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CARFAX

Statutory Local Nature Reserves in the United Kingdom

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ABSTRACT *Local authorities in Great Britain have had the powers to acquire, declare and manage statutory Local Nature Reserves since 1949; these powers were extended to Northern Ireland in 1985. As of March 1997, there are some 564 Local Nature Reserves in England, three in Northern Ireland, 24 in Scotland and 38 in Wales. Local Nature Reserves are important for biodiversity and nature conservation at a local level and can have a special role for local schools. The overall situation in respect of Local Nature Reserves has been recently reviewed by the Urban Forum of the UK Man and the Biosphere Committee. This review will add impetus and purpose to the wide variety of programmes and projects involving Local Nature Reserves. It will add emphasis to their potential not only for nature conservation and environmental education but also for community development.*

Introduction

Local Nature Reserves (LNRs) are declared and managed by local authorities under powers given by Section 21 of the National Parks and Access to the Countryside Act 1949 (the NPAC 1949). They have their origin in the recommendations of the Wild Life Conservation Special Committee (1947) which established the framework for nature conservation in the UK and suggested a national suite of protected areas comprising National Nature Reserves, Conservation Areas (which incorporated suggestions for Sites of Special Scientific Interest), National Parks, Geological Monuments, Local Nature Reserves and Local Educational Nature Reserves. The NPAC 1949 combined elements of several of these categories in its definition of a nature reserve (Section 15, NPAC 1949). The hope of the Special Committee was to see sites protected which represented sites of local scientific interest, which could be used by schools for field teaching and experiment, and in which people with no special interest in natural history could "derive great pleasure from the peaceful contemplation of nature." LNRs sit together with National Nature Reserves and Sites of Special Scientific Interest in the NPAC 1949 as separate categories of protected area. While all National Nature Reserves are now also Sites of Special Scientific Interest under the Wildlife and Countryside Act 1981, the majority of LNRs are not. In exercising their powers under Section 21, local authorities in England must consult with English Nature and in Scotland and Wales with Scottish

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Natural Heritage and the Countryside Council for Wales, respectively. Model sets of bye-laws agreed by the relevant government departments speed up the nevertheless lengthy process of approving bye-laws proposed for LNRs.

The NPAC 1949 states that LNRs must provide special opportunities for studying and carrying out research on wildlife or natural features, or be managed so as to preserve wildlife or natural features of special interest, or both. Although this has allowed considerable variety in the kinds of places declared as LNRs, the majority of LNRs declared up to the late 1980s were either of high intrinsic value for wildlife or natural features and/or used by schools for field studies. The amenity and experimental aspects flagged up by the Wild Life Conservation Special Committee were generally neglected.

A change came in the late 1980s when the Advisory Committee for England of the then Nature Conservancy Council gave its opinion as 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 appreciation of nature. This view was more formally published in 1991 (English Nature, 1991) and English Nature became more proactive in suggesting LNR designations (English Nature, 1992; Larwood, 1997)—a considerable change from the reactive-only policy of the 1950s and 1960s. The clear guidance issued in 1996 in Wales (Countryside Council for Wales, 1996) has been combined with a more proactive approach by staff of the Countryside Council for Wales. Scottish Natural Heritage is currently exploring the context and position of LNRs in Scotland and a programme is still evolving in Northern Ireland.

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 and is being considered in the review currently being undertaken in Scotland. Rohde & Kendle (1994) have shown the physical and psychological benefits of access to natural greenspaces on a regular basis. The enhanced recognition of the benefits of nature for people and local communities has encouraged urban local authorities to make much more positive use of their powers under the NPAC 1949 than had previously been the case (Box, 1991a, 1991b). Encouragement to do so is also provided by the incorporation of LNRs into minimum standards for the provision of accessible natural greenspace which suggest not less than one hectare of LNR per thousand population (Box & Harrison, 1993; Harrison *et al.*, 1995; English Nature, 1996).

