

Local nature reserves have long been the Cinderella of nature conservation, but **John Box** and **George Barker** argue that they have a key role as local wilderness areas for the enjoyment and conservation of nature

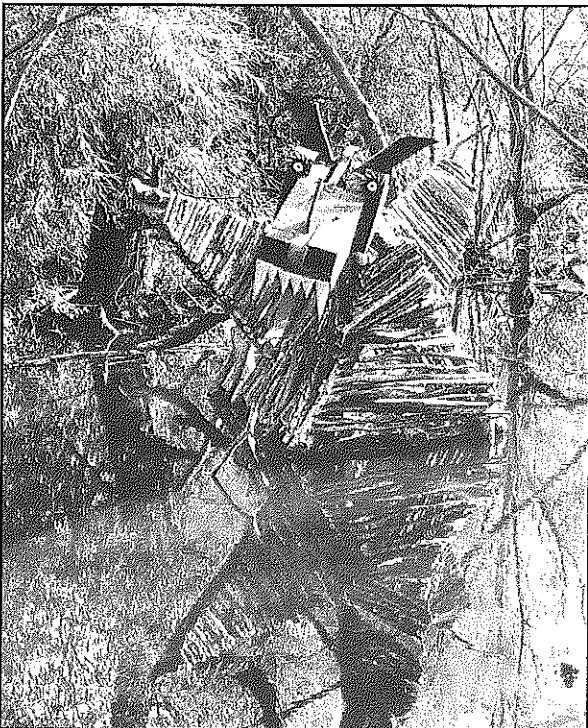
DELIVERING SUSTAINABILITY THROUGH LOCAL NATURE RESERVES

George Barker



Photographing wild flowers

John Box



'Swamp monster' at Plants Brook Local Nature Reserve in Birmingham, constructed under guidance from LNR rangers by young people during one summer holiday. LNRs often feature this kind of activity, which helps to link the young community with the site and introduces them to its natural interest and value

LOCAL NATURE RESERVES

The average area of local nature reserves in England

Year declared	Number declared	Average area, ha
1951-1960	4	417.7
1961-1970	16	149.4
1971-1980	39	43.3
1981-1985	45	39.2
1986-1990	105	26.7
1991-1995	284	27.6

From Sot's Hole and Bluebell Wood to Teveral/Pleasley Railway Network to Camley Street Natural Park – a remnant woodland in the Sandwell Valley to a complex of disused railway lines in west Nottinghamshire to a series of specially created wildlife habitats beside a canal in the inner London borough of Camden – local nature reserves (LNRs) cover a fascinating range of sites and habitats from the wildest countryside to inner city areas. And they have one thing in common: LNRs are declared and managed by local authorities as nature reserves.¹

The legislation under which LNRs may be declared makes it clear that nature reserves must provide special opportunities for studying and carrying out research on wildlife or natural features and/or preserve wildlife or natural features of special interest.

The majority of LNRs declared prior to the late 1980s were either of high intrinsic value for wildlife or their natural features and/or were used by schools for field-studies. In the late 1980s, the then Nature Conservancy Council gave its opinion as a statutory consultee that the wildlife or natural features of a site were of 'special interest' if the public found them so for the quiet enjoyment and the appreciation of nature.

The value which local communities place on the wildlife and natural features of sites is seen by English Nature and the Countryside Council for Wales as an important and legitimate factor in commenting on proposals for new LNRs,² and is being considered in the policy review currently being undertaken by Scottish Natural Heritage.

