Large-scale conservation in Great Britain: taking stock

Natural England has compiled a database of Large-Scale Conservation Projects and interviewed many practitioners involved in these schemes. This article reviews the findings to date and considers how the achievements of current and previous schemes can be taken forward.

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Nature Improvement Areas – continuing the large-scale conservation journey

Just to the southwest of Peterborough in eastern England, covering 41,350ha of the flat, low-lying land along the River Nene and its tributaries, is the newly-established Nene Valley Nature Improvement Area (NIA). This is one of 12 NIAs – large areas across England that were established in April 2012 for ecological restoration, having been chosen for funding through a government-run competition that invited local partnerships to put forward proposals for their area. The aims of the NIA programme are to:

- create more and better-connected habitats over large areas which provide the space for wildlife to thrive and adapt to climate change;
- enhance the wide range of benefits that nature provides to people, such as recreation opportunities, flood protection, cleaner water and carbon storage; and
- help to unite local communities, landowners and businesses through a shared vision for a better future for people and wildlife.[1]

Nature Improvement Areas are perhaps the most visible manifestation in England of the prominence of the 'landscape-scale approach' in current conservation policy (see Lisa Schneidau's article on the Northern Devon NIA in this edition, for a further perspective on NIAs). But they are by no means the first attempt at this approach to conservation. If you went for a walk along the river system that makes up the new Nene Valley NIA you would also pass through an RSPB 'Futurescape', a Wildlife Trust 'Living Landscape', target areas for the government's Higher Level Stewardship agri-environment scheme, and a strategic river restoration area on the River Ise. Just outside the NIA boundary are a number of other large-scale conservation areas, including two priority catchments for the Catchment Sensitive Farming scheme (which also operates through local partners in the River Nene catchment itself). The NIA partnership has grown out of many of these projects, building on existing partnerships between organisations and bringing in new partners, and those

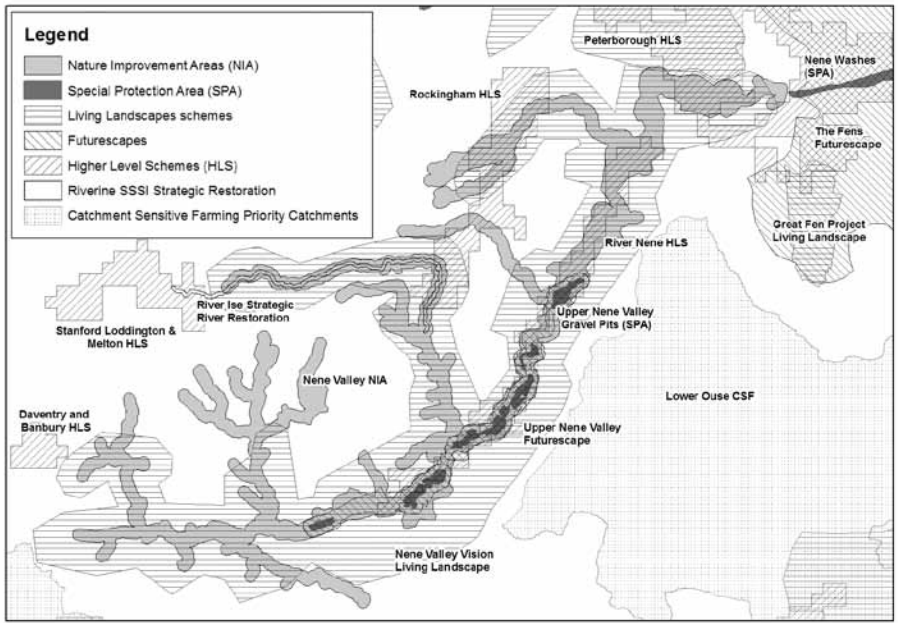
existing projects in turn have developed from past conservation initiatives in the Nene Valley going back to the 1980s. This is just one small example of the variety, patchwork character, and evolution over time, of large-scale conservation areas across England, and Great Britain as a whole. This is a subject Natural England has been studying over the last couple of years, and we have found it richer and more fascinating, but also more complex, the more we looked into it. This article gives some reflections on our experiences.

