nature Improvement Areas. These are partnerships of private/public/voluntary bodies in specified areas, covering a wide diversity of habitats including woodland, moorland, grassland, peat bogs, heathland, wildflower meadows, wetlands, estuarial marshes, peri-urban locations, riverbanks and ponds. They are intended to deliver ecological restoration and reconnections at landscape scale.

What are NIAs expected to deliver?

Key expectations of NIAs include:

- A demonstration of significant benefits to wildlife and people.
- A wide partnership and a shared vision.
- A spatial dimension incorporating core areas (existing designated sites), restoration areas and buffer zones, along with corridors and stepping stones that join up existing wildlife areas.
- Effective integration with key land uses within and beyond the NIA.
- An urban and rural dimension with opportunities for enhancing people’s experience of nature.
- Enhanced capacity for climate change adaptation.
- A business plan and formal agreement between the partners setting out responsibilities and allocation of resources.
- A sound evidence base and arrangements for monitoring impacts and outcomes.
- A monitoring and evaluation framework established jointly by Defra and the NIA partnerships under the four broad themes of biodiversity; ecosystem service; social and economic benefits; and partnership working.
- Knowledge exchange within the NIA network and beyond.

What can research contribute?

Research from the Rural Economy and Land Use Programme (Relu), Biodiversity and Ecosystem Service Sustainability Programme (BESS), the Demonstration Test Catchments (DTC) and Valuing Nature Network (VNN) endorses a landscape scale approach to land management and is generating a fund of knowledge of potential value to NIAs and to other landscape scale initiatives.

There are relevant findings from these programmes regarding:

- Innovative mechanisms to secure collaborative action between land managers.
- New and more effective approaches to stakeholder engagement and partnership working.
- Use of environmental modelling and valuation of eco-system services to support decision making on land management.
- Connectivity within and across built and natural environments.

What does research tell us about stakeholder engagement and partnership working?

Public involvement in environmental management is expected to feature prominently in the working arrangements for the NIAs.

Research investigating new approaches to public engagement found that:

- Solutions to problems that are locally rather than externally devised will help retain the diversity and commitment of a group.
- The group needs to think collectively and all ideas and contributions should be valued and welcomed no matter how difficult, contested or controversial they may be.
- All facts should be open to challenge and no avenues of enquiry should be closed.
- There should be close engagement between researchers and other group members in defining and executing research objectives and constant feedback will sustain interest and commitment.
- Group meetings should allow for focused discussion and social networking.
- Government bodies may need to adjust the temporal and spatial scales at which decisions are made in order to take community group recommendations into account.
- Statutory bodies and other government organisations should make local trusted staff available for meetings.
- Such bodies should consider allocating small sums of money to enable groups to commission their own research on locally important topics.
- Organisational roles and financial responsibilities should be clearly defined from the outset.
- Participatory GIS mapping techniques may be particularly helpful where land management issues have a clear spatial dimension and where spatial information needs to be discussed and communicated between stakeholders.
 - This has been demonstrated in the Managing Borderlands project which examined flood management issues with landowners, farmers and local communities in two river catchments (Eddlestone Water and Wooler Water).
 - The technique allowed participants to record on maps their own perceptions of the incidence and causes of flooding and facilitated discussion of the options and spatial consequences of different flood management solutions.

A users' guide has now been published, based on the Managing Borderlands experience and provides advice on:

- The most effective size of groups and conduct of mapping exercises.
- Types and appropriate scale of base maps.
- Use of different mapping techniques to gather information.
- The process of converting mapped information into a digital format and how this can be combined with other spatial data.
- Sources of GIS expertise for stakeholder groups.
- Issues around ownership and potential use of outputs.

Can research help us to understand and put a value on the ecosystem services provided by NIAs?

Ecosystem services have often been taken for granted in the past but:

- They are provided by the natural environment in the form of clean water, clean air, wholesome food, protection from flooding and enhanced quality of life derived from beautiful landscapes.
- Biodiversity has a generally positive impact on ecosystem service provision although the functional relationships underlying this are often not well understood.
- Maintaining a healthy, natural environment is important for ensuring the continued provision of ecosystem services and the benefits we derive from them.
- Research can help us to assess and monitor the stocks of natural capital and the ecosystem services that flow from them.
- The benefits we derive from ecosystem services may take the form of market goods (eg agricultural produce) or non market goods (eg enjoyment of clean rivers and biodiversity).
- A better understand of the relationships between stocks of natural capital, flows of services and how these may be affected by future change is important.
- The application of appropriate valuation techniques to ecosystem services and benefits should assist in the development of more sensitive and cost-effective policy interventions.

Research can help us to:

- Understand why constraints and controls on development may be needed to conserve species that have no obvious value in producing goods.
- Devise integrated models for land management in specific geographical areas. For example, Relu has provided policy guidance on how both arable farming and wildlife conservation objectives can be met from lowland arable farms. This model incorporates the economic, environmental, regulatory and social factors which influence farm management decisions and that result in environmental impacts, in this case on the distribution and density of weeds and therefore seed eating bird populations. Some key research findings include:
 - Income is the primary objective for most farmers, but other important objectives include the maximization of free time and minimization of risk.
 - Simplicity is a major driver e.g. fewer crops or agri-environment measures.
 - Lifestyle preferences such as attitudes to shooting and/or conservation are also influential.
 - Different crops benefit wildlife in different ways e.g. yellow wagtails are strongly dependent on potatoes within arable landscapes
 - Crop type is less important than landscape composition or field boundary structure.
 - Birds respond to landscapes in different ways with some largely influenced by local conditions while for others the wider landscape plays a more major role. For example, for grey partridge and skylark populations the closest relationship is with variations at the local scale (within 1km²); bullfinch and lapwing with the medium scale (9km²); while corn bunting shows the strongest relationship to large scale patterns (25km²).
 - Farm woodland strongly enhances the capacity of the arable landscape to support wildlife.