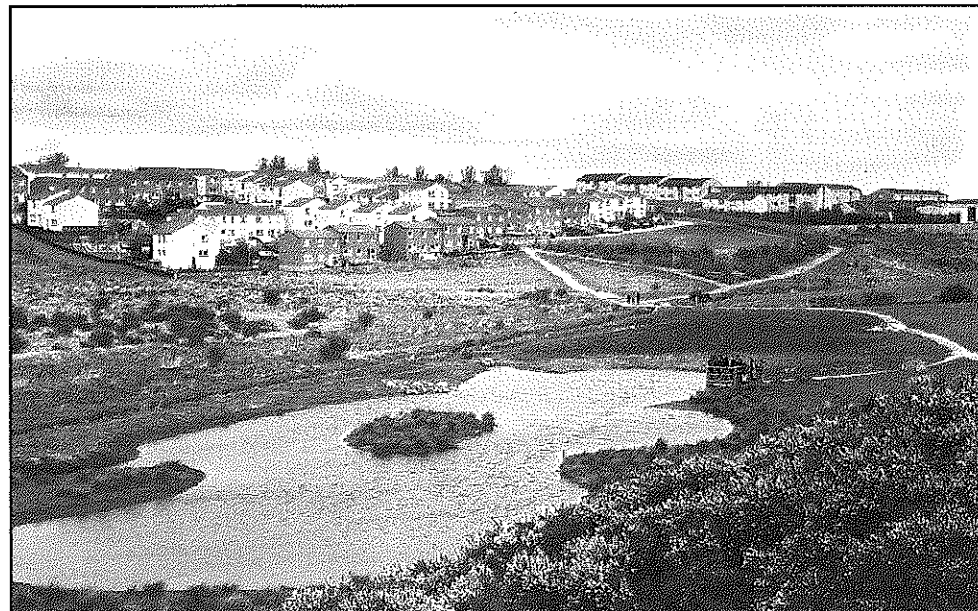
Accessibility, site interpretation for the benefit of all users, the focus that LNRs can give for local community involvement and development, and the enjoyment which users obtain are all being signalled as important factors in the choice of LNRs. Recognition of the physical and psychological benefits of access to natural green spaces on a regular basis³ has encouraged local authorities – particularly those in urban areas – to make much more positive use of their powers.

The number of LNRs in the UK increased from 24 in 1970 to 76 in 1980, followed by a much more rapid increase to 236 in 1990. The total as of March 1997 is 629 (564 in England, three in Northern Ireland, 24 in Scotland and 38 in Wales). Many of the sites are in urban or urban fringe locations, and the rise in the numbers of LNRs since 1980 coincides with the production of strategies for nature conservation in which urban local authorities were the most active.

Strategic context and sustainability

It makes sense for the LNRs in the area of a local authority to be set in a clear strategic framework. They are best seen as nodes in a multi-functional green network which sets them in a landscape context, values them as part of the environmental resources of the county or district, and draws attention to their excellence as sites of nature conservation value.⁴

Reference to specific LNRs or potential LNRs in the local development plan confers a recognised land use on the sites. This has the important practical benefit of signalling to



Den of Maidencraig Local Nature Reserve, Aberdeen, featuring a newly created pond close to a residential area

everyone that there is no potential for other land uses. Such a positive land use allocation helps to move away from the idea that nature conservation only occurs on land which has no other use or which no-one wants. This is particularly important in urban areas.

Bigger sites are generally better. Large LNRs are usually more cost-effective to staff and manage than small ones. Larger sites are better able both to demonstrate ecosystem functions and to accept multiple use without damage and without different activities intruding upon one another.

However, the size of LNRs in England has decreased over the past 50 years, as outlined in the panel below left. Although the average area of all sites has been around 27 ha since the mid-1980s, 44 per cent of the LNRs declared between 1990 and 1996 were less than 10 ha in area. This is due to the significant increase in urban and urban fringe LNRs, which are generally small sites, reflecting the higher land values and greater competition for land in urban areas.

Anecdotal evidence suggests sites of less than 2 ha are rarely suitable for multiple use and can be subject to ecological problems such as small and unstable populations and boundary effects which permeate the site.

Sustainability demands that the biological capital (the biodiversity of habitats and species) left for the next generation is not diminished from one generation to the next. The provision of accessible natural green space in urban areas⁵ can be used to monitor sustainability as it integrates biodiversity with the quality of life for residents. One

hectare of LNR per thousand population has been proposed as a minimum target for the provision of accessible natural green space in urban areas, in conjunction with a hierarchy of natural open spaces ranging from 2 ha to 500 ha at increasing distances from each resident.^{5,6}

A comparison of the provision of LNRs in a structured sample of 25 urban local authorities in England in 1993 and 1997 shows how only two local authorities exceeded the target of 1 ha of LNR per thousand population in 1993, while only four exceeded the target in 1997 (see the panel overleaf).

Management for wildlife and people

The inter-generational accounting system implicit in environmentally sustainable development requires that the quality of the nature conservation resource is maintained over long time periods. The next generation will only be able to know what it finds and will not be able to comprehend fully past losses. So important sites need systems which can deliver good site management to maintain the quality of the resource over 25-30 years (a human generation).

A high priority needs to be given by local authorities to LNRs because these 'natural parks' are usually lean on resources, helpful to education, and enjoyed and supported by local people, and they protect locally valuable natural assets. The key factor in the success of most urban and urban fringe LNRs is good site-based staff.