A growing interest in ecological networks and large-scale conservation

We began studying large-scale conservation (LSC) projects in England, Scotland and Wales in 2010, shortly before the *Making Space for Nature*[2] report by John Lawton and his colleagues was published. As in other European countries[3], there was already a growing interest across the British conservation community in the concept of 'ecological networks' and establishing conservation over large areas. This interest was, and still is, driven by a range of inter-related factors:

Concern over small and fragmented conservation sites, particularly if isolated by intensive land use, failing adequately to conserve biodiversity.[4] Given the need to "manage the entire mosaic, not just the pieces"[5], LSC approaches have been suggested to expand and link existing sites, provide zones of more sympathetic land use in the 'matrix' between them, and so better protect threatened species.[6]

Map showing the boundary of the Nene Valley Nature Improvement Area and the existing conservation areas that already existed in or near the new NIA when it was established. The boundary of the Wildlife Trust's Living Landscape has since been adjusted to match the NIA boundary.



A desire to restore large areas to a 'wilder' state[7], perhaps inspired by places such as Oosvaardersplassen in the Netherlands[8] and by big 'connectivity conservation' projects further afield, such as in North America and Australia.[9]

Benefits to people: Increasing awareness that conservation needs to take account of the benefits the environment provides to people – 'ecosystem services'[10,11] – and recognition that some of these, such as drinking water, depend on large-scale ecological processes and need to be managed over large geographic areas such as whole river catchments.

A desire to reconnect people with the environment, reverse the homogenisation of landscapes and restore or create distinctive places that provide benefits for both wildlife and for people.[12,13]

Environmental change: Growing concern about climate change and the need to adapt conservation strategies to some inevitable amount of change. In a future in which landscapes and ecosystems appear likely to be become increasingly dynamic, with a resulting need to consider landscape change, species movement and resilience across wide areas[14,15], large-scale approaches (both larger sites and better management coordination and functional links between them) will become increasingly important[16,17,18], including for the provision of 'ecosystem-based adaptation' for people.[19]

Interest in LSC has continued to grow since the publication of *Making Space for Nature*. In England, the government's policy aspirations for ecological networks were made explicit in the Natural Environment White Paper[20] and the new conservation strategy for England, *Biodiversity 2020*.[21] There are also equivalent policies in Wales[22] and Scotland[23, 24], though these are not necessarily directly influenced by the Lawton report. Natural England's purpose is to conserve the natural environment for current and future generations. This includes an important role in helping to deliver the commitments in the White Paper and *Biodiversity 2020*. Natural England therefore has a strong interest in understanding how LSC can best be put into practice.

When *Making Space for Nature* was published, many LSC initiatives already existed. These included the Wildlife Trust's Living Landscapes programme[25], the RSPB's recently re-launched Futurescapes programme[26], the England Biodiversity Group 'Integrated Biodiversity Delivery Areas'[27], and a variety of other projects and programmes, for example those managed by Butterfly Conservation, the Woodland Trust and the National Trust. There had been various small reviews and collections of case studies before[28], but nothing comprehensive. We could not find a definitive list of all the existing projects and conservation areas. It seemed important to take stock.

We therefore began a project in the summer of 2010 to try to review the objectives, approaches, experiences and outcomes of existing LSC projects. The project started within Natural England and later brought in colleagues at Atkins, the University of Southampton and the University of Cambridge (who had been independently researching the same topic).

Aims of the Natural England study

In our study, we aim to:

Build a good overview of large-scale conservation initiatives across Great Britain. We want to know how many there are, which organisations are involved, the different aims being addressed, and whether different 'types' of project can be identified.

