COUNTRYSIDE RECREATION Network News

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Exchanging and Spreading Information to develop best Policy and Practice in Countryside Recreation

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Cover photo: Woodland theatre; see page 4

CRN is a UK-wide network.
The Network provides a link between all those who are involved with recreation in the countryside; from policy makers to countryside managers.
The Network helps the work of agencies and individuals by:

1. identifying and helping to meet the needs of CRN members for advice, information and research;

2. promoting co-operation between member agencies in formulating and executing research on countryside and related recreation issues;

3. encouraging and assisting the dissemination of the results of countryside research and best practice on the ground.

COUNTRYSIDE
RECREATION
NETWORK

CRN News is produced three times a year and welcomes submissions of articles and letters from all its readers. The deadline for items for the February 1995 edition is 13th January.

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Comment

Richard Broadhurst
Chairman CRN

Thank you Robert Wood, for your unswerving support since the very earliest days of CRN.

Robert, until recently the Network Manager, joined CRN what seems like an age ago. In fact it was barely 18 months ago that Robert took up his post, operating out of the Department of City and Regional Planning, University of Wales College of Cardiff. In that time Robert achieved a great deal, and CRN has been able to take enormous strides, not least in the development and introduction of CRN News. Robert is the kind of person who is very used to taking long strides, as anyone who has accompanied him on an early morning run will know. I have written personally to Robert to thank him for all that he has done, but it is right that we should record our thanks publicly. Robert is now studying towards his PhD at Manchester University, and our best wishes go with him.

Catherine Etchell is the brave individual who has taken over from Robert. Having worked in Local Government, looking after an innovative countryside management project, Catherine is well placed to appreciate the issues we face. A first degree in Maths, a Masters degree in Landscape Design and interests in mountaineering and the arts, provide Catherine with a very useful range of skills and interests to apply in this job. Catherine's interest in plain, honest hard work has already been put to the test. For a brief spell, Catherine and Robert worked together in the lead up to this year's Conference - "Communities and their Countryside" - which proved to be a great success. The standard of papers and debate was very high, as the report will show. Work is progressing well on the preparation of this report which should be published before the end of the year. Be sure to order your copy.

This year, Conference goers were given the option of a pre-Conference tour of community initiatives in areas of Forestry Commission woodland in Forest Enterprise's Sherwood and Lincolnshire Forest District. Between the pre-Conference tour, the plenary sessions and workshops,Conference delegates were exposed to examples of community initiatives which spanned the length and breadth of the country, and covered a wide range of interests. This pooled and shared experience is bound to stimulate agencies, organisations and individuals into more action, and CRN News will carry details of some of these projects in issues to come.

We are now working on some exciting plans for 1995. The February issue of CRN News will carry details of the year's plan and programme. This looks certain to include workshops on Funding and Europe, Arts in the Countryside and Recent Advances in Countryside Management. To keep abreast of developments, be sure you return your subscription form to continue receiving the newsletter. The February CRN News will carry a number of articles on the theme of Arts in the Countryside which will serve to introduce the network to the scope of arts' projects in the countryside before a spring workshop. If you have interesting experiences to share with the network, contact Catherine.

This current issue of CRN News focuses on Geographical Information Systems. Our new found ability to assemble, arrange and rearrange large and different sets of information across special models of the countryside, opens the door into a very large room. We may be some way off the interactive television system being developed by Time Warner in Orlando, but we can yet wonder at the potential to be exploited. It is the almost incredible speed with which computers can deal with large amounts of information, combined with the ease of communicating with visual images, pictures and maps which renders GIS so powerful. The best way to investigate GIS is of course to see it or try it in operation. Contact a few people and see how they work their system. In the space available in this newsletter all we can do is to flag up a handful of the interesting projects underway, but hopefully enough to kindle your interest. Enjoy your CRN News and remember to return your subscription to Catherine •

Charcoal burning as a profitable concern was one example of community enterprise looked at during the Conference

All went well....."TOUCHWOOD"!

Fiona Simpson, Forest Enterprise

Theatre and music introduce children to the forest

Using music, myth and magic the forest came alive this summer! Aimed primarily at the 7-12 age group, "Touchwood" is the enchanting story of the living forest, a place where plants, spirits, animals and people work together to maintain the forest environment. "Touchwood" is a new piece of entertaining and educational theatre; a touring production designed to introduce young people to forestry. It toured 14 English and Welsh woodlands during June and July.

The central character is Touchwood himself: the witty Green Man of ancient woodlands, he is a good woodland spirit. His supernatural counterpart is Maia, the more magical and often invisible hawthorn tree sprite. Together with the help of the forest dwellers (animals and humans), and the brute strength of "Packa Wallop" (a harvesting machine), they face up to Grendel, the Hound from Hell, who has slept beneath the forest floor for a thousand years. Children are directly involved with the action on stage; they play the parts of animals and make and wear their own masks.

The writing of the play was commissioned by Forest Enterprise and the Eastern Arts Board. The 64 perfomances were in celebration of the Commission's 75th anniversary, and promote its policy of multi -purpose forestry.

The play was produced by Norwich -based theatre company Tiebreak, founded in 1981. They have developed an international reputation for using music and drama to produce theatre for young people in schools, theatres and museums.

The musical drama brought in the crowds and has received enthusiastic feedback. "Touchwood" is going on tour in 1995. If you would be interested in hosting the play or would like further information, please contact:

Tiebreak Touring Theatre
George White Middle School
Silver Road
Norwich NR3 4RG Tel: 0603 426374

Geographical Information Systems– an introduction

Dr Gary Higgs,
Lecturer in GIS, Department of City and Regional Planning,
University of Wales, Cardiff

WHAT ARE THE ADVANTAGES OF GIS APPROACHES IN ENVIRONMENTAL STUDIES ?

Geographical Information Systems (GIS) are increasingly being used in a variety of environmental studies. For example, in environmental auditing, environmental impact assessment and more complex modelling investigations.

GIS gives us the ability to *integrate* data from several different sources which can then be stored and manipulated.These sources include maps, text, aerial photographs and remote satellites. The data can then be analysed, overlaid and generated in a variety of forms. Thus a great deal of investment has been made in using such systems for the storage of both digital cartographic information and associated databases of attribute information for map features. The ability to manipulate digital map and attribute data simultaneously has highlighted the limitations of many of the key data sets held by environmental agencies in the United Kingdom. It has illustrated the need for data standards and compatibility prior to the implementation of GIS projects.

GIS provides a technology whereby a great deal of the technical problems of data integration can be overcome. Advantages are evident in terms of the avoidance of duplication, the shared costs of data conversion and improved access to information. In addition it encourages agencies to treat data as an important and valuable resource often collected, stored and updated at great cost.

The success of a GIS project is dependent on the identification of a range of management operations to be addressed in a potential system, the availability of data in a suitable format and the will of the participating agencies to release such data in as unaggregated a form as possible as well as a whole host of hardware and software factors.

The advantages of a GIS approach can be illustrated with reference to the Rural Wales Terrestrial Database (WALTER) Project. This project, completed in 1991, was co-funded by the Welsh Office, the Agricultural Development and Advisory Service, the Countryside Commission in Wales, the Forestry Commission, the Nature Conservancy Council and the Welsh Water Authority. It examined the proposition that their separate and collective performance could be extended and improved if existing data sets used within their separate organisations were brought together on a consistent basis. The existing data sets were those used for the planning, management, development and conservation of land and water in rural Wales. To be brought together on a consistent basis involved being made mutually compatible in computerised form with a capacity for continuous updating interrogation and output in various modes of presentation. This study carried out by the Wales and South West Regional Research Laboratory based in the University of Wales, highlighted, through a number of case studies for a pilot area in mid Wales, how collaborative approaches to data handling within a GIS environment can have proven and demonstrable benefits to the organisations concerned. The study illustrated methods by which GIS can be used for practical day-to-day management tasks. It demonstrated techniques whereby information integrated into a GIS from a variety of different sources and at a range of scales, can be combined to produce new information and so extend the scope of analyses in rural planning.

The following pages give a snapshot of ways in which GIS is currently being applied to recreation in the countryside. Various applications of GIS are described in a wide variety of situations and locations around the UK.

The Countryside Information System

Andrew Stott
Research Branch
Wildlife and Countryside Directorate of the DOE

INTRODUCTION

The information explosion is a cliché, but it is also a reality. Technology seems to have leapt ahead of our ability to understand and use the information which it provides. This is certainly true of Geographical Information Systems in which immense amounts of data can be displayed and transformed at the simplest touch of the button - but does it mean anything to the end user? This is the question which we started with in the design of the Countryside Information System (or CIS).

The design process

We found that people using strategic information about the countryside often asked four types of question:

- where do particular features or combinations of features occur? (eg. where are the suburban areas which have a low density of woodland?)
- how much of a feature is there in a given area and how is it changing? (eg. how many hedges are there in England and is the rate of loss declining?)
- what would happen to a given area if some policy or activity was changed? (eg. what would happen to the extent and botanical quality of moorland in Wales if an extensification scheme was introduced?).
- how accurate and reliable is the information on a particular topic? (eg. which figures on the loss of rural land to urban development should be believed?).