How can research help to connect the built and natural environments?

Local Planning Authorities will be able to decide whether to identify NIAs in their statutory development plans but in order to realise their full potential NIAs need to become firmly embedded within the planning system.

At present there is a clear divide between the built and natural environment policy realms. Research in the rural urban fringe has tested innovative approaches to public consultation and stakeholder engagement that can help bridge this divide:

- In both plan making and implementation there is much to be learned from past experience. The key delivery failures and challenges associated with Biodiversity Action Plans and regional plans have been shared by stakeholders through an active process of engagement and learning in order to identify lessons to carry forward.
- Nature conservation and planning policy are heavily laden with complex jargon, vocabulary and ideas that tend to exclude non-experts. The concepts of values, time and connectivity have proved to be very effective themes in stimulating public interest and in unifying spatial planning and the ecosystems approach.
- Novel tools can help to engage key stakeholders. For example, one Relu project has developed a board game as an interactive learning tool looking at challenges and choices within the rural urban fringe.
- Existing spatial planning tools could be adapted to reinforce NIA activities. The Community Infrastructure Levy, which is presently heavily focused on social concerns, could become an important source of funding for environmental infrastructure projects that could be identified with and valued by communities. Visitor payback schemes have similar potential.

What can research contribute on collaborative action between land managers?

Agri-environment schemes are the main mechanism for delivering conservation on farmland and the vast majority of these agreements are implemented at a farm scale. This fragmented approach inhibits the potential conservation benefits and reduces the financial effectiveness of the public investment.

But research tells us that:

- A large majority of farmers are not opposed in principle to collaborative action although individuals place a high degree of importance on their independence.
- Management options that are seen to take the least land out of production or require the least amount of change gain the highest support.
- Farmers already engaged in agri-environment schemes, particularly Higher Level Stewardship, are more receptive to more of the management options.
- Non participating farmers are receptive to less extensive interventions, such as the creation of wildlife corridors.
- Farmers with plans to increase production are less favourably disposed to collaborative action on the environment.
- External facilitation may play an important role: lack of communication and mutual understanding, and also poor relations between farmers, act as significant barriers to participation.
- Collaborative agreements are most likely to succeed if they offer a flexibility and involve genuine farmers involvement designing schemes; allow parts rather than whole farms to be entered; set out clearly defined benefits and/or targets that can be readily monitored; and reduce rather than increase the risk to individuals.

Appropriate training on the farm and in workshops can help make agri-environment schemes more effective. Research carried out on schemes designed to enhance pollen for insects, and seeds for wild birds, shows that:

- Poor understanding amongst participating farmers of the reasoning behind different management options leads to unsatisfactory outcomes and unintentional breaches.
- Training that combines the theoretical (the why) and the practical (the how) could radically influence farmers' general attitudes and commitment to environmental land management.
- Ecological monitoring confirms significant improvements in the quality of both pollen and nectar margins and wild bird margins (flowers/seed) on those farms where training has taken place.

Further information

This note was written by Terry Carroll, with contributions and comments from Relu and LWEC researchers and Jeremy Phillipson, LWEC Land Use Fellow. It draws on research from Relu and other Living With Environmental Change (LWEC) activities.

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Useful resources:

LWEC is a multi-agency partnership that is concerned with responses to environmental change.
www.lwec.org.uk

Relu is an interdisciplinary research programme supporting projects under the theme of adapting rural living to environmental change.
www.relu.ac.uk

Relevant projects:

- Sustainable uplands, learning to manage future change
- Improving the success of agri-environment initiatives
- Managing environmental change at the rural-urban fringe
- Linking evidence and policy for managing biodiversity in the agricultural landscape
- Testing a community approach to catchment management
- Collaborative conservation in agri-environment schemes
- Flood management in borderlands
- Market-based mechanisms for protection of water resources

VNN is an interdisciplinary network for valuing ecosystem services, biodiversity and natural resource use.
www.valuing-nature.net

Relevant projects:

- Valuing Peatlands: Assessing and valuing peatland ecosystem services for sustainable management
- Agricultural Management: Valuing the impacts of ecosystem service interactions for policy effectiveness
- Coastal Management: Environmental and ecological economics and management
- Stocks and Flows: Scale dependence of stocks and flows in the valuation of ecosystem services
- Uncertainty and Scale: The Interdisciplinary Quantitative Ecosystem Services Team

BESS is a six year research programme investigating the role of biodiversity in ecosystem processes and services.
www.nerc-bess.net/

Relevant projects:

- Urban BESS – Fragments, functions and flows – the scaling of biodiversity and ecosystem services in urban ecosystems
- CBESS – A hierarchical approach to the examination of the relationship between biodiversity and ecosystem service flows across coastal margins
- Wessex BESS – Biodiversity and the provision of multiple ecosystem services in current and future lowland multifunctional landscapes
- DURESS – Diversity in upland rivers for ecosystem service sustainability
- Delivering multiple ecosystem service benefits in real landscapes

The Ecosystems Knowledge Network is an on-line information resource about ecosystem services
ekn.defra.gov.uk/

Demonstration Test

Catchments is a government-funded project designed to provide robust evidence regarding how diffuse pollution can be cost-effectively controlled to improve and maintain water quality in rural river catchment areas.
www.demonstratingcatchmentmanagement.net

A Guide to Community Mapping and Participatory GIS. John Forrester and Steve Cinderby. 2012.
http://www.tweedforum.org/research/Borderlands_Community_Mapping_Guide_.pdf

Rufopoly web page:
www.bcu.ac.uk/research/-centres-of-excellence/centre-for-environment-and-society/projects/relu/rufopoly