Explore the approaches being taken to setting up and managing LSC initiatives. We are interested in what sorts of scientific and other information have been used, and in what ways, to inform site selection, scale and management. Given that LSC initiatives are potentially well-placed to address some aspects of adaptation to climate change, how important are adaptation considerations in influencing conservation goals and management decisions? We are also interested in gaining a better understanding of the social and institutional aspects of large scale conservation, which frequently involve partnerships and cooperation among multiple partners, landowners and volunteers. What kind of approach to setting up and managing LSC initiatives works best in different circumstances?

Determine whether areas with more large-scale conservation present have experienced better environmental outcomes. We know that some individual projects have been very successful at, for example, restoring areas of land and promoting some species populations[29], but is this reflected in large-scale improvements across the country? Have existing projects achieved real gains for biodiversity and other aspects of the environment, or are these projects primarily a new way of describing ongoing conservation action rather than a truly novel departure? Or is it too early to tell?

To answer these questions, we have compiled a database of LSC projects or initiatives, and carried out web-based and in-depth face-to-face surveys of people managing initiatives. We have also undertaken a range of spatial analyses.

Our project is not yet finished, but below we offer some thoughts on our emerging results and conclusions. These are personal reflections and do not necessarily reflect the view of Natural England. Nor is there space in this article to cover everything we have found. Although our study covered England, Scotland and Wales, this article focuses to some extent on England. (The situation in Scotland is discussed in more detail in a separate article by Bill Adams in this edition of *ECOS*[30].)

How do you define 'large-scale conservation'?

We had a general working definition of what 'large scale' conservation might entail: something based on coherent and recognisable biogeographic, hydrological or geological areas; focusing beyond individual 'sites' to understand the dynamics and interactions between them, with a corresponding awareness of, and management for, ecological processes rather than just individual species or vegetation assemblages; ideally aspiring to management of the whole area of interest in a coherent and coordinated way; and likely to consider the interaction of people and nature.[31]

Sunset over Irthlingborough: Irthlingborough Lakes and Meadows is the Wildlife Trust's newest nature reserve in Northamptonshire. Sitting at the heart of the Upper Nene Valley Gravel Pits SSSI, SPA and Ramsar site it has strategic importance for wildlife. The restored gravel workings provide a great resource for the local community. With funding from HLF and SITA Trust as well as Natural England's Higher Level scheme the site will be restored to its full potential with significant involvement from local people.

However, without necessarily moving away from such definitions, for the practical purposes of compiling and refining our list, we chose a simple definition; we included any conservation initiative with a focal area of at least 10 km^2 (1000ha) that appeared to be a distinct project or initiative, had objectives that at least partly focused on conservation and involved management on the ground to address those objectives, so we excluded things like research projects and area plans that involved no direct management activity.

This has thrown up a wide variety of conservation initiatives, including programmes of landscape projects managed by RSPB, the Wildlife Trusts and other NGOs, individual estates (both private and owned by NGOs), large nature reserves, conservation projects within National Parks, target areas for government grant and advice schemes such as Catchment Sensitive Farming and Higher Level Stewardship, community forests, and river restoration projects, among many others.

These projects and initiatives fit at least most aspects of our definition of LSC, but they are hugely varied. They have a wide variety of approaches to land tenure and management, to project partnerships (number and type of partners), to community engagement, and to other aspects of their design and management, including the spatial area they cover and their conservation goals.

The complexity of approaches to LSC in Great Britain means that it is difficult to produce a hard and fast definition of the features of a 'typical' LSC initiative. Rather, it is probably more useful to categorise and type the different initiatives, and to understand the reasons for the different approaches that have been taken and under which circumstances different approaches are most appropriate. One factor that clearly differentiates projects is the land tenure arrangement and approach to management. On that basis four distinct categories can be identified:

1. ***Conservation areas with a single landowner,*** such as private estates or owned nature reserves

2. ***Conservation areas or projects involving a small number of landowners*** that are all active partners in the conservation project (for example organisations with adjacent land holdings that they are managing together as a big reserve)

3. ***Target areas for government schemes*** such as Higher Level Stewardship or Catchment Sensitive Farming, where the area is designated by the funding provider, with many landowners involved

4. ***Projects led by a conservation partnership*** but seeking to influence management of land owned by many other landowners (often a large number of individual farmers.)