The cumulative number of LNRs in England, Scotland and Wales rose from 127 in 1985 to 549 in 1995, with most of the new sites in urban or urban fringe locations (Table 1 and Figure 1). By March 1997 there were 564 LNRs in England, three in Northern Ireland, 24 in Scotland and 38 in Wales. The rise in the numbers of LNRs coincides with the production, starting in the mid-1980s, of strategies for nature conservation in which urban local authorities were the most active. Most strategies refer to LNRs and many suggest sites for declaration as LNRs. The aftermath of the Earth Summit at Rio de Janeiro in 1992, notably the Biodiversity Convention, the Local Biodiversity Action Plans linked to it, and Local Agenda 21, together with heightened public and political awareness, have accelerated the upward trend. The statutory nature conservation agencies now suggest that selecting LNRs should be part of a broad environmental strategy covering landscape, nature conservation, environmental education and socio-economic issues.

Table 1. Cumulative numbers of LNRs in Great Britain declared in urban, urban fringe and rural areas, 1950–95

	1950–55	1956–60	1961–65	1966–70	1971–75	1976–80	1981–85	1986–90	1991–95
Urban									
England	0	0	0	0	1	2	7	43	131
Scotland	0	0	0	0	0	0	0	0	2
Wales	0	0	0	0	0	0	2	2	4
Urban fringe									
England	0	2	3	6	10	22	42	89	232
Scotland	0	0	0	0	0	0	1	1	9
Wales	0	0	0	1	2	3	6	7	14
Rural									
England	2	2	4	14	23	36	56	81	136
Scotland	1	1	2	2	2	5	5	5	8
Wales	0	0	0	1	2	8	8	8	13
All LNRs	3	5	9	24	40	76	127	236	549

Note: A town or city covering more than 1 km^2 is classed as an urban area. An LNR appearing from the map to be surrounded by an urban area is classed as urban. An LNR within 1 km of an urban area is classed as urban fringe. LNR falling into neither of these categories are classed rural. Where a coastal LNR is flanked on the landward side by an urban area it is normally classed as urban fringe. (Definitions based on Eggo, 1990).

The success of the LNRs programme has attracted international attention (Barker, 1995) and the concepts have been adopted in some other countries such as South Korea where similar arrangements did not exist already (Kim Kwi-Gon, pers. comm.). The Urban Forum of the UK-MAB Committee has begun an accreditation scheme focused primarily, but not exclusively, on urban LNRs and analogous sites. This scheme aims to construct a network of good sites which will give the basis for study tours and demonstrate best practice in respect of biodiversity and urban and peri-urban systems. This network will be a UK contribution to the UNESCO MAB Project No. 11 on urban systems. Within an international framework, much of the UK can be regarded as being directly affected by urbanization pressures, unlike areas of comparable size in northern Europe. Since many rural LNRs, Country Parks and similar sites are generally accessible and are used heavily for education, thus performing important functions which benefit the community, the Forum should find it possible to consider all LNRs as potential sites for accreditation in the context of Project No. 11.

Site Selection and Consultation

LNRs must be good quality sites. The NPAC 1949 requires that they must provide *special* opportunities for study and research and/or preserve wildlife or natural features of *special* interest in the area. Guidance on this is given by English Nature (1991) and the Countryside Council for Wales (1996).