Standards can be raised through LNR managers keeping in contact with one another and through the development of links with managers of

national nature reserves. Regional workshops might be a practical way of going about doing this, with participants visiting sites and discussing issues affecting them. The benefits of LNRs usually outweigh the costs and, particularly if partnership funding is achieved, local authorities can get a very good bargain.⁷

Planning permissions have led to the establishment and management of several LNRs including Hills and Holes LNR and the Scrub Field LNR (Northampton Borough Council). In a few cases, other organisations own and manage LNRs through a management agreement with the local authority – for example South East Water at Arlington Reservoir (East Sussex County Council) and Weirwood Reservoir (East Sussex and West Sussex County Councils), and Forbo-CP at Bassington LNR (Blyth Valley Borough Council, Northumberland).

Management advisory groups allow the exchange of information and opinions between interested organisations, site users, local residents and the local authority, and are also a valuable element in Local Agenda 21 work within the current trend towards local empowerment and ownership. These groups are made more effective and meaningful if local communities and interest groups are adequately represented. Lewes Railway Land LNR (Lewes District Council, East Sussex) has a Junior Management Board drawn from the local primary and secondary schools which use the site. In view of the use made by schools of many LNRs and the inter-generational nature of sustainability, this idea is worth further consideration.

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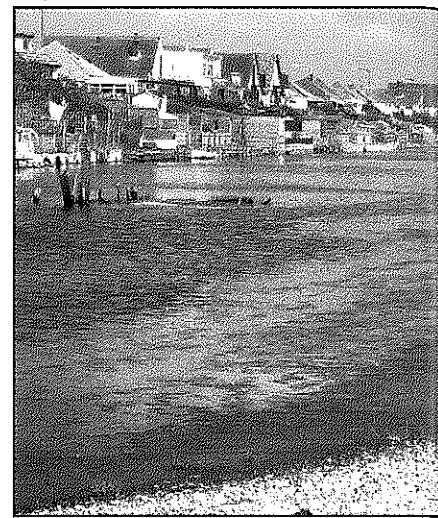
LOCAL NATURE RESERVES

Changes in LNR provision in terms of area and population per area for a sample of urban local authorities in England between 1993⁵ and 1997

	Total LNR area, ha		Population per hectare of LNR ^a	
	1997	(1993)	1997	(1993)
Less than 1,000 people per hectare of LNR				
Wakefield	421	(313)	754	(979)
Canterbury	168	(143)	797	(889)
Norwich	158	(52.5)	809	(2,299)
Gloucester	110	(4)	952	(21,349)
1,000-5,000 people per hectare of LNR				
Dudley	234	(182)	1,334	(1,653)
Portsmouth	119	(119)	1,590	(1,468)
Leeds	436	(416)	1,661	(1,621)
Hereford	29	(6)	1,741	(8,164)
Plymouth	105	(105)	2,436	(2,274)
Peterborough	63	(51)	2,519	(2,895)
Sandwell	112	(30)	2,622	(9,307)
Stoke-on-Trent	82	(82)	2,990	(2,985)
Barnet	101	(5)	3,051	(57,755)
Leicester	91	(2)	3,224	(135,300)
Haringey	49 ^b	(36)	4,333	(5,174)
5,000-10,000 people per hectare of LNR				
Coventry	48	(48)	6,302	(6,094)
Southwark	30	(30)	7,627	(6,572)
Islington	20 ^b	(2.5)	8,760	(62,080)
10,000-50,000 people per hectare of LNR				
Oxford	13	(2)	10,215	(49,545)
Southampton	14	(14)	15,121	(13,886)
Liverpool	21	(21)	22,571	(21,348)
Derby	9	(9)	25,611	(23,011)
Birmingham	39	(39.5)	25,856	(23,668)
Newcastle upon Tyne	8	(8)	35,450	(32,875)
50,000-100,000 people per hectare of LNR				
Camden	2 ^c	(1)	91,250	(170,500)

Notes:

- a** The population per hectare of LNR reflects population changes as well as changes in the total LNR area in a local authority area.
- b** One 16 ha LNR is shared between Haringey and Islington and the 16 ha are included in both sets of figures.
- c** There has been no actual increase in the area of LNRs in Camden; the apparent increase reflects a minor change in the way records are rounded.



research, interpretative information, environmental data, site user surveys, and records of educational visits.