Even within these categories there are differences. We are currently exploring variation in characteristics such as spatial area, geographical location and conservation objectives, within and among projects in the four categories.

How many large scale conservation initiatives are there?

The identification and definition of some projects proved problematic. We found instances where one project might be given different names by two partner organisations, and certainly where different organisations had 'projects' that overlapped. This is nearly inevitable with vast regional project areas like some of the RSPB's Futurescapes (the Fens or Thames Gateway for example), and by design where government schemes deliberately included partner organisation projects, or NGOs developed projects to nest inside target areas for government grant schemes.

In some cases it has been difficult to decide whether or not a particular project involves sufficient action on the ground to justify inclusion. Conversely, we may have missed things that involve active management coordinated at a large scale, but are not as visible as single 'projects'. We certainly know we have missed some large privately-owned estates (particularly in Scotland) with significant engagement in conservation-focused land management; although there is a lot going on in such estates they are not necessarily prominently advertised as conservation projects, so are harder to spot.

Our list of LSC initiatives currently stands at around 800 (with the majority in England, though we believe the numbers for Scotland and Wales are an underestimate). Even with some uncertainty about the exact total, the sheer number of initiatives in three fairly small and densely populated countries was surprising.

Castor Flood Meadows is a SSSI on the western edge of Peterborough. The backwater adjacent to it is a valuable fish refuge and provides habitat for aquatic plants and invertebrates. Prior to the Nature Improvement Area the Wildlife Trust assessed the value of backwaters and identified measures to improve them, and the NIA project will take this further. As the Nene is a navigable river for much of its length, features such as backwaters are valuable stepping stones for wildlife.

Photo: Wildlife Trust for Bedforshire, Cambridgeshire and Northamptonshire

The geographical spread

We found that most of England's 159 National Character Areas (divisions of the country recognised as having distinct landscape, biodiversity, geodiversity and cultural attributes), and the equivalent areas in Scotland and Wales, have at least one LSC initiative in them, and some have many more. When the approximate borders of all the initiatives are put on a single map, a large area is shaded in. However, it's important to note that in many cases the boundaries of an LSC initiative encompasses a wide area in which currently only a small percentage is being actively conserved or restored. So by simply looking at a map of all the existing projects, one could rightly conclude that there is a lot of activity going on by different organisations and partnerships, but there is a real risk of over-estimating the area of land that is being affected.

Against this background of widespread activity, it is apparent that there are some areas in which there are numerous, in some cases overlapping, LSC initiatives. Cumbria in northwest England and the Fens in the east are two particular hotspots.

New approaches to conservation, or more of the same?

Many of these projects do seem to represent the beginning of a move away from a focus simply on preserving the last remaining fragments of high-quality wildlife sites to a more proactive attempt at restoration and creation, in some cases at a very large and ambitious scale.[32] This draws on, and develops further, real expertise that has been developed by many conservation organisations in recent decades in practical techniques for restoring particular habitat and ecosystem types, such as lowland reedbed and upland blanket bog.[33,34] The ecological re-creation and restoration being done can have quite different goals in mind. In some cases, the aspiration is to (re)create specific vegetation types to support particular species populations; in others, such as at the National Trust's Wicken Fen Vision project, the intention is to take a much more open-ended approach that focuses more on restoring ecological processes and less on reaching a specific endpoint.[35] While we think that we are seeing a new approach to conservation in Britain, many projects are relatively new and it will take time for their efforts to have a large effect, as we discuss below. There is also a real need for continued scientific research and monitoring to inform future work.

Has the Lawton Report made a difference?