Opportunities for study and research may or may not be being undertaken

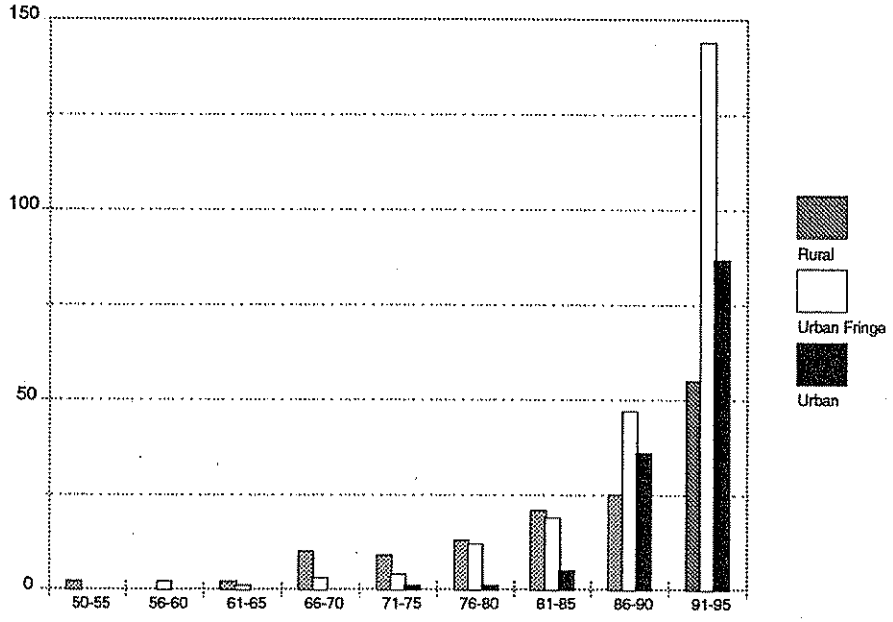

Figure 1. The number of LNRs declared in England in five-year periods from 1950 to 1995 inclusive. (*Notes:* This shows the actual number declared in each time period and is not a running total. The definitions of urban, urban fringe and rural are given in the note to Table 1).

prior to declaration. In fact, declaration as an LNR often allows opportunities to be realized. Therefore the potential of an LNR for study and/or research can, and should, be considered. In considering the natural interest of a possible LNR, sites need to be judged on what is present and not on potential interest. Where habitat and/or species protection or protection of geological features is the primary reason for wanting to declare an LNR, sites should be selected on the basis of systematic survey and review of the natural resources of the local authority area.

In any evaluation there seems little merit in trying to devise a system which seeks to weigh different sociological, geological and ecological aspects against one another. Each needs separate study. The NPAC 1949 does not make demands of all, but requires special qualities in at least one. It is likely that some weighting will be given in selecting sites which reflects current local or national thinking. For example, it has been suggested that LNRs should be near to where people live and able to become a focus for community involvement and learning (Countryside Council for Wales, 1996).

While the statutory nature conservation agencies all recognize the need to keep within the constraints imposed by the NPAC 1949, they are clearly anxious to see the values which potential LNRs have to local communities fully recognized. Accessibility, site interpretation for the benefit of all users, the focus which LNRs can give for local community involvement and development, and the enjoyment which users obtain are being signalled as important factors in the choice of LNRs.

Table 2. Changes with time in average area of LNRs in England

Year declared	Number declared	Total area (ha)	Average area (ha)
1951–60	4	1671	417.7
1961–70	16	2391	149.4
1971–80	39	1770	43.4
1981–85	45	1765	39.2
1986–90	105	2805	26.7
1991–95	284	7845	27.6

Note: A few linear LNRs have a length but no published area; these are not included in the above figures.

Large sites are usually more cost-effective to staff and manage than small ones. Generally, bigger LNRs are better able to demonstrate the functions of an ecosystem and are more likely to be able to accept multiple use without damage and without different activities intruding upon one another. In urban areas, the bigger sites are generally better able to provide opportunities for local people to use and enjoy and for the site to provide a demonstration project for some aspect of urban nature conservation. However, the size of LNRs in England has decreased over the past 50 years (Tables 2 and 3) and, although the average area has been around 27 ha since the mid-1980s, 44% 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 because of 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. Such sites also present management problems inherent in their small size, such as small and unstable populations of species and edge-effects which permeate the site. The current debate in Scotland about whether LNRs should have buffer zones is particularly relevant to small sites. Indeed, the issue

Table 3. Size distribution of LNRs in England

	1950–90 (30 March 1990) From Box (1991a)		1990–96 (from 1 January 1990 to 31 December 1996)	
Area (ha)	No. LNRs	(%)	No. LNRs	(%)
0– 9	51	29	169	44
10– 19	38	22	76	20
20– 29	15	9	46	12
30– 39	11	6	26	7
40– 49	12	7	15	4
50– 99	22	13	36	9
100–199	12	7	7	2
200–299	6	3	4	1
300–399	3	2	0	0
400–499	3	2	0	0
500 +	2	1	3	1

of buffer zones is one which would benefit from wider debate, perhaps in the context of networks of greenspace which meet multiple needs (Barker, 1997).

