

Box 2

# The National Centre for Environmental Data and Surveillance

Annual Report  
April 1998 - April 1999



**ENVIRONMENT  
AGENCY**

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## Chairman's Foreword

The National Centre has achieved excellent progress over the last twelve months, and is now recognised as a National Centre of Excellence by outside organisations both in the UK and abroad. This has been achieved as a result of hard work, innovation, team spirit and good management. The Customer Board has played a vital role, both in ensuring that the Centre delivers what the customer wants, and by way of their encouragement and championing of the Centre's work. With 1999/2000 being the Agency's "Year of Information", the foundation is now well laid to deliver a quantum leap in what the Centre can deliver.

*Jan Pentreath*  
*Director of Environmental Strategy and*  
*Chairman of NC EDS Customer Board*

## 1 Report of the Customer Board

The Customer Board met three times in this financial year; on 9 June 1998, 5 November 1998 and 19 February 1999. Some adjustments to the Board's membership have been made over the past year and its present composition is:

Dr J Pentreath (Chair)  
J Seager (EMA Customer)  
D Palmer (Head of Centre)  
Dr M Griffiths (EP Customer)  
B Empson (Water Management Customer)  
K Bryan (Regions Customer)  
H Davidson (Areas Customer)  
K Hinton (Corporate Communications Customer)  
S Carlyle (SATIS Customer)  
H Pearce (Corporate Planning Representative)  
Dr P Singleton (SEPA Representative)  
Dr B Wyatt (External Advisor)  
T Horswill (ES Business Planner)  
T Long (Secretary)

The Customer Board approved the Centre's Annual Report for 1997/98 and confirmed the Centre's budget for 1998/99 at its 9 June meeting. The Centre's Business Plan submission for 1999/00 was agreed at the 5 November meeting and subsequently accepted by the Agency's Board. The Customer Board at the 19 February meeting confirmed the Centre's budget submission for 1999/00.

ENVIRONMENT AGENCY



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## 2 Summary of the Year's Achievements and Outputs

### 2.1 Work Programme 1998/99

The Centre's work programme was set out in the Business Plan for 1998/99 in the following categories:

- (i) Statutory and national data reporting;
- (ii) State of the Environment reporting;
- (iii) Acquisition of external environmental databases;
- (iv) Development of an Environmental Data Management System;
- (v) Harmonisation of its IT systems;
- (vi) Management of data for (Local Environment Agency Plans) LEAPs application;
- (vii) Maintenance of Compact Airborne and Spectrographic Imager (CASI) and Light Direction and Ranging (LIDAR) remote surveillance systems;
- (viii) Development of the Agency's environmental web site;
- (ix) R&D Instrumentation and Field Techniques Topic leadership; and
- (x) Provision of a Surveillance Service for Regions and Areas.

Progress in each of these categories is given below. In summary, all objectives of the work programme were met and, in many cases, were exceeded whilst staying within 3% of the original budget.

### 2.2 Statutory and National Data Reporting

All ten statutory and seven national reporting responsibilities were met fully and to schedule. The national databases that underpin their reporting capability were converted from a variety of simple systems to an Access 97 database format which can support a wide range of user enquiry, analysis and reporting options; an essential adjunct to effective interpretation of environmental data into information. The General Quality Assessment (GQA) database was also converted to an Access 97 database, and its analysis and reporting programme was updated from Fortran to Visual Basic.

#### *Additional Achievements*

In addition to conventional Bathing Waters Directive reporting to DETR, an interactive system was developed in which external enquirers could interrogate for local bathing waters quality information, and was tested on the Internet.

### 2.3 State of the Environment Reporting

The Centre contributed to the following State of the Environment reports: Freshwater, Coasts, Air and Land. Hardcopy and web reports on the following *Snapshots of the Environment* have been produced: *A new environmental approach*, *Conservation of land resources*, *Biodiversity* and *Freshwater Fisheries*.

### *Additional Achievements*

A State of the Environment of Wales report was prepared for EA Wales. A nitrates database was transferred from the Groundwater National Centre and a pesticides database was transferred from Anglian Region. Both are being rewritten in Access 97 with full enquiry, analysis and reporting facilities.

#### **2.4 Acquisition of External Environmental Databases**

The following external databases were obtained: Radon in the Environment, Tranquil Areas and Critical Loads. The Institute of Hydrology River Networks database has been upgraded and biological records and human health databases are being assembled.

#### **2.5 Development of an Environmental Data Management System (EDMS)**

The EDMS system was successfully completed to schedule. Linkages to Water Information Management System (WIMS) and to the Pollution Inventory have been established and tested. The system's linkage to locate and access information from internal databases using the metadata concept has been completed and is under test. The EDMS system builds on the strengths of the Centre's Access 97 databases to provide a highly innovative and powerful method of integrating and analysing very large quantities of environmental data. It is at the forefront of the state of database knowledge and the Centre's EDMS development has been described in the scientific press as the "cutting edge" of information technology.