Countryside Information System
Length of hedges in England (excl. urban areas)

Hedges (Sample)

Description	% Data Cover	(km/sq km rural land) Mean	Std Error	(km on rural land) Total	Std Error
Hedge	100.00	1.21	0.0272	152000	3420
Hedge/fence	100.00	1.12	0.0264	141000	3330
Hedge/bank	100.00	0.27	0.0150	33900	1880
Hedge/wall	100.00	0.02	0.0045	2420	561
Hedge/fence/bank	100.00	0.32	0.0155	40700	1950
Hedge/wall/bank	100.00	0.00	Not Available	0	Not Available
Hedge/wall/bank/fen	100.00	0.00	Not Available	50	Not Available
Hedge/wall/fence	100.00	0.02	0.0036	2520	454

Definition of Rural Land
Countryside Survey results have been applied to all land in the current region except the urban areas of squares with more than 75% urban cover. The rural parts of these 'urban squares' were not surveyed either, but the results have been applied to this 'unclassified urban fringe' on the assumption that its content is probably similar to the content of the rural squares. Relative proportions are given below:

Description	Area (ha)	Area (%)
Urban Land excluded	0	0.00
Non-Urban Land (Urban Fringe)	0	0.00
Total Urban square land	0	0.00

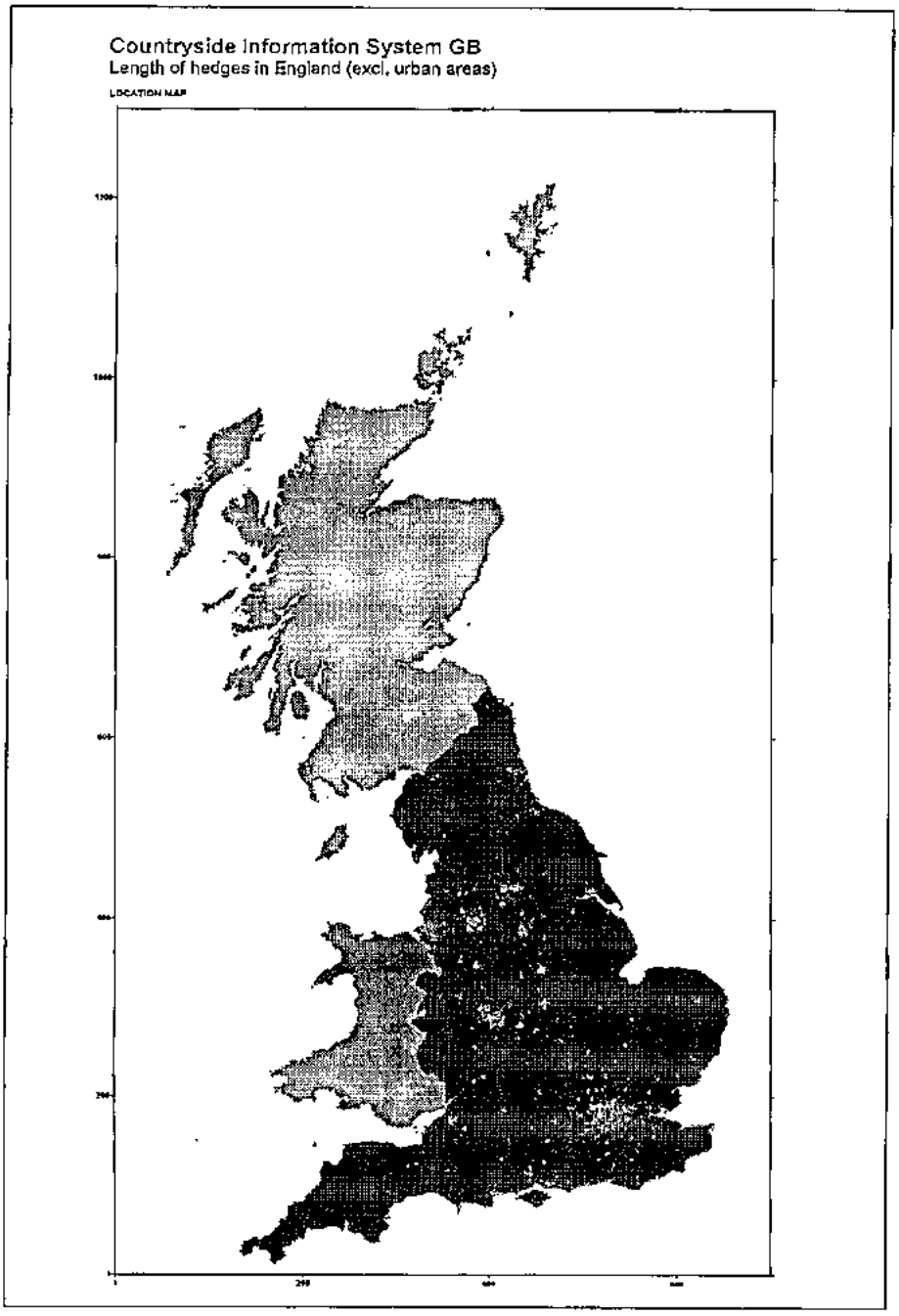
We also found that people asking such questions were never satisfied with the answers. They always wanted to see what would happen if the question was changed a bit or to ask another follow-up question. All of this, of course, was required on the Director's or Minister's desk that afternoon. What better, therefore, than to design an information system that they could use and understand themselves?

We needed an information system that could deal efficiently with national sample-based datasets such as Countryside Survey 1990 and census-based datasets such as Ordnance Survey topographic data. We needed an information system able to deal with information about accuracy and provide explanations of definitions used. And we needed an information system capable of being used by non-specialists, alongside standard office software and computing equipment.

The result is the Countryside Information System.

What does CIS do?

The CIS is a computer programme which runs in a Microsoft Windows operating environment on a standard 486 personal computer. CIS stores, analyses and presents data for each one kilometre square of the National Grid in Great Britain. A version has also been developed for Northern Ireland. Data can be extracted and presented in tables or charts for any part of Britain - a region, county or National Park, for example. Users can easily define their own areas of interest using a 'paint brush' technique. Data can be presented as distributions on maps. Areas which satisfy specific criteria can be selected and overlay maps produced.



CIS is designed to hold two sorts of data:

(i) **census data** which are available for each kilometre square in the country; and

(ii) **sample data** which are referenced to the Institute of Terrestrial Ecology's (ITE) Land Classification of Britain.

Census data includes information from maps, such as roads, altitude, designated areas and satellite surveys of land cover. Sample data includes the results of Countryside Survey 1990 which document the changes in the ecological characteristics of the British countryside between 1978, 1984 and 1990. Users can add their own data sets to CIS.

CIS contains a number of other features to help users to understand the data at their finger tips. There are extensive help facilities which describe the characteristics, sources and limitations of all the data sets. Standard errors are given for estimates based on sample surveys and warnings are automatically given if a sample is too small to provide a reliable estimate. For users who wish to assess information from different surveys of land use there is a facility for comparing the definitions used. Standard data tables and reference information from other sources can be included for reference.

All of these facilities are provided with a user-friendly interface typical of Windows applications. Data and high quality maps can easily be 'copied and pasted' from CIS into documents, spreadsheets, graphics or desk top publishing packages.

Countryside Information System

Suburban areas with low woodland cover in the NW

all land cover - ITE satellite (Census)

Description	Density ha/sq km	% Data Cover	Total ha	Min Val	Max Val
urban	12.78	100.0	12434.3	0.00	96.56
suburban	37.91	100.0	36886.1	0.00	97.88
tilled land	16.34	100.0	15895.0	0.00	100.00
managed grassland	23.48	100.0	22848.4	0.00	99.88
rough grass	0.35	100.0	344.1	0.00	73.63
bracken	0.04	100.0	41.5	0.00	90.56
heath grass	3.44	100.0	3346.7	0.00	100.00
open shrub heath	0.40	100.0	391.8	0.00	99.88
dense shrub heath	0.07	100.0	65.9	0.00	99.13
bog	0.05	100.0	45.5	0.00	89.69
deciduous woodland	0.34	100.0	327.7	0.00	97.81
coniferous woodland	0.02	100.0	21.0	0.00	100.00
inland bare	0.94	100.0	915.7	0.00	99.19
saltmarsh	0.22	100.0	216.7	0.00	98.44
coastal bare	1.87	100.0	1818.3	0.00	100.00
inland water	0.41	100.0	399.7	0.00	100.00
sea/estuary	0.96	100.0	933.7	0.00	99.94
unclassified	0.38	100.0	372.6	-0.06	100.00

Availability of CIS and future development

CIS will be available as a commercial product by the end of 1994. CIS will be marketed by the Natural Environment Research Council (NERC) under an agreement with the DOE. The DOE hopes that CIS will be seen by many peopl as a useful tool in strategic planning, policy analysis and research. CIS provides a versatile platform for the communication and publication of environmental information. The scale of data used, one kilometre square, is sufficiently detailed for many national and regional applications and yet it may be coarse enough to allow data suppliers to provide summary information without threats to commercial interests, intellectual property rights or confidentiality. These issues are currently the subject of a CIS Data Management Project funded by the DOE.

The DOE will be encouraging data suppliers to make available and to market data sets in CIS format. We are currently investigating the supply of a wide range of data sets including; topographic data; agricultural data; population census data; climatic data; soils data; species distributions; breeding bird atlas data; designated and administrative areas; and river catchment areas. All the information about data available for use in CIS is provided in an 'environmental catalogue'.

It has taken several years to take CIS from the drawing board into the commercial world of IT products. In that time the technology has moved on, the policy focus has shifted and the volume of digital data has mushroomed. We now need to reflect on what has been achieved and to look ahead to what will be needed in the future.