Section 21 of the NPAC 1949 states that: "A local authority shall exercise their functions under this Part of the Act in consultation with the Nature Conservancy" (para 6). This is usually taken to mean only consultation prior to declaration. Formal consultation is with the Council of the statutory nature conservation agencies. In Wales, the Council itself looks at all proposals, thereby ensuring consistency across the Principality. In Scotland, the consultation issue is currently being reviewed but at present consultation is with 'the body corporate'. In England, Council has delegated this function to Local Teams. Local variations in approach and in standards for site selection, as well as in the relative priority given to LNRs, should not be allowed to compromise the published guidelines setting out the standards for site selection and for the consultation process (English Nature, 1991).

It could be argued that everything a local authority does which affects a LNR is exercising its "functions under this Part of the Act" and should, therefore, involve consultation with the statutory nature conservation agency. This is impractical given the large number of LNRs, but it does provide the rationale for the nature conservation agencies to intervene where they have reason to believe that there are problems or that standards are slipping.

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. This can be done in one or more of documents such as a Nature Conservation Strategy, a Countryside Strategy, a Natural Heritage Strategy, a Local Biodiversity Action Plan, or more formally in the statutory Development Plan. Reference to specific LNRs or potential LNRs in the Development Plan provides a positive land use for the site(s). This has important practical benefits, where the land is already in local authority ownership, by signalling to all the parts of a local authority that there is no potential for other land uses. It can also give a purpose to land which people may have looked upon as redundant space waiting for something to happen. A degree of stability is introduced which may bring social and economic benefits. Such a positive allocation of land use helps to move away from the idea, particularly in urban areas, that nature conservation only occurs on land which has no other use or which no one wants.

LNRs are best seen as nodes in multi-functional green networks (Barker, 1997). This 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.

Box & Harrison (1993) address the question of minimum targets for accessible natural urban greenspace and suggest one hectare of LNR per thousand population. The range of provision of LNRs in terms of area and population for a sample of urban local authority areas given by Box & Harrison (1993) has been updated in Tables 4 and 5. Targets for the provision of accessible natural open spaces can be used to monitor sustainability (Harrison *et al.*, 1995) and LNRs can clearly contribute to these targets.

Table 4. Sample of urban local authorities in England showing the range of provision of LNRs in terms of area and population: a comparison between the position in 1997 and in 1993 (1993 figures in brackets)[1]

People per ha of LNR	Population[2]	Area of LNR in ha[3]	Population per ha of LNR
Less than 1000			
1 (2) Wakefield	317 300 (306 300)	421 (313)	754 (979)
2 (1) Canterbury	133 900 (127 100)	168 (143)	797 (889)
3 (7) Norwich	127 800 (120 700)	158 (52.5)	809 (2 299)
4 (17) Gloucester	104 700 (91 800)	110 (4.3)	952 (21 349)
Between 1000 and 5000			
5 (5) Dudley	312 200 (304 000)	234 (181.7)	1 334 (1 653)
6 (3) Portsmouth	189 300 (174 700)	119 (119)	1 590 (1 468)
7 (4) Leeds	724 400 (674 400)	436 (416)	1 661 (1 621)
8 (13) Hereford	50 500 (49 800)	29 (6.1)	1 741 (8 164)
9 (6) Plymouth	255 800 (238 800)	105 (105)	2 436 (2 274)
10 (8) Peterborough	158 700 (148 800)	63 (51.4)	2 519 (2 895)
11 (14) Sandwell	293 400 (282 000)	112 (30.3)	2 622 (9 307)
12 (9) Stoke-on-Trent	245 200 (244 800)	82 (82)	2 990 (2 985)
13 (22) Barnet	308 200 (283 000)	101 (4.9)	3 051 (57 755)
14 (24) Leicester	293 400 (270 600)	91 (2)	3 224 (135 300)
15 (10) Haringey	212 300 (187 300)	49[a] (36.2)	4 333 (5 174)
Between 5000 and 10 000			
16 (11) Coventry	302 500 (292 500)	48 (48)	6 302 (6 094)
17 (12) Southwark	228 800 (196 500)	30 (29.9)	7 627 (6 572)
18 (23) Islington	175 200 (155 200)	20[a] (2.5)	8 760 (62 080)
Between 10 000 and 50 000			
19 (21) Oxford	132 800 (109 000)	13 (2.2)	10 215 (49 545)
20 (15) Southampton	211 700 (194 400)	14 (14)	15 121 (13 886)
21 (16) Liverpool	474 000 (448 300)	21 (21)	22 571 (21 348)
22 (18) Derby	230 500 (214 000)	9 (9.3)	25 611 (23 011)
23 (19) Birmingham	1 008 400 (934 900)	39 (39.5)	25 856 (23 668)
24 (20) Newcastle upon Tyne	283 600 (263 000)	8 (8)	35 450 (32 875)
Between 50 000 and 100 000			
25 (25) Camden	182 500 (170 500)	2[b] (1)	91 250 (170 500)