Building on success

LNRs can make a significant contribution to international projects such as the Biodiversity Convention through national projects such as the UK Biodiversity Action Plan. LNRs will feature in all local biodiversity action plans and, as nodes in multi-functional green networks, they have a part to play in providing a pleasant environment in which people can live and work. In so doing, LNRs can be used to achieve targets for accessible natural green space which can be a monitor of sustainability by integrating biodiversity with the quality of life.

The purposes of nature reserves usually involve education, ecological research and the preservation of natural features. However, LNRs can play a role in community development because of the values that natural landscapes have as places where people can enjoy the peaceful contemplation of nature.⁸ They provide opportunities for people to contribute to global issues at a local, human scale and show people that nature conservation is relevant and of benefit to their everyday life. They can provide an opportunity for community development by bringing people together over relatively uncontentious issues in order to collaborate in improving the local environment.

The success of the LNRs programme in the UK has attracted international attention, and the concepts have been adopted in other countries where similar arrangements did not previously exist, such as South Korea.

The Urban Forum of the UK Man and the Biosphere Committee⁹ has begun an

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All LNRs need a management plan, which, ideally, should have four distinct elements:

- a policy statement;
- a costed three-year work plan;
- a site monitoring programme; and
- a site database.

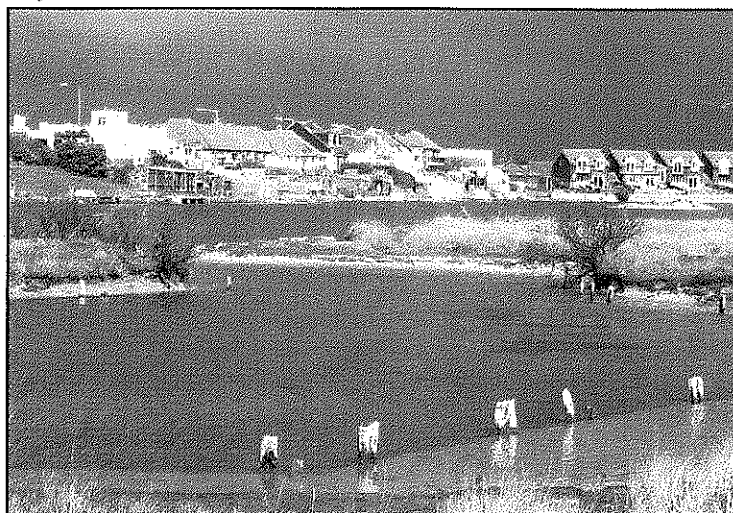
The short *policy statement* should set out the purpose of the LNR, its local significance, the main aims or objectives and how these are to be attained, and, in general terms, who will do what.

The *costed three-year work plan* should provide full details for the first year, with the second and third years in outline. The work plan can be rolled

forward annually as part of the planning and budget process of the local authority.

The *site monitoring programme* needs to be designed to examine whether the management and use of the site is achieving the main aims for the LNR. The programme should set out explicitly how and by whom the results of monitoring will be fed back into the work plan in order to ensure that targets and overall aims are achieved and, if necessary, to adjust the policy statement.

All the data for the LNR should be maintained on a *site database*. Such data can include species records, results of



Widewater Lagoon Local Nature Reserve – a saline lagoon between Lancing and Shoreham in West Sussex. Situated between a bathing beach and houses, it is home to rare invertebrates and shingle vegetation

accreditation scheme focused primarily, but not exclusively, on urban LNRs and analogous sites. This scheme aims to construct a network of good sites to provide the basis for study tours and demonstrate best practice in respect of biodiversity and urban and urban fringe systems. It is interesting to reflect that much of the UK can be regarded as being directly affected by urbanisation pressures, unlike comparable areas in northern Europe.

At site level, individual local authorities are the key actors. LNRs are declared and managed under powers which are their sole province. The lead department varies from local authority to local authority, with planning often being the key department. Education departments have a potentially valuable role given that LNRs are extensively used by schools.

The Association of Local Government Ecologists (ALGE) could play an important role in encouraging high standards in site selection, management, data-gathering, recording and monitoring. Individual members of ALGE are the key contacts locally for other organisations and are in a position to influence their policies and actions in relation to LNRs.

The statutory nature conservation agencies already exert a considerable influence in their role as statutory consultees. Guidance is provided on site selection criteria, the evaluation of the nature conservation resource, and site management and monitoring. However, it is not very clear whether they see themselves in partnership with local authorities as champions of LNRs or simply as reactive consultees. LNRs could provide a good focus for the nature conservation agencies in developing their community

involvement and educational programmes.