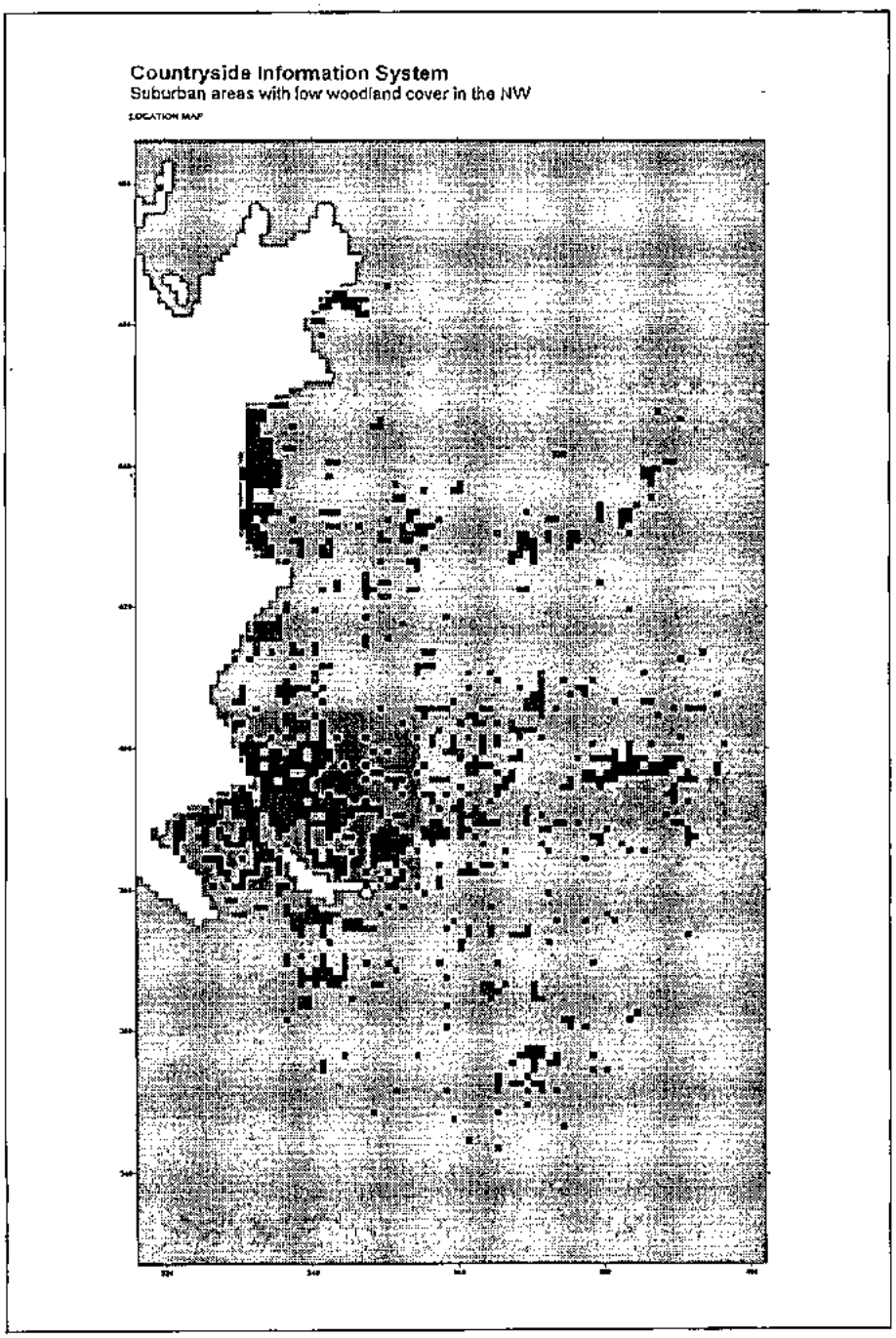
CIS has been developed under contract to the DOE by the Institute of Terrestrial Ecology, Dari Computing and Nottingham University. The data held in CIS is jointly owned by DOE and the Natural Environment Research Council. The CIS Data Management contract has been let to WS Atkins.

If you would like more details about CIS please contact:

- Yvonne Parkes, Environmental Software Unit, Centre for Ecology and Hydrology, Maclean Building, Crowmarsh Gifford, Wallingford, OX10 8BB (Tel.0491 838800).

If you have some data which you would like to make available (or sell!) through CIS please contact:

- Peter Ireland, WS Atkins, Wellbrook Court, Girton Rd, Cambridge, CB3 0NA.



If you have ideas about the future development of CIS please contact:

- Andrew Stott,
  Wildlife and Countryside
  Directorate, Tollgate House,
  Houlton St, Bristol
  BS2 9DJ.

A report on the 'Development of the **Countryside Information System**' (Howard et al 1994) is available from the DOE Publication Sales Unit,
Government Buildings,
Lime Grove, Eastcote,
HA4 8SE.
Price £10.00 incl. p&p
(subject to confirmation).

Managing Urban Environments

Falkirk College Of Technology, ideally situated in the Central Belt of Scotland, has developed a unique Higher National Diploma in Managing Urban Environments. The course, which runs from September, is based upon 3 main areas of study: managing wildlife in urban areas; knowing how the urban environment is controlled and manipulated; and working with people.

The course aims to produce graduates who are capable environmental managers with skills ranging from urban ecology to urban planning, from working with local community groups to financial management. A wide knowledge base is established over the 2 year course, which also includes 20 weeks of practical work experience.

The Environmental and Land-Based section of the College has spent 2 years researching, developing planning and verifying this new provision and from our market research have received very positive feedback because of the unique range of skills the programme provides.

The environmental section has often been criticised for its tradition of drawing upon academic rather than on vocational education. Falkirk College of Technology have now designed a course which redresses the balance, providing students with relevant skills and knowledge to "manage urban environments".

Further details and information are available from:
Adrian Kitchen,
Course Co-ordinator,
Environmental 'Studies Section,
Falkirk College of Technology,
Grangemouth Road, FALKIRK
FK2 9AD
Tel: 0324 624981 ext468

GIS and the management of rights of way

Karen Tharp
Nottinghamshire County Council

Introduction

Over the last 3 years I have been involved in developing a GIS or Geographic Information System for Rights of Way work for Nottinghamhire County Council; together with my long suffering colleague Julian Walters, a Systems Analyst responsible for interpreting my ideas into computer code.

The access network

Development has first focused on getting the network "legally defined", in order that an accurate, up-to-date revised Definitive Map can be produced. Those of you familiar with the Countryside Commission's Milestones approach to getting the Rights of Way network open and available for use by the year 2000 will know that this is the first target of three -

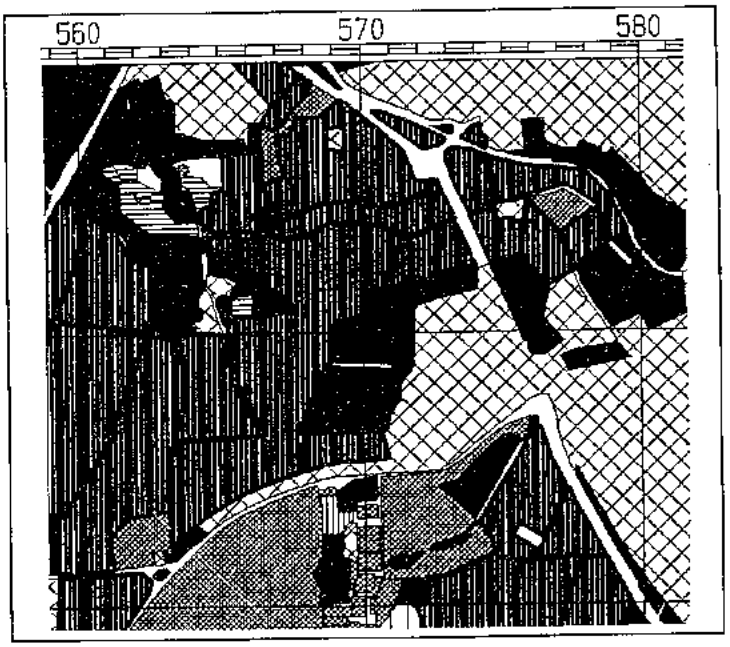
- Legally defined
- Properly maintained
- Well publicised

One of the most important functions of the GIS in helping to achieve the first target is that it allows for several stages of map to be held at once.

The current lines of Rights of Way can be displayed against the former position prior to diversion, and any current diversion proposals which are in the middle of the legal process can also be displayed, enabling very accurate land searches to be carried out.

We will soon begin the task of producing our County's first series of Legal Event Modification orders using the GIS to produce both the maps and text. This task of verifying the positions of all diverted, extinguished and created paths in Nottinghamshire over the last 35 years is one which although at first appears a purely retrospective exercise, becomes a useful opportunity to identify outstanding map errors requiring further work. The GIS allows the Definition Section to supply the rest of the team with both a visual and written record of errors discovered which might affect maintenance work, giving them the chance to inform landowners.

The ultimate goal in map production from the GIS is to issue a Definitive Map on a new map base of 1:10,000 scale and to keep this under continuous review. Breaking this into achievable tasks and explaining to the Computing Division exactly **why** we couldn't show RUPP's (Road Use as a Public Path) **now** when we could before and **why** a diversion order couldn't really be drawn on the map until we made a further order to put it on has been both an interesting and frustrating exercise!



Landuse classification

We are now working on integrating **maintenance** information which will allow us to produce reports, issue works instructions and plan future projects such as the Parish Paths Project.

The system will continue to increase in value to the Team the longer we have it and the more information it contains. Increased awareness and quicker access to information about the network will help us to protect it, especially if that information can be made directly available to other people in the Planning Department.

Countryside appraisal

A long term project to analyse the County's landuse and identify mature landscape areas was the next development carried out using the GIS. At first a method of ensuring the accurate reproduction of the information to planning authorities and interested groups, the Land Use System provided statistical analysis of the County's different habitats.

Initial surveys carried out using aerial photography and ground surveying were put onto paper maps using complex colour coding systems to categorise the landscape. This data has been put into the GIS as coded polygons, and after checking, colour plots at varying scales are produced, tailored to suit specific geographic areas as required.

The flexibility of the GIS means that subsequent verification surveys will enable the information to be kept up to date within pre-defined tolerances.

The Forestry and Land Management Team are also in the process of specifying the work which they would like to hold on GIS.

Eventually we hope that the effective use of the access, landuse and forestry information held on GIS will provide not only a central source for land search enquiries but will

Landuse classification key

contribute to the decision making and planning of local enterprise such as the Greenwood Community Forest.

Technical details

For those who want to know the nitty-gritty, we use a GIS package called data MAP for DOS from a company called SIA based in London, which we have a development licence for, enabling us to tinker with the programs until they suit us. This enables us to hold data against either vector or rasta background maps. Currently the Rights of Way system uses 1:10,000 rasta maps which we scanned ourselves (prior to the OS offering scanned maps.) These are currently 200 dpi (dots per inch). We are hoping to transfer to the OS versions because these are 400 dpi, or 4 times the quality. The landuse system uses 1:25,000 rasta maps. We can also display our information against 1:1250 and 1:2500 vector maps supplied by the OS, and plot and print extracts from them.

We use 386 and 486 IBM PC's running from a fileserver on a local area network. All the PC's have maths co-processors to allow them to do the number crunching required to process maps.

The data is input as a series of points on the screen drawn on with a mouse which connect to form either the lines of paths, or the polygons of field boundaries.

The text entries are saved to a D-base database, and are accessible both through the maps by menu options, and as a separate text-only field for report writing and updating.

Vector and rasta images can be produced at any scale from any size paper using HP compatible devices eg HP laser for A4 plots or a Precision Image colour plotter for up to A0 size.