Notes: [a] One 16 ha LNR is shared between Haringey and Islington and the 16 ha are included in both sets of figures. [b]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.

Sources: 1. Box & Harrison (1993). 2. OPCS Monitor PPI 96/1, 29 February 1996 (quoted in *Whitakers Almanack*, 1997). 3. English Nature Conservation Services Team, 31 March 1997.

Management Plans

The NPAC 1949 states clearly that nature reserves need to be managed (Section 15, NPAC 1949). Despite being fundamental to LNRs, there are no agreed standards for the management of these sites. Ideally, there are four distinct elements to a management plan:

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

Table 5. Changes between 1993 and 1997 in the numbers of urban local authorities out of the sample of 25 who have provided LNRs in each of various categories of population and area

People per ha of LNR	Box & Harrison (1993)	1997
Less than 1000	2	4
Between 1000 and 5000	7	11
Between 5000 and 10 000	5	3
Between 10 000 and 50 000	7	6
Between 50 000 and 100 000	2	1
Greater than 100 000	2	0

If these separate elements become entangled, a Management Plan can easily become unwieldy and is then ignored because of its size and complexity (English Nature, 1994).

The short *policy statement* sets down why the LNR is being declared, its purpose, its local significance, the main aims or objectives, how these are to be attained and, in general terms, who will do what. This will be the basis for any plan used to bid for resources. Clear aims or objectives for the LNR need to be set together with the operational prescriptions for achieving them.

A *costed three-year work plan* provides full details for the first year, with the second and third years in outline. This 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. Flexibility will be required to adjust these aims in line with new information about the nature conservation resources of 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 may include species records, results of research, interpretative information, environmental data, site user surveys and other social science surveys, and records of educational visits. These data will be used to adjust the policy statement and work plan. However, the site database should be kept distinct from either document.

The nature conservation agencies should encourage local authorities to prepare draft policy statements and work plans at the outset and, ideally, include them with other documents when carrying out formal consultation. Without them it is difficult to be constructive in consultation; for local people to know what is intended; for management to be consistent; or for committees of the local authority to see how local authority resources are being used, the reasons for giving continued support and the likely scale of that support.

Management Advisory Groups

Individual LNRs vary greatly and the usefulness and composition of Management Advisory Groups will vary correspondingly. Groups are frequently in-

volved in the pre-declaration stages, steering the proposal through any public consultation and committee stages. These may metamorphose into groups which are a means of bringing experts in a variety of disciplines and the views of a range of organizations to bear on management planning, management activities and monitoring (Box, 1991a). Some urban and urban fringe LNRs contain areas of what may be called truly urban habitats with new plant and animal associations or modifications to recognized communities. Others hold remnants of rural habitats being modified by urban pressures. The need for informed advice is great because the accepted wisdom of nature conservation in rural areas does not always fit the urban situation (Barker, 1995).