The voluntary nature conservation organisations and natural history societies often help with site recording and monitoring, and frequently give advice on site management and educational material. They often give strong encouragement to the local authority to acquire and to manage important sites as LNRs. Indeed, these organisations manage several LNRs on behalf of a local authority.

Local communities are rarely involved in LNRs to the extent that they could be, but in many cases local residents – as opposed to local conservation organisations – have been prime movers and are intimately involved in site management and use. In developing Local Agenda 21 programmes, LNRs can offer good opportunities for people to improve their local environment and get involved in ways which will help the development of local communities.

Business, industry, charitable trusts and similar bodies are usually seen as sources of help in-kind or of grants of money. They may, however, be involved as landowners. South East Water, for example, actively sought declaration of two of its reservoirs as LNRs and contributes resources towards their management as nature reserves. Forbocp has supported the declaration of Bassington LNR, involving an area of woodland and grassland which it owns in Cramlington, north of Newcastle-upon-Tyne.

A major weakness of LNRs is the lack of knowledge about them among both the public and the professionals involved in local authorities and nature conservation bodies. Interest in LNRs has grown substantially only since the

social benefits of wildlife and nature conservation have begun to be more widely recognised.

They have their origin in the recommendations of the Wild Life Conservation Special Committee (1947),⁸ which established the framework for nature conservation in the UK and suggested a national suite of protected areas, including national nature reserves, national parks, conservation areas (which incorporated suggestions for sites of special scientific interest) and local nature reserves. The hope of the Special Committee was that sites which represented sites of local scientific interest would be protected, so that they could be used by schools for field teaching and experiment, and so that people with no special interest in natural history could 'derive great pleasure from the peaceful contemplation of nature'.

Subsequent legislation could not capture the holistic approach of the Special Committee to nature conservation and the potential of nature reserves for bringing wider benefits to society. The Earth Summit in 1992 emphasises the wisdom of a report written 50 years ago and reinforces the potential which LNRs have for addressing both biodiversity and the quality of our own lives. ■

John Box is a Principal Environmental Scientist with Wardell Armstrong consultants and chair of the Urban Forum of the UK-MAB Committee. George Barker is the Urban Programme Coordinator for English Nature. This article has been prepared by the authors on behalf of the Urban Forum of the UK-MAB Committee as a contribution to UNESCO MAB Project 11 (Urban Systems), and the helpful suggestions from a number of colleagues are gratefully acknowledged. A longer article on this subject by George Barker and John Box is published in the September 1998 issue of the Journal of Environment Planning & Management (vol. 41, no. 5).

Notes

1 In Great Britain LNRs are declared under Section 21 of the National Parks and Access to the Countryside Act 1949, in consultation with either English Nature, the Countryside Council for Wales or Scottish Natural Heritage. National nature reserves (NNRs) are separate designations, but some LNRs can also be sites of special scientific interest

2 *Local Nature Reserves in England*. English Nature, Peterborough, 1991, revised 1995; *Acting Locally on Behalf of the Environment: the Role of Local Nature Reserves*. Countryside Council for Wales, Bangor, 1996

3 C.L.E. Rohde and A.D. Kendle: *Human Well-Being, Natural Landscapes and Wildlife in Urban Areas: A Review*. English Nature Science No. 22, 1994

4 G. Barker: *A Framework for the Future: Green Networks with Multiple Uses in and around Towns and Cities*. Research Report 256, English Nature, Peterborough, 1997

5 J. Box and C. Harrison: 'Natural spaces in urban places'. *Town & Country Planning*, 1993, 62, Sept., pp.231-235

6 C. Harrison, J. Burgess, A. Millward and G. Dawe: *Accessible Natural Green Space in Towns and Cities: A Review of Appropriate Size and Distance Criteria*. Research Report 53, English Nature, Peterborough, 1995

7 R. Smyth: *The Blackbrook Valley Project: 1981-1988*. Urban Wildlife Now No.6. Nature Conservancy Council, Peterborough, 1990

8 *Conservation of Nature in England and Wales*. Wild Life Conservation Special Committee. Cmd 7122. HMSO, London, 1947

9 This article is based on a recent review of LNRs in the UK by the Urban Forum of the UK Man and the Biosphere Committee. *Local Nature Reserves. A Time for Reflection: A Time for New Action* (1998) is available from Chris Gordon at the Wildlife Trusts, The Green, Witham Park, Waterside South, Lincoln LN5 7JR. Please send an A5 SAE with 31p stamp

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