Legal restrictions

One of the most recent outcomes of local authority interest in using GIS for access work has been the working party organised by the Local Government Management Board to look at GIS and Rights of Way. This membership was comprised of DoE, Countryside Commission and Local Authority representatives, and the intention is to eventually produce a draft British Standard for GIS used for Rights of Way work.

A Definitive Map and Statement produced by GIS are subject to the same legal restriction and conditions that a manually produced map and statement are. The main difficulty you will come across if you become involved in GIS is not the technical problems found when specifying line styles and tolerances for accuracy, but in conveying these legal restrictions to your colleagues in the Computing Department.

With sensitivity and tact you may be able to arrive at a mutually acceptable solution with the minimum of argument, papers thrown into the air and slammed doors. Alternatively, you could find yourself with a system designed for road engineers which is unusable for rights of way work, or resigned to pen and ink for a while longer!•

How GIS is used in National Parks

Dr Alan Fishwick and John Clayson.
The Lake District National Park Authority

In 1991 the Countryside Commission published the results of a study of landscape changes in the National Parks (Countryside Commission 1991). The work, sponsored by the Commission and the individual parks, was undertaken by Silsoe College and provided the first comprehensive information about land cover and landscape features within the parks. Data collection was based on aerial photo interpretation. Comparisons were drawn between the early to mid seventies and the late eighties, depending on availability of photography. The SPANS (Spatial Analysis System) GIS was used for data analysis which enabled the scale and dynamic nature of changes to be clearly portrayed.

The work did not stop with this publication. During the landscape change project it became clear that the true benefits of the new digital data sets would not be realised without the continued use of GIS. The national parks were able to utilise the paper maps and data tables generated by Silsoe College in only a very rudimentary manner and this prompted the Countryside Commission to sponsor two further projects focusing on GIS applications. One of the projects, which runs in house in the Lake District, linked to the northern parks, has just finished its final year. The other, using consultants Andrew Harrison (Bristol University) and Richard Dunn, working with Dartmoor, Exmoor and the Broads, is part way through a second tranche of work. This has included linking GIS to Desk Top Publishing (DTP), computerising planning registers and analysing landscape change in different policy designations.

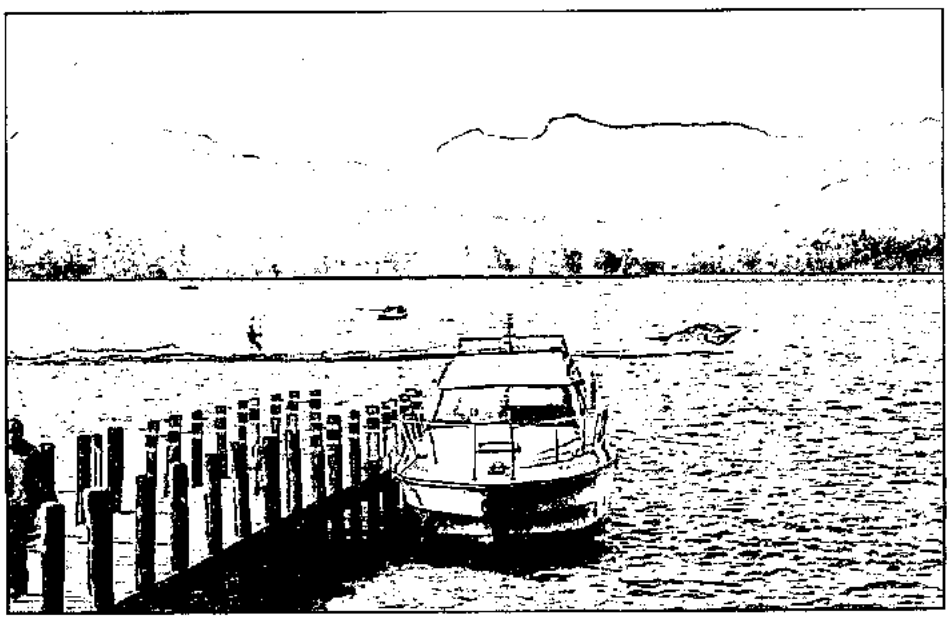
The aim in both projects has been to establish ways in which the landscape data sets can be used either in their own right or in conjunction with other available data. This assists both the parks' day to day operations and longer term policy work. At the same time the work aims to explore and evaluate the potential of GIS in the work environment of the national park authorities. Both projects have tackled their briefs by a series of complementary case studies using a variety of software on PC's and a workstation. The Countryside Commission is currently considering how best to disseminate the information and experience gained.

In the Lake District, the project aims were pursued initially on an experimental basis by establishing the SPANS GIS, supported by a full time officer in the Land Use and Planning Department of the park authority. Additional software has been added as the project has progressed: this includes Mapdata (essentially a digital mapping package with some GIS type functions); SPANS MAP and MapInfo (examples of the newer generation of lower cost desk top mapping/GIS packages).

Applications

One of the first case studies concentrated on the distribution and loss of hedgerows. This data was used to inform policy decisions on the targeting of grants to encourage replanting and management. The landscape data sets had demonstrated, contrary to popular belief, that the national park contained significant areas where hedgerows formed the predominant boundary type. Equally the data pointed to significant hedgerow losses between the two survey dates. By combining the information in SPANS, several areas of loss were identified where hedgerows were likely to be prominent landscape features. These formed the basis for a field assessment, and this work finalised the choice of areas for action.

This type of analysis could be repeated for other landscape elements such as groups of trees or particular



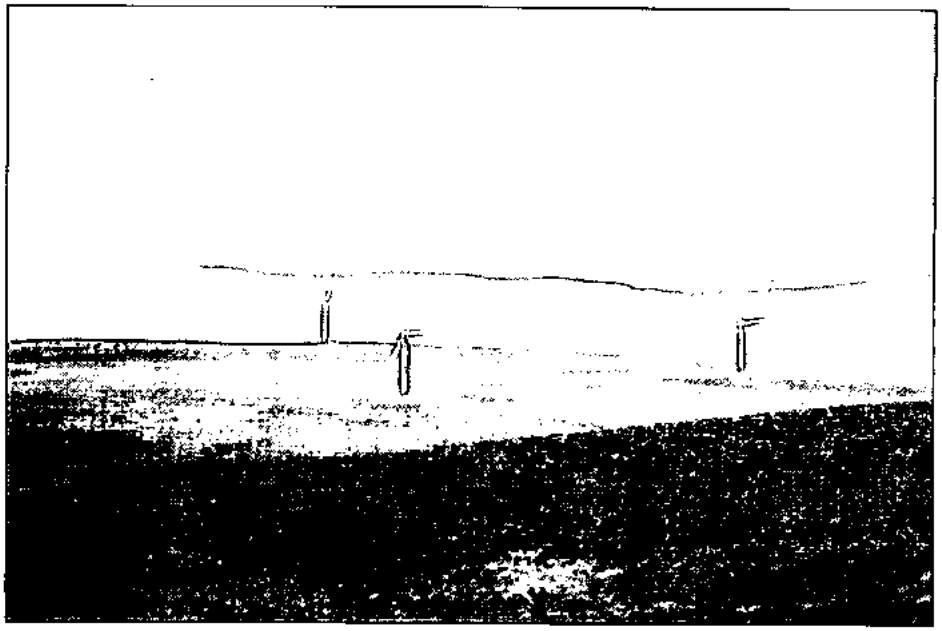
Noise level zones on Lake Windermere can be mapped using GIS

habitats. For example, information on the distribution and density of walls and the extent of heather moorland were extracted to assist the Leeds Office of the Agricultural Development and Advisory Service (ADAS). This information was used in preparatory work on the definition and prescriptions for the Lake District Environmentally Sensitive Area (ESA).

SPANS is able to generate a Digital Terrain Model (DTM) from elevation data. This has enabled the national park to predict and analyse critical viewpoints for different landscape features by using the intervisibility model of the GIS. Applications relating to the prominence and amelioration of badly designed plantation boundaries were developed by wrapping the woodland categories from the landscape data sets over a visibility map generated from the O.S. 1:50,000 digital elevation data. The approach has subsequently been applied in development control casework on wind turbines and extensions of caravan sites, saving considerable amounts of time in field reconnaissance. Distance from specific locations in the visibility maps can also be plotted using the GIS. This technique has been used to map noise level zones related to power boating on Lake Windermere.

The introduction of low cost desk top mapping software has opened up other possibilities, with the capability to design easy menu driven access linking maps, databases and photographic images. The Lake District project has investigated this approach to landscape change data sets; links with the existing planning applications database; and to automating constraints checking. This latter operation is currently carried out by manual checking of paper maps, covering some 20 categories such as SSSI, Ancient Monuments, County Trust Wildlife Sites, Common Land and Rights of Way.

The Edwards Committee (Edwards, 1991) urged national parks to give more consideration to their needs for information, and recommended an inventory of the environmental assets in each park. Currently the Countryside Commission and the parks are cooperating to tackle this issue. As part of this exercise the Lake District GIS work has been extended to look at ways in which the Yorkshire Dales Rights Of Way data and surveys of path conditions can be transferred to a GIS and used more productively.



GIS can help in development control by modelling critical viewpoints

The future

At the time the landscape change project was under way in the late 1980s GIS technology wasrelatively new to this country and not widely used. There has been an enormous reduction in the cost of hardware, in the improvement of PC specifications, in the range and price of software and in the availability of digital products from the Ordnance Survey. It is no longer a question of *whether* parks should involve themselves in GIS but *when*. In the 1980s there was a tendency to think in terms of *which* GIS, out of a restricted number of relatively expensive systems, would be best. Now the focus has shifted to the applications which would benefit from GIS, the associated data input costs and the right software product for the job at hand.

Within the parks, collaborative work is emerging, and in the Lake District much emphasis is placed on data sharing and cooperation with other agencies such as English Nature and ADAS. In the Brecon Beacons,the National Park authority has used MapInfo to concentrate on providing a map based access to a majority of their data sets. Over the last two years they have digitised virtually all the information from their paper maps and will shortly be coming 'on line' with a fully automated constraints checking application.