Management Advisory Groups can also be a conduit for information and opinions between interested organizations, site users, local residents and the local authority as well as being a valuable element in Local Agenda 21 work. This is made more effective and meaningful if local communities and interest groups are adequately represented on these groups. Setting up and running such groups can be hard work but they are in line with current trends towards local empowerment and ownership. The groups should be guided by the aspirations and restrictions implicit in the NPAC 1949.

In addition there may be groupings such as Friends of ... LNR, voluntary warden teams, and people interested in recording the occurrence and distribution of species on the site. On at least one LNR, Lewes Railway Land LNR (Lewes District Council, East Sussex), a Junior Management Board has been set up which is drawn from the local primary and secondary schools which use the site. In view of the use made by schools of many LNRs, this example is worth further study and wider consideration.

Other users could be encouraged to come together to pass comments and advice to site managers and mechanisms for canvassing their views should be established.

Funding

Most LNRs depend entirely on local authority money, though not necessarily from any one department alone (Smyth, 1990). The nature conservation agencies have no national grants schemes dedicated to LNRs, although schemes aimed at elements of initial management planning would be a very effective way of promoting LNRs and ensuring their effective management. Discretionary grants for capital projects are available for local authorities from English Nature and Scottish Natural Heritage, but local authorities usually have most difficulty with revenue funding. These difficulties reflect the relatively low priority given to environmental projects and the fact that exercise of their powers under Section 21 of the 1949 Act is optional. Local authorities in Wales who give LNRs a high priority in their Countryside Strategy may get grant aid for site management as part of the support given to the Strategy by the Countryside Council for Wales.

Several LNRs have become established through the provision and management of land in the public interest associated with the granting of a planning permission, e.g. Hills and Holes LNR and The Scrub Field LNR (Northampton Borough Council). In a few cases, other organizations 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). Sponsorship for LNRs from industry and business can be extremely useful but is usually confined to one-off projects. Landfill Tax could become another source of funding for LNRs.

European grants and National Lottery grants could be used to fund major national programmes of LNR development. Large-scale funding involving the nature conservation agencies, the local authorities and the Wildlife Trusts might be used to establish adequate databases, inter-reserve networking and links to the Internet as well as enhancing the management and interpretation of these sites.

The key factor in the success of most urban and urban fringe LNRs is good site-based staff. Staff are, unfortunately, quite expensive and need revenue funds. The Wild Life Conservation Special Committee (1947) remarks that while site acquisition will not often call for heavy capital expenditure "staffing and maintenance will entail recurrent charges, which might easily discourage effective action for fear of too heavy a charge falling on local resources. We therefore recommend that an appropriate system of grant-aid should be instituted." This recommendation was not approved at the time but should now be revisited if LNRs are to be major players in national programmes of biodiversity and nature conservation.

A higher priority needs to be given by local authorities to LNRs than most have done in the past. These 'natural parks' are usually lean on resources, helpful to education, enjoyed and supported by local people, and protect locally valuable natural assets. The benefits of LNRs usually outweigh the costs and, particularly if partnership funding is achieved, local authorities get a very good bargain (Smyth, 1990). Recent calls for better funding for Biodiversity Action Plans and for Local Agenda 21 and for improvements in environmental education (CPRE/Green Alliance, 1997) reinforce the need to adjust priorities and present opportunities for LNRs to play a more prominent role in reaching their goals.

Networking

Clearly there are benefits in site managers being in contact with one another. To set up systems which allow this day-to-day using modern information technology would not be too hard, although quite expensive. Within local authorities there may already be networks which could be modified to allow this. This is one area which the local government associations and Association of Local Government Ecologists might explore. There would be merit too in encouraging links between LNR managers and National Nature Reserve managers. Regional workshops might be a practical way of going about doing this with participants visiting sites and discussing issues affecting them.

As part of the UK-MAB accreditation scheme which includes good LNRs, the Urban Forum is looking at how the Internet can be used to let people have ready access to a large amount of data about individual sites, including species lists, site maps, pictures of key species and habitats, and management information.