The recommendations of *Making Space for Nature* are strongly evident in the White Paper and *Biodiversity 2020*. The report's strapline of 'more, bigger, better, joined' seems to have gained policy traction in England, and the recommendation for 'Ecological Restoration Zones' has resulted, less than two years later, in the 12 Nature Improvement Areas (albeit currently with funding only for a few years). The real test, however, will be whether this is carried through into a consistent long term framework to support future action.

Has *Making Space for Nature* influenced existing projects? We suspect its effects will be incremental. Overall, it has probably made project managers feel vindicated in what they are doing and make small adjustments rather than rewrite their management plans. This is partly because *Making Space for Nature* set out broad principles and general recommendations without going into specifics – as a result most existing projects can probably identify at least some aspects of *Making Space for Nature's* recommendations that they are already addressing. It could also be argued that the influence has been in both directions, and that Lawton et al.'s conclusions were strongly influenced by the visions of some existing LSC programmes, particularly those managed by the large NGOs. In addition, we have found that principles of conservation science are only one aspect among several that influence and drive decision-making in LSC projects. Practical realities such as the availability of land and funding could in many cases have a greater influence, in the short term and at the scale of individual projects, on decisions about what conservation management should be done and in what spatial configurations.

The future of large-scale conservation in Great Britain

Coordination: The wide variety of large-scale initiatives that exist in England, Scotland and Wales indicate, we believe, a high level of energy, commitment and ambition across the conservation sector. These initiatives have achieved a lot and have the potential to achieve a lot more. We need them to work if we are to reverse the decline in biodiversity and make our environment and landscapes a better place to live in. But there are a range of factors that the wider conservation community has to get right if that potential is to be fully realised. One challenge will be to coordinate better all the existing activity, and balance the need for area- and community-based projects that address local interests with some sort of overall vision and coordination at larger scales. This could be one of the real tests of success for the NIAs, many of which contain multiple well-established LSC initiatives led by different organisations.

Timescales: To be truly successful, such coordination will need to be long-term, as ecological networks can't be built in a day, or even in a few years. Conservation of this sort is a long-term process, requiring long-term investment. Partnerships and community engagement take time to establish. Seeing a large-scale effect on the ground takes even longer. For example, the Great Fen project, in many ways one of the flagships for LSC in England, has been running for about 10 years. Although it has been extremely successful, it has only recently acquired enough land to have a sufficient influence over hydrology to be able to start major restoration of the new land bought by the project. Interviews with project managers suggest a careful balance can be required to sell a vision that inspires people while not creating unrealistic expectations about how much can be achieved in a short space of time.

Funding: Our interviews have also identified a clear need for sustainable funding structures, underpinned by policies that remain consistent over the long term. The funding sources that projects draw on are typically short-term in ecological terms. This may have helped to drive innovation (e.g. to consider climate change, or to add community benefits to purely biodiversity-focused initiatives). On the other hand, short-term funding cycles can cause momentum to be lost, and divert time and resources from conservation on the ground and monitoring of its effectiveness. They possibly also lead to unnecessary reinvention and prioritisation of novelty over consolidation on past successes.

There are some inspiring examples of conservation projects that have tapped into non-traditional funding sources. These include innovative partnerships between conservation organisations and water companies in river catchments in Devon, Lancashire, the Lake District, West Pennines, and the Peak District. The RSPB is also working with a gravel extraction company to create a new reserve on a former mining site in Cambridgeshire and with the Crossrail project to use excavated material produced by digging a new railway tunnel under London to create a new intertidal reserve on the Essex coast. Funding of this sort might provide one avenue to help secure a broader and more sustainable funding stream in future. But it doesn't reduce the need for a long term and consistent policy framework and for the conservation community as a whole (both government and-non government) to consider how this promising approach to conservation can be sustained and funded in the long term.

These are just some of a much wider set of conclusions that are emerging from our research. There was not space to cover them all here, but we will present our findings in detail in a report, *A review of large-scale conservation in Great Britain*, in 2013. We also hope to make available a database providing summary information about all the conservation initiatives we have identified.

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