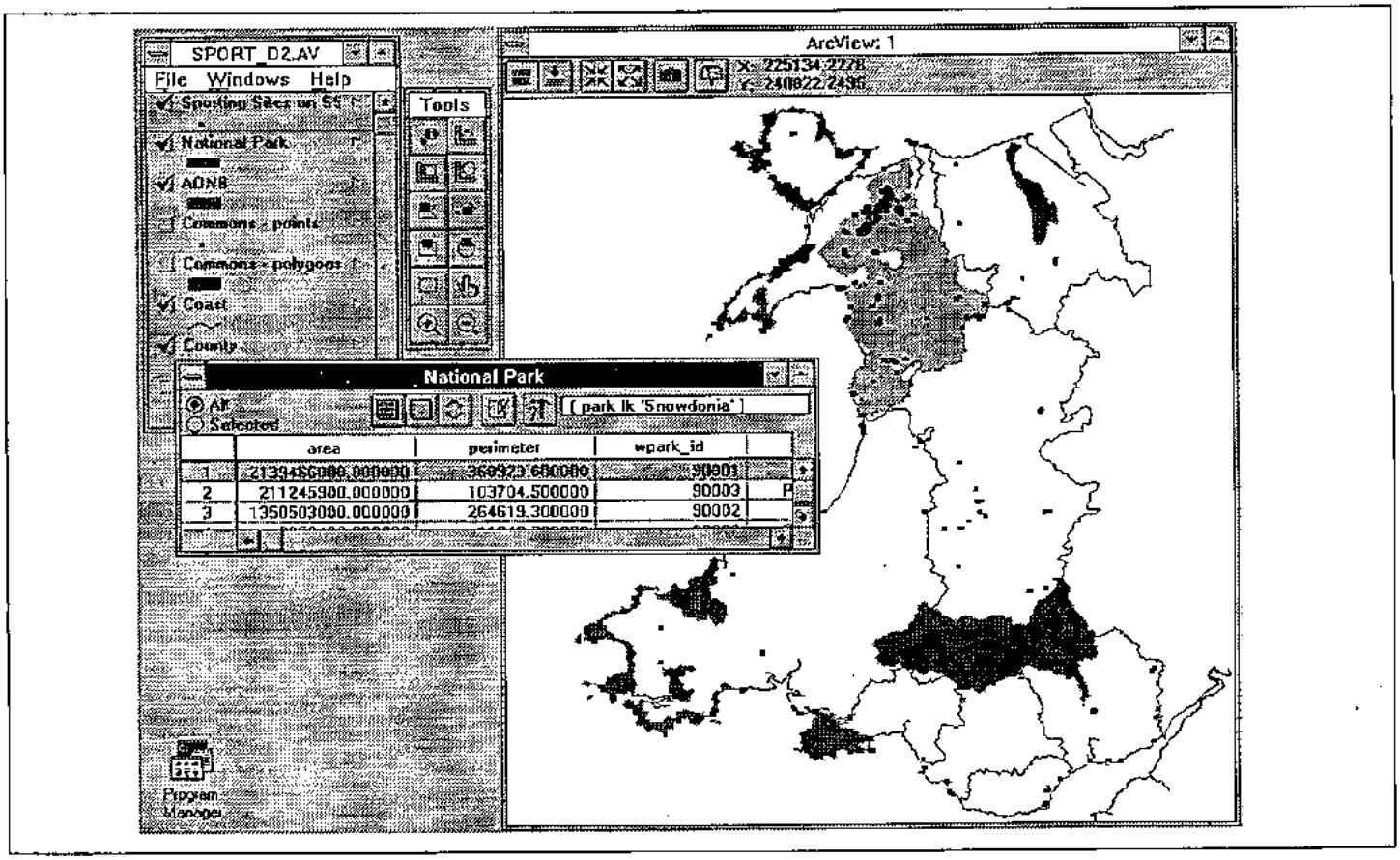
References:

Countryside Commission. (1991) Landscape Change In The National Parks. CCP 359, Countryside Commission Publications.

Edwards, R. (1991) Fit For The Future. Report of the National Parks Review Panel. CCP 334. Countryside Commission Publications.

Natural facilities in Wales; using GIS to map opportunities for sport and recreation

Stuart Smith
Sports Council for Wales



Natural facilities GIS: options selected shown in windows, Snowdonia National Park highlighted

A Natural Facilities Database is held at the Rural Surveys Research Unit at Aberystwyth and is now in GIS format. It is jointly owned by the Sports Council for Wales (SCW) and the Countryside Council for Wales (CCW).

The original computerised database was compiled for SCW by RSRU and was the first of its kind in Britain. It catalogued over 200 sites all over Wales where natural facilities are used for sport and physical recreation, covering land and water based activities as well as those which involve taking to the air. While the database is fairly comprehensive, it should not be taken as exhaustive since in some locations where sporting activity is sensitive or contoversial, sites have been omitted.There are also other activites, of course, that are so widespread (like Rambling or Swimming) that reference has been limited to a selected set of key sites or centres.

The activities covered by the database comprise sixteen land based activities from caving to mountain biking, rockclimbing, hillwalking, orienteering, claytarget shooting and golf; also included are fifteen water based activites from angling to canoeing, jetskiing, sailing and sub aqua. Hangliding, microlight flying and parachuting are amongst the air based activities. This information was published by SCW as a digest in June 1991.

As the second phase of the project, SCW commissioned RSRU to map the correspondence of sporting sites in the natural environment of Wales to areas with some degree of protected status The exact locations of sporting sites were matched to the boundaries of National Parks, Heritage Coasts, AONBs, SSSIs, National and Local Nature Reserves and areas of Common Land. The information gathered for each site comprises the activity(ies) that take place there, the name of the site, its inclusion in County and District, a map and grid reference together with its location in, or near (within 1 km) a protected area. The type, name, size and date of establishment of the protected area is also given, together with (where appropriate) the relevant CCW office, local

authority, registered owners and pasture rights. The database also contains a brief description of the site.

This study revealed a high degree of correlation between many natural sporting facilities and areas with some form of protected status. Over 90% of caving sites are within the boundaries of National Parks, with a further 4% being within 1km. There is also a high degree of correlation between National Parks and sites where mountain biking, rock climbing, snow and ice climbing, hillwalking and sub aqua activities take place; as there is with SSSIs and land yachting, rock and ice climbing and surfing; and between sub aqua, and surfing and Heritage Coasts, to include just the activities that coincide with protected areas most often. This information was published by SCW as a Sports Study in September 1992.

The third phase of the project involving input from CCW included a pilot study of more detailed information in Ceredigion, (such as the routes and character of individual cycle paths); and the conversion of the database into its present GIS form by RSRU at Aberystwyth. The GIS used is Arc View, by Environments Systems Research Incorporated (California).

As the name indicates it is a viewing system that allows the operator to view and query geographic datasets originally created by RSRU for SCW in Arc/Info. It does not have the facility to create new datasets; neither does it allow the adding or updating of existing datasets. Therefore the software package is simpler to learn, its memory requirements are kept to a minimum, the data is protected from accidental alteration and the cost of the package is reduced.

However, the system does allow the writing out of data derived from queries to other packages, including spreadsheets, word processors and databases. This, of course, extends the functionality of the system, allowing operators to perform more complex analysis in packages with which they are already familiar. Arc View has built-in mapping functions, with options to print the map as seen on the screen (in colour or monochrome) or to transfer the map in file format to a graphics package where it could be further embellished before printing or inclusion a desk top publication.

The technical requirements are 10Mb of harddisk for software, plus space for data storage. A minimum of 4Mb of RAM to run the system (8Mb the advised minimum). The software needs windows 3.1 or higher in which to run, though it will run on an 80386 without a math coprocessor , abut query and display would be greatly speeded up on an 80486 or better.

The dataset is available on an annual licence. Discounts are available for partner organisations who provide accurate updates of the information the hold which is included in the database.•

GIS maps the many opportunities in the Pembrokeshire Coast National Park for sport and recreation.

Woodland visits: monitoring vehicle use

This is a summary of survey work undertaken by Forest Enterprise (N and E England region). Last year they monitored vehicle use at their sites using traffic counters installed in the road, resulting in ascertaining vehicle use patterns on a daily, weekly and seasonal basis. This information provides a valuable management tool for targeting of resources.

Rob Guest and Fiona Simpson, Forest Enterprise

In 1993, the N&E England Region of Forest Enterprise produced a recreation strategy to guide the provision of recreation facilities and services. The strategy identified monitoring of recreational use and demand as a vital tool to assist effective implementation of the strategy. To this end in 1993, the Region installed twenty-eight Peek Traffic GK-4004 induction loop traffic counters to complement four that had been in operation in Northants for some time. The current change as vehicles pass over an induction loop is recorded on modules then analysed on PC at York using VISA (Vehicle Information Survey Analysis) software developed by GK Instruments. Standard output analyses traffic flows on an hourly basis, with weekly summaries for the period covered by the module. The costs of the system in mid-1993 were:

each counter	£640
each induction loop installed by Peek (average depending on location)	£400
each encased induction loop for self installation	£150
each module	£88
dataport & analysis software	£821

Overall there have been a range of experiences with the operating of the counters themselves and the processing of the modules. Most problems were associated with power supply for the counters. Rechargeable batteries were used but proved ineffective after a while, the machines needing good battery power to record the current change in the loop. Long lasting batteries proved to be of no advantage and the change over period needed to be reduced to 3-4 weeks. The most successful option was to use cheaper Silverseal batteries which are satisfactory if replaced every 4 weeks. There were some problems with connections and many machines have now been hardwired to overcome the loose battery jack point. There were also some problems with condensation in the counters.

Another anomaly has arisen when cars stand still over the loop - the counter records two cars or can even be sent into a frenzy! This may affect data if the traffic counter is situated very close to a car park ticket machine or junction where cars are stationary. Two counters have so far proved unsatisfactory producing spurious results by predicting data weeks in advance.

Experience showed that the modules also need to be changed at regular (monthly) periods otherwise data can be lost or erroneous, especially if battery power runs low or condensation problems arise. Regular module change over helps identify any problems; a two week analysis period was useful when first setting up. Experience has shown the need to carefully consider the siting of the counters and constantly monitor the equipment.