Currently the nature conservation agencies hold databases of LNRs which are fairly simple. Given the increasing numbers of LNRs, more elaborate systems are required in order to answer the questions posed by local authorities and the public. The local government associations, the Association of Local Government

Ecologists, and the nature conservation agencies should consider the need for a readily accessible national system. The longer this is delayed, the more difficult and costly the task will become.

Northern Ireland

The situation in Northern Ireland is significantly different to that in Great Britain, although a good deal of the above points are relevant. District councils were only given powers to provide nature reserves in 1985 under Section 22 of the Nature Conservation and Amenity Lands (NI) Order. Since that time only three LNRs have been declared with two more in an advanced stage of preparation.

In Northern Ireland, it is the Amenity Lands Act 1965 that defines a nature reserve. In conjunction with the 1985 Order, this Act gives powers and definitions very similar to those applying in Great Britain. An interesting variation is inclusion in the Act of the words 'in the public interest' when defining the purposes of the management of a nature reserve. Such wording, in conjunction with the powers granted in 1985, could be used creatively in and around Belfast and the other built-up areas (two of the three LNRs in Northern Ireland are in Belfast).

The Northern Ireland Environment Link report *Environmental Strategy for Northern Ireland* (Christie, 1996) mentions LNRs, almost in passing, as one way to give protection to sites which fall below the standards for national designation. They are not referred to as potential resources in environmental education or in connection with urban open space, tourism, recreation or leisure. Thinking may swing in Northern Ireland, as it has done elsewhere, towards seeing urban and post-industrial habitats as legitimate candidates for declaration, including ones created deliberately in the course of urban regeneration or derelict land reclamation.

Discussion

LNRs can make a significant contribution to international projects, such as the Biodiversity Convention, through national projects such as the UK Biodiversity Action Plan (UK Government 1994). 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 are helping to achieve targets for accessible natural greenspace which can be used as monitors of sustainability (see Table 4).

It is evident that LNRs can be used to help deliver targets derived from the Biodiversity Convention and from Local Agenda 21 such as the provision of accessible natural greenspace. The purposes for nature reserves suggested in the NPAC 1949 focus on education, research and preservation of natural features. There are, however, additional roles for LNRs in community development which need to be addressed. These can centre on the values which natural landscapes have for the local quality of life as the Wild Life Conservation Special Committee (1947) implied in its comments on nature reserves being places where people can enjoy the peaceful contemplation of nature. LNRs provide opportunities for people to contribute to global issues at a local, human scale. 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 time is right now to revisit the NPAC 1949 legislation in the light of the thinking of the Wild Life Conservation Special Committee and in the context of Earth Summit deliberations.

The potential LNRs have to contribute towards Local Agenda 21 is substantial. Not only can local people express their views about how LNRs may best contribute to improving their quality of life, but they can also get involved directly in projects which make clear contributions to global programmes of environmental conservation and biodiversity. A major value of LNRs is in showing people that nature conservation is relevant to their everyday life and can benefit them directly (Barker, 1995). All LNRs should have good on-site interpretation and a minimum, at least, of more traditional leaflets aimed to interest and inform the public about them and to help schools to use them constructively. These leaflets should go to all local schools annually and be available in local libraries, museums, reserve/park centres and so on.

At site level, individual local authorities are the key actors. LNRs are declared and managed under powers which are their sole province. A local authority can decide whether and how to use its powers—or whether not to use these powers. The lead department varies from local authority to local authority with planning often being the key department. Education departments have a potentially valuable role which is not realized as often as it should be given that LNRs are extensively used by schools.

Potentially, the local government associations have a very important role in giving strategic guidance, encouraging high standards, ensuring sensible and useful model bye-laws, and promoting networking among LNR managers.

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 organizations and are in a position to influence the policies and actions of these in relation to LNRs.

The statutory nature conservation agencies already exert a considerable influence in their role as statutory consultees. They provide guidance on site selection criteria and the evaluation of the nature conservation resource, and will continue to play an important role in advising on site management and management planning. Except in Wales, where grants are linked to approved Countryside Strategies, they can give discretionary grants, usually for capital projects. 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 organizations 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 organizations manage several LNRs on behalf of the local authority. The British Trust for Conservation Volunteers has traditionally played a strong part in site management usually, but not necessarily, as a contractor to the site manager in carrying out estate management tasks.