The first six months

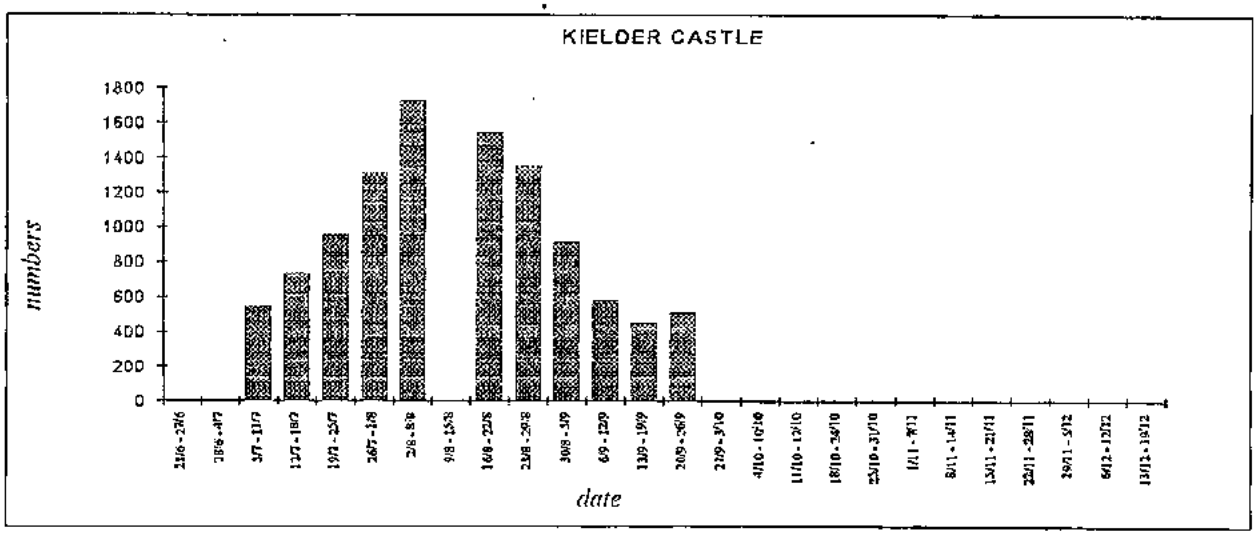
This report presents data for the monitoring scheme from the time that the first of the new counters became operational on 21 June until just prior to Christmas. Thirty counters provided useful data during this period. Some continued to work well throughout the period, some were installed later and some others only operated intermittently. During the six month period, the average number of weeks for monitoring of a site was 11 (range 4 - 23) and the longest continuous period of monitoring for each site averaged 8.5 weeks.

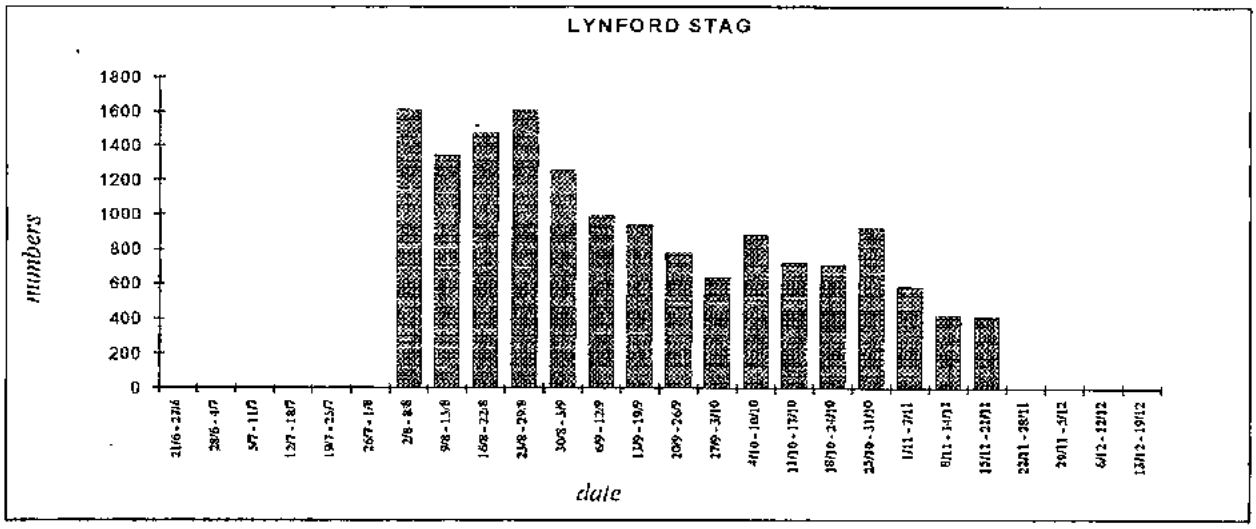
During the period of monitoring, 281644 vehicles were recorded by the traffic counters - an average of 917 per week per site for the region as a whole, although there was considerable seasonal variation in numbers with the general trends of highest numbers in the summer school holidays and another peak at the autumn half-term holiday.

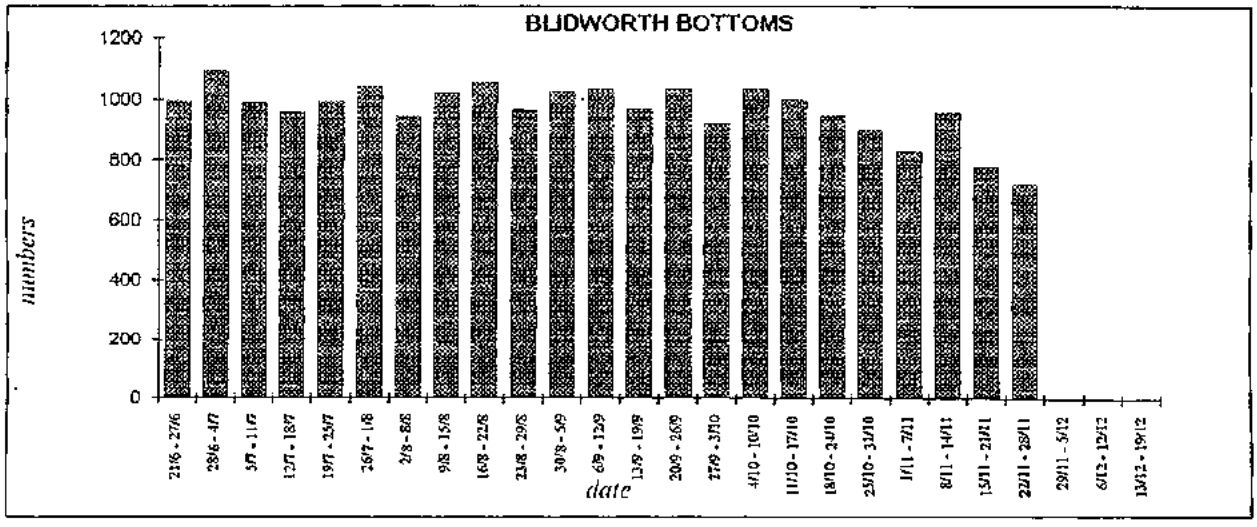
The volume of vehicles varied significantly from site to site. Average numbers of vehicles per week were 919 during the summer period from 12/7 - 12/9 but ranged from 98 to 2594. The average number of cars was only 494 per week during the late autumn period from 4/10 -5/12. It is important to note that the type of traffic counted is influenced by the siting of the counters. Those installed in car parks give a good indication of visitors' vehicles but those on forest roads/drives also include non-recreational traffic which must be taken into account.

Interpreting the results

The seasonal trends at specific sites are apparent from these tables when the different nature of sites becomes apparent. Where visitors are predominantly tourists who are making a special trip out to visit a site, e.g. at Kielder Castle, there is a very short season for visits that peaks during the summer school holidays, and numbers quickly fall off after that. A number of







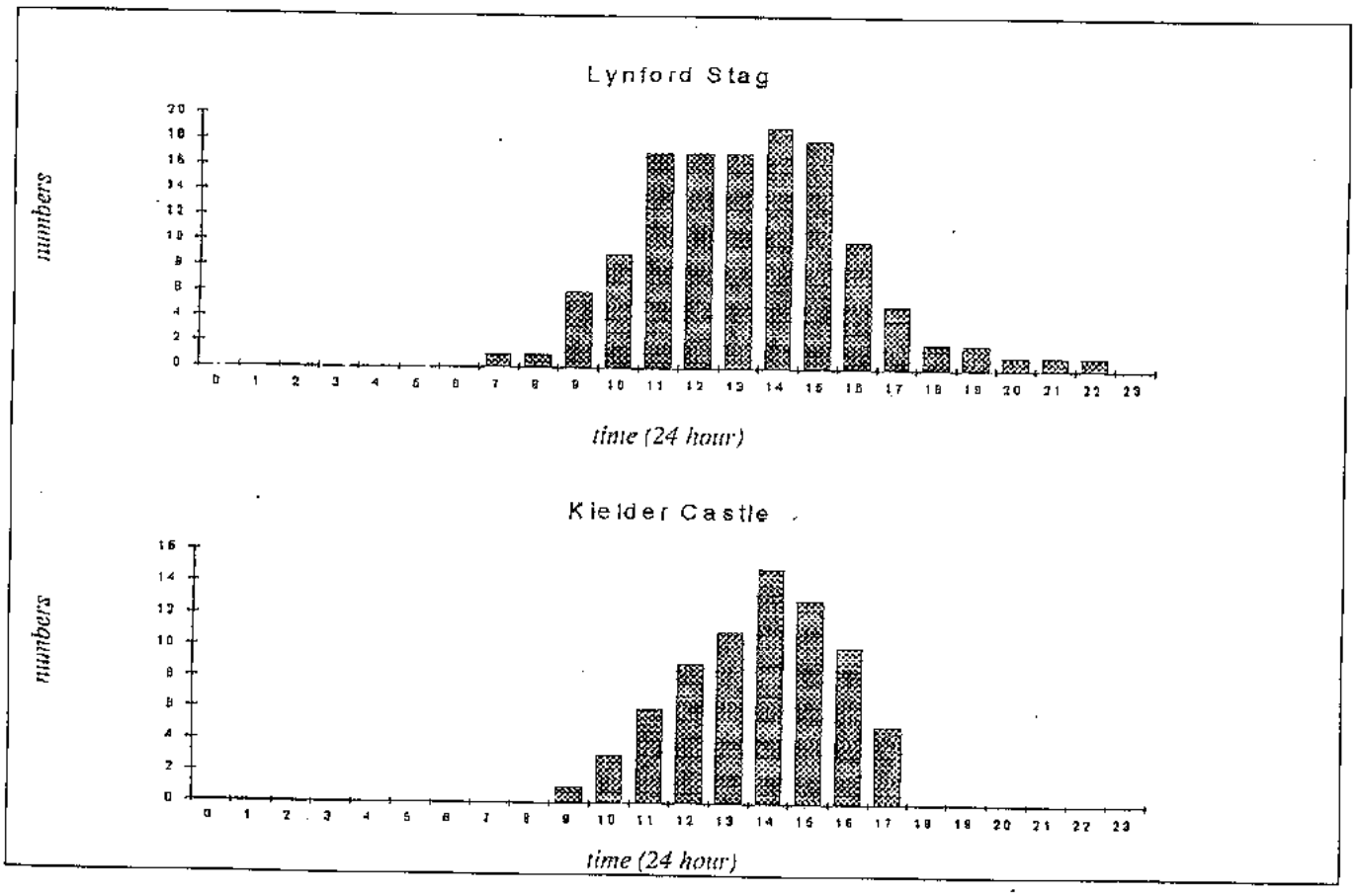
Numbers of vehicles visiting Forest Enterprise sites during 21/6/ 93-19/12/93.

sites, including Lynford Stag, also have the highest numbers during the same period of the summer, but the fall off in numbers is less abrupt as the year progresses, and higher visitor numbers are also apparent in the autumn half-term holiday. A number of the sites in the Midlands, however, showed totally different trends as illustrated in the data from Blidworth Bottoms. They are used by locals throughout the year rather than by visitors and the use is relatively constant whatever the weather - with only a gradual falling off towards the year end.

Different patterns of use were also noted through the week. This is illustrated by deriving the percentage of the week's vehicles that visited at the weekend. The overall average for all sites in the region was 38% (an even distribution of visits throughout the week would give 28%) but most sites had a higher proportion of visits at weekends - up to 53% at Simonside in Northumberland.

There was also significant variation in the use of the sites during the day. The most typical pattern is similar to that shown for Lynford Stag, with numbers building up to a peak in the early afternoon and then tailing off in the evening. This pattern may exhibit variations - for example at Kielder Castle the pattern is similar but there is the influencing factor of the distance and time taken by the visitors to reach the site - this results in few visitors early or late in the day. Another pattern of use is shown in the example from the Sherwood Centre. There is still a peak in the afternoon, but another one in the morning. These are thought to indicate short term visits to the site, usually by people walking dogs at regular times. The truncated pattern of use here indicates the influence of locking the gates into Clipstone Forest overnight. This dog walking use can also be seen in the example from Longdale Lane in Sherwood, but the counters have also recorded the degree of use of this site during the night, where forest recreation takes on another meaning entirely!! Some sites have few hours of the day when they are not being visited.

Delays in installing some counters, and the lack of continuous monitoring prevented a comprehensive assessment of numbers of vehicles using the sites. The number of vehicles recorded during the six months can provide an estimate of total numbers. The average number of vehicles per week for the 29 sites monitored was 917 over the six month period. Thus the total number of vehicles to have used these sites during the latter six months of the year can be estimated as



Visits to Forest Enterprise sites, showing typical

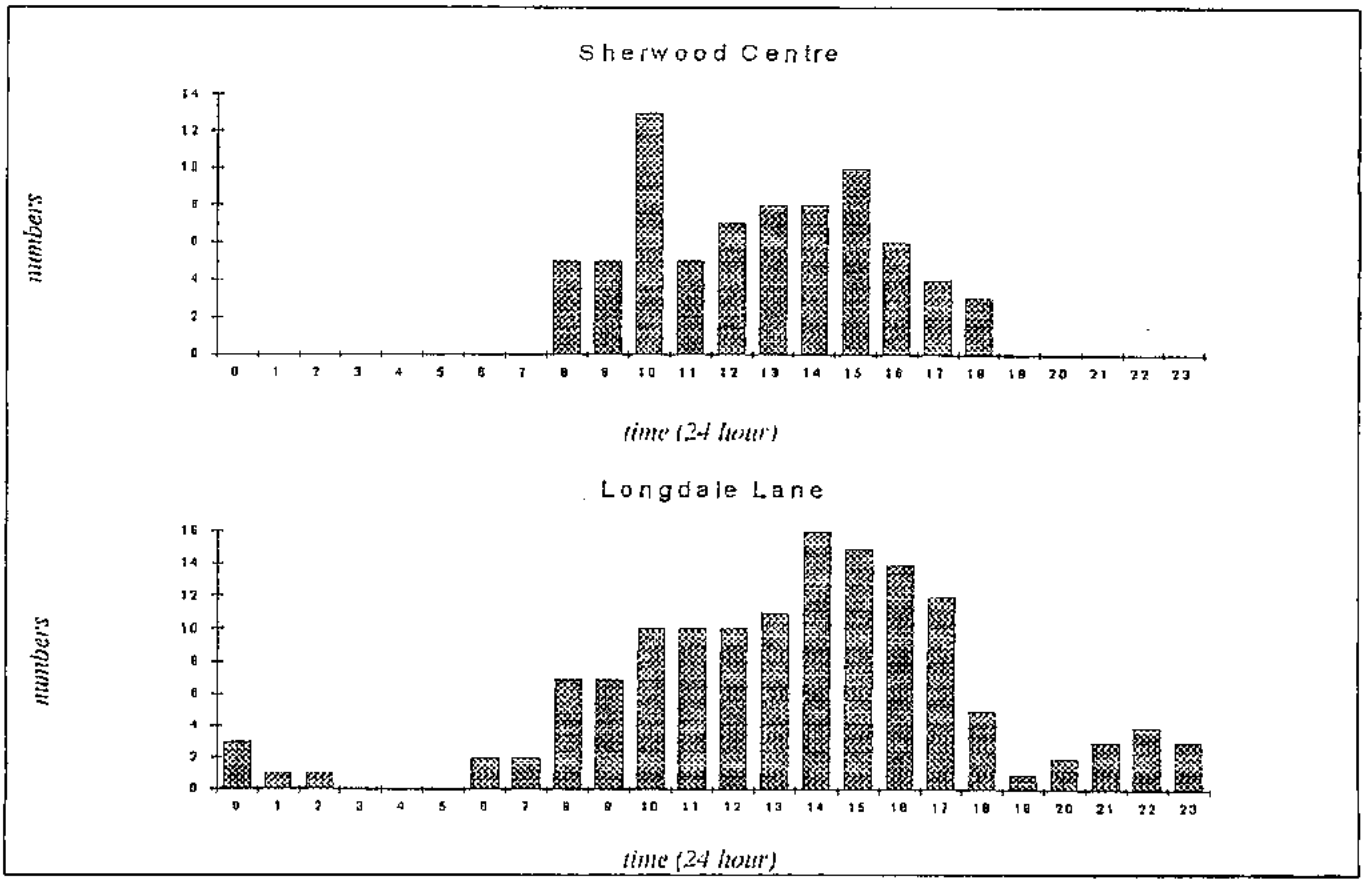
917 x 29 x 26= 691418. In order to provide a more refined estimate of numbers, data trends can be extrapolated for each site, and then these derived patterns used to evaluate numbers. This assumes enough data is available to derive the seasonal pattern of use for each site - clearly for sites with only a few weeks' data this is extremely difficult, and relies on personal interpretation. An attempt at this method gave an estimate of 634000 vehicles during the six month period, a total similar to the previous estimate.

A useful management tool

It is obvious that despite the problems encountered in establishing the traffic counters, they are already starting to yield invaluable information on the amount and pattern of vehicle use of some of our recreation sites, but this information is currently limited by the extent and continuity of the data collection. The data, however is already proving useful for management purposes - it has been used to monitor security arrangements, to determine honesty rates at pay barriers, and to provide information for selling a refreshment franchise. There is considerable scope to use the system to assist with decisions on siting and maintenance of recreation facilities and targeting of resources.

After the experiences of the trial period reported here, we should be in a much better position to improve the quantity and quality of data collected in 1994. Experience has shown that close monitoring of results can pinpoint problems in the system at an early stage, that careful attention to maintenance is required and that siting of the induction loops can have a significant impact on results. Priorities after refining the collection of data on vehicle use will be collecting data to ratify the average number of people per vehicle for each site, determining a conversion factor to exclude non-recreational traffic and also determine how typical the monitored sites are of the forests as a whole.

Further information may be obtained from **Rob Guest** or **Fiona Simpson**, Forest Enterprise,1A Grosvenor Terrace, York, YO3 7BD

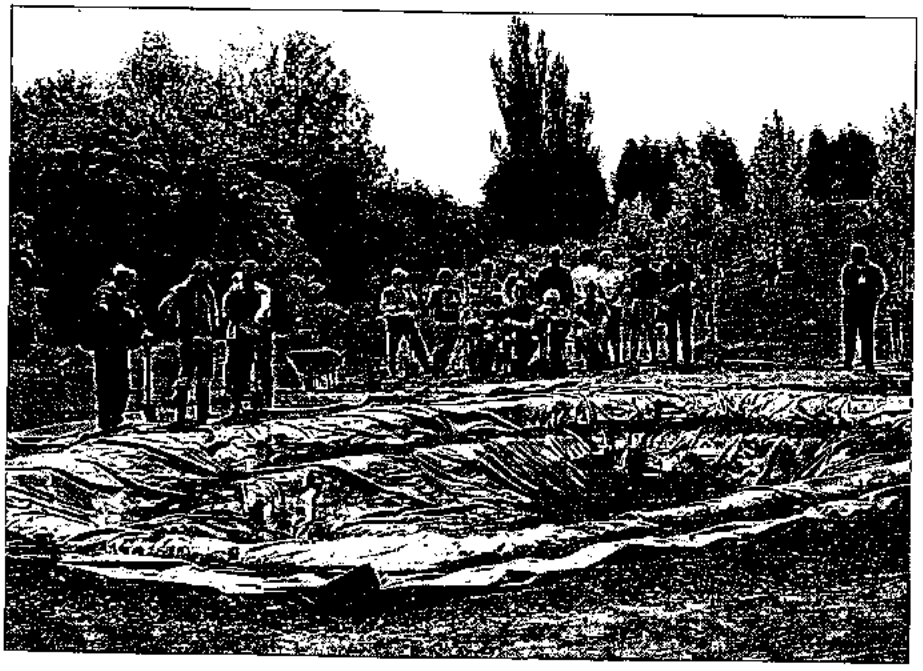


variation in use of sites throughout the day.