Business, industry, charitable trusts and similar bodies are seen usually as sources of help in kind or of help in the form of grants or gifts of money. They

may, however, be involved in other ways too, e.g. 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. Forbo-CP has supported the declaration of 7 ha of woodland and grassland which they own in Cramlington, north of Newcastle upon Tyne, as Bassington LNR.

Local communities are rarely involved in LNRs to the extent that they could be. However, in many cases local residents—as opposed to local conservation organizations—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.

Given all these positive benefits, it is a puzzle to know why the powers provided by the NPAC 1949 are not used more widely in respect of LNRs. A major weakness of LNRs is the lack of knowledge about them amongst both the public and the professionals involved in local authorities and nature conservation bodies. The definition of a nature reserve in the NPAC 1949, coupled with its subsequent interpretation along scientific lines, was not attractive to many local authorities who did not see themselves as champions of nature conservation. The interest and involvement of local authorities in LNRs has only grown substantially since the social benefits of wildlife and nature conservation have begun to be recognized. In many respects, the Wild Life Conservation Special Committee (1947) was ahead of its time. Its holistic approach to nature conservation and the potential of nature reserves for bringing wider benefits to society was lost in the subsequent legislation. The thinking generated by the Earth Summit in 1992 not only points to the wisdom of a report written 50 years ago but independently underlines the potential which LNRs have for addressing the current needs and aspirations of society.

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References

Barker, G. (1995) Urban local nature reserves in England, in: I. Kowarik, U. Starfinger & L. Trepl (Eds) *Dynamik und Konstanz: Festschrift für Herbert Sukopp*, Schriftenreihe für Vegetationskunde Heft 27 (Bonn-Bad Godesberg, Bundesamt für Naturschutz).

Barker, G. (1997) A framework for the future: green networks with multiple uses in and around towns and cities, *English Nature Research Report No. 256* (Peterborough, English Nature).

Box, J. (1991a) Local nature reserves: nature conservation and public enjoyment, *The Planner*, 77(25), pp. 5–7.

Box, J. (1991b) Forty years of local nature reserves, *Ecos*, 12(3), pp. 40–43.

Box, J. & Harrison, C. (1993) Natural spaces in urban places, *Town & Country Planning*, 62, pp. 231–235.

Christie, S. (Ed) (1996) *Environmental Strategy for Northern Ireland* (Belfast, Northern Ireland Environment Link).

Council for the Preservation of Rural England/Green Alliance (1997) *Have We Put Our Own House in Order? The UK's Responsibilities to Earth Summit II* (London, CPRE/Green Alliance).

Countryside Council for Wales (1996) *Acting Locally on Behalf of the Environment: the Role of Local Nature Reserves* (Bangor, Countryside Council for Wales).

Eggo, N. (1990) SSSIs in urban areas in England, unpublished report (Peterborough, Nature Conservancy Council).

English Nature (1991) *Local Nature Reserves in England*, revised 1995 (Peterborough, English Nature).

English Nature (1992) *Nature is Your Neighbour: Local Nature Reserves for Local People* (Peterborough, English Nature).

English Nature (1994) *Managing Local Nature Reserves* (Peterborough, English Nature).

English Nature (1996) *A Space for Nature: Nature is Good for You* (Peterborough, English Nature).

Harrison, C., Burgess, J., Millward, A. & Dawe, G. (1995) Accessible natural greenspace in towns and cities: a review of appropriate size and distance criteria, *English Nature Research Report No. 153* (Peterborough, English Nature).

Larwood, J. (1997) *Windows in Time: Earth heritage and Local Nature Reserves* (Peterborough, English Nature).

Rohde, C.L.E. & Kendle, A.D. (1994) Human well-being, natural landscapes and wildlife in urban areas: a review, *English Nature Science No. 22* (Peterborough, English Nature).

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

UK Government (1994) *Biodiversity: The UK Action Plan*, Cmd 2428 (London, HMSO).

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