Pioneering pocket parks

Sue Paice
Northamptonshire County Council

This year's CRN conference on "Communities and their Countryside" provided an excellent platform for examples of successful community action and good practice, one of which was Northamptonshire's Pocket Parks. Alan Teulon and Sue Paice, both of Northamptonshire County Council's Countryside Services, ran a workshop on the subject, which stimulated much interest from those wishing to promote similar community projects in their own areas.



Volunteers from the community joining forces to create their own Pocket Park.

Northamptonshire, who pioneered the scheme, recently achieved its fiftieth pocket park; a former 2.1 acre paddock in the attractive village of Gretton. The paddock was purchased by the Parish Council from British Steel in nearby Corby. A celebration was held, bringing together everyone involved in the scheme, and the importance of partnership and synergy was stressed. These were recurring themes at CRN'S conference, as was the concept of ownership by the local community.

Pocket Parks exemplify perfectly these ideas. Local communities are helped to purchase a piece of land on their doorstep, thereby gaining for themselves a degree of personal fulfilment as well as protecting the immediate environment. Northamptonshire County Council also helps by providing advice, countryside skills training, assistance with management plans and ongoing moral support. Any grant which they allocate to a new pocket park for land purchase and setting up costs is matched by the Countryside Commission, the District Council and the local community itself. This means that the financial burden does not fall too heavily on any one body and so a pocket park need not be expensive. Often business sponsors become involved and items are donated, reducing costs even further.

A lot was said at the conference about sustainability. Pocket Parks are sustainable in that they are usually reached without recourse to the car, and often celebrate local distinctiveness. Each one is different from the rest, but yet all have three things in common: they are owned and managed by the local community; they have full public access; they have recreational and wildlife value, or potential value.

Thank you to CRN for organising a most enjoyable and thought-provoking conference, for providing an excellent forum for academics and practitioners to come together and learn from each other and for giving us the opportunity to spread the gospel of Pocket Parks to the delegates. I hope those who attended our workshop will be encouraged to delve into the fascinating and supremely rewarding form of community action - a highly recommended way of opening up new countryside recreation opportunities.

Any one wishing to know more about pocket parks should contact:

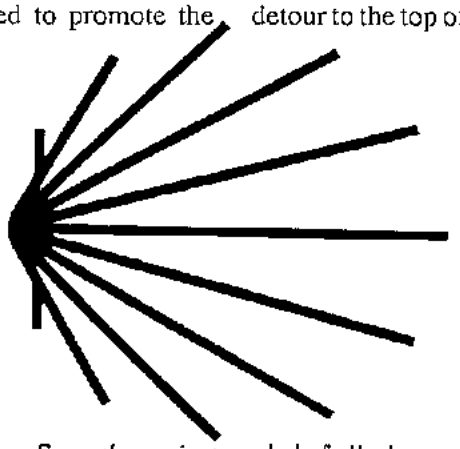
Sue Paice
Pocket Parks Officer
Northamptonshire County Council
PO Box 221
John Dryden House
8 -10 The Lakes
Northampton NN4 7DE
Tel. 0604 237222

Walking St Michaels Way

Throughout Europe there is a network of pilgrim routes which lead to one of the three most important places of Christian pilgrimage in the world - the Cathedral of St James in Santiago de Compostela, Spain.

In 1987 the Council of Europe decided to promote the Santiago de Compostela Pilgrim Way "as a highly symbolic and cultural route". Recognising that the European network of pilgrim ways represents"a collective memory ....overcoming distances, frontiers and language barriers", the Council urged others to follow their example by promoting the pilgrim ways in their areas.

Today, the basic spine routes in Europe have been restored. This has encouraged rehabilitation of buildings along the Ways and a rediscovery of the historical and cultural heritage associated with the pilgrimage.



From the ancient symbol of pilgrims; the scallop shell

St Michael's Way is one of the Santiago de Compostela routes which crosses Cornwall, and one which has been used since prehistoric times. Crossing the twelve miles from north coast to south, it was particularly well used by travellers from Ireland and Wales wishing to reach the Continent without risking the dangers of a sea passage around Land's End, St Michael's Way has been developed by Cornwall County Council, inspired and guided by Bredereth Sen Jago (the Cornish Pilgrims of St James).

St Michael's Way runs from Lelant to Marazion. It follows a short section of the South West Coast Path before cutting inland through typically attractive, Cornish scenery. A short detour to the top of Trencorm Hill affords breathtaking views of both north and south coasts. Walkers may choose to walk or take the ferry across to St Michael's Mount, depending on tide times and the weather.

The route has been waymarked using the traditional Pilgrim's symbol of a scallop shell. The symbol is stylised, based on the Council for Europe's sign for pilgrim routes. The direction arrows are coloured according to Countryside Commission specifications: yellow for footpaths, blue for bridleways and red for byways. On the road sections black arrows are used.

Promoting the walk, Cornwall County Council has published an interesting booklet which guides walkers along the route. It explains some of the history and legends surrounding the key features as well as practical advice for planning the route. Please contact Heidi Taylor, Countryside Access Section, Transportation and Estates Department, Western Group Centre, Radnor Road, Scorrier, Redruth, TR16 5EH.
Tel: 0209 820611

Countryside RecreationTraining 1994/5

Community woodland design

Loschill Hall
22-25 November 1994, Derbyshire – *Book through the Forestry Commission on 031 334 0303 Ext 2186*

Forestry for non-foresters

For anyone who wants to know more. Assumes no prior knowledge.

6-9 December 1994 Forest of Dean, Gloucestershire
17-20 January 1995 Forest of Ae, Dumfries
31 January-3 February 1995 Forest of Dean, Gloucestershire
28-31 March 1995 Forest of Ae, Dumfries

Contact: Forest of Dean Management Training Centre 0594 832096
Forest of Ae Management Training Ceantre 0387 860637

Countryside Recreation Training 1994/5

Interpretive Planning
Introduction to provision at both natural and historic sites
Losehill Hall
7-9 Nov 1994, Derbyshire

Learning through the Outdoors
Encouraging Education and Recreation in the countryside
Low Bank Ground
7-11 Nov 1994, Cumbria

Access Negotiation Skills
For those working with rights of way in the countryside
Losehill Hall
14-16 Nov 1994, Derbyshire

Management Planning in the Countryside
An understanding of conceptual aspects Site and species management plans.
Plas Tan y Bwlc
14-18 Nov 1994, Gwynedd

Countryside Ranger Training
A foundation course for field based staff
Losehill Hall (2 courses)
21-27 Nov 1994
20-26 Feb 1995, Derbyshire

Public Participation in Countryside Decision Making
A residential workshop
Anglia Polytechnic University
29-30 Nov 1994, Cambridge

Involving Communities in Interpreting their Place
Your Place or Theirs?
CEI (with Rural Action)
30Nov-1Dec 1994, Wiltshire

How Successful are You?
Evaluating Visitor Services
CEI/Losehill Hall
5-6 Dec 1994, Derbyshire

Presentation Skills for Countryside Staff
Presenting information, for gaining funding or favour for a project.
CMA
6 Dec 1994, Devon

A Way With Words
Writing effectively for your visitors
CEI Scotland
6-8 Dec 1994, Dumfries

Access and Public Rights of Way Law & Management
Plas Tan y Bwlch
6-9 Dec 1994, Gwynedd

New Directions in Countryside Environmental Education
An "advanced" course
Losehill Hall
7-9 Dec 1994, Derbyshire

Interpretation Workshop
Planning and design of leaflets, panels and exhibitions
CEI
12 Dec 1994, Manchester

Working in Wales: Environmental, Cultural and Social Issues
For participants working in a Welsh context; addresses matters which affect decision making and sometimes drive resistance
Plas Tan y Bwlch
12-15 Dec, Gwynedd

Practical Application of Countryside Law
For rangers and wardens
Plas Tan y Bwlch
9-13 Jan 1995, Gwynedd

Countryside Interpretation
Assumes no prior knowledge
CEI/Losehill Hall
19-26 Jan 1995, Derbyshire

Transport and the Countryside: Managing the flow
Rural transport and traffic management
Plas Tan y Bwlch
23-27 Jan 1995, Gwynedd

Leading School Groups Effectively
How the National Curriculum relates to countryside school visits
Capel Manor
25 Jan 1995, Middlesex

Barriers to Women's Development
For women working in countryside and environmental conservation, and their managers.
Losehill Hall
30-31 January 1995, Derbyshire

Losehill Hall—01433 620373
Plas Tan y Bwlch — 0766 85324/ 85334
Capel Manor—0992 763849
CMA (Countryside Management Association)—0752 338347
CEI (Centre for Environmental Interpretation) — 061 247 1067
CEI, Scotland—0316508017
Low Bank Ground — 05394 41314
Anglia Polytechnic University— 0245 493131 Ext 3021

A Drive in the Country?

Examining the problems of recreational travel and working towards solutions

COUNTRYSIDE RECREATION NETWORK

A workshop to be held at Aston Business School, Birmingham on Tuesday 1 November 1994

reader survey - next issue

What would you like to read about in CRN News?
In order that Network News contains articles which are interesting and relevant to your work, we will be asking for your opinion. In the next (February 1995) edition of CRN News you will be given the opportunity of completing a survey form to return to us. Results of the survey will be published at a later date.

COUNTRYSIDE
RECREATION
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subscription for CRN News 1995

In order to update our records for 1995 we would be grateful if you could fill in and return the subscription form below.
Subscription to Countryside Recreation Network News is *free* and we will be more than happy to continue sending your copy. However, after the next (February 1995) issue, CRN News will be sent out only to those who have re-subscribed.

Please return this form to: Catherine Etchell
Countryside Recreation Network
Dept. of City and Regional Planning
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College of Cardiff
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Cardiff CF1 3YN

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