#### **2.6 IT Harmonisation**

The Centre's IT systems have been nationally harmonised, to schedule and within budget.

#### **2.7 LEAPs Data Management**

An electronic first LEAPs has been produced.

### *Additional Achievements*

A series of definitive maps to form the legal basis of the Transfer of Functions Order (1999) have been produced for the National Assembly for Wales, at the request of EA Wales.

#### **2.8 CASI and LIDAR Maintenance**

The CASI and LIDAR airborne imaging systems have been serviced by their supplier, and upgraded with hardware and software enhancements.

#### **2.9 Environmental Web Site Development/Maintenance**

The Agency's Thematic approach to the environment has been expanded up to ninety-three web pages (each web page is equivalent to two A4 text pages, with on average four pages of graphics and, where possible, underlying datasets). The following building blocks for the *Your Environment* web site initiative are in preparation: *Strategy*, *Help us*, *Pressure Point* (youth), *K-Zone* (kids), *SoE* (State of the Environment), *What's in my backyard*. As

mentioned in 2.2 above, Bathing Waters Directive compliance information has been placed on the web in a form to allow local interrogation.

#### *Additional Achievements*

The Inventory for Sources and Releases has been restructured into a Pollution Inventory to allow public interrogation for emissions and discharges to any requested local environment, and is accessible on the Web through *What's in your backyard*.

### **2.10 R&D Topic and Project Management**

The Instrumentation and Field Techniques Topic is being realigned to underpin the strategic thrust of the Fundamental Review of Monitoring. Eleven R&D projects were managed within the Centre during this financial year and a further five were managed regionally but overseen by the Centre's Topic Leader. The Centre entered the 1998/99 year significantly under-performing in project delivery, but has made up the shortfall and all R&D projects are now to schedule and to budget. This has been achieved against a general underspend and late delivery by most R&D programmes over this year.

#### *Additional Achievements*

Two projects, development of an ammonia sensor and development of a nitrate sensor, have considerable commercial potential and externalisation of their Intellectual Property Rights is being progressed. The ammonia sensor project has been reported in the scientific press and on television news.

### **2.11 Regional Surveillance Service**

The majority of this work is provision of digital elevation mapping for Section 105 Flood Defence application. Some 947 km<sup>2</sup> land was surveyed for Anglian region, and 392 km<sup>2</sup> for North West, 84 km<sup>2</sup> for Southern and 25km<sup>2</sup> for North East Regions. Delivery of completed maps was delayed by malfunctioning equipment but the backlog is now decreasing. Regional digital elevation commissions are increasing strongly and the Centre experienced difficulty in housing the extra staff and maintaining a stable skilled workforce based on renewed short-term contracts.

#### *Additional Work*

The national Institute of Hydrology flood risk maps have been converted into MapInfo format at the request of the Section 105 Project Board. External markets for elevation data are being explored with The Radio Communications Agency, a Non-departmental Public Body with wide ranging commercial contacts (accurate elevation data will be an essential prerequisite to the radio propagation studies that will precede the next generation of radio communications equipment).

#### *Sea Empress Prosecution*

This was a unique service for EA Wales that involved a combination of visible, elevation and bathymetric imaging into visible aids to add emphasis to the prosecution case. Two computer simulations were produced: an animation of the view from the vessel's bridge during a model entry into the harbour illustrating correct use of navigation aids, and a reconstruction of the

actual entry indicating the navigation errors. These were supplemented with simulated underwater views of the vessel's under-keel clearance during entry.

## 2.12 Staffing and Accommodation

All of the Centre's 25 complemented posts are filled. There are at present an additional 16 fixed term contractors / temporary staff, nine of whom work on digital elevation commissions. As mentioned above in Section 2.9, it is difficult to keep a stable workforce because of the constraint of short-term contracts, and the Customer Board's assistance is being sought to extend the forward planning of regional commissions.

Additional portacabins have been set up in the site's car park to accommodate digital elevation processing staff and a technical library. This was resourced from regional commissions.

## 3 Resource Summary

### 3.1 Budget 1998/99

The Centre's approved budget for 1998/99 was £1297K, detailed as follows:

<b>Budget Item</b>	<b>£K</b>
<b>Core Tasks</b>	
Reporting commitments, surveillance, new technique development	753
<b>External and contract expenditure</b>	
Environmental database purchase	50
Data Management System	100
IT Harmonisation	40
LEAPs Data Management	35
Remote imagery equipment maintenance	25
Remote Surveillance of land use	20
LIDAR equipment maintenance	20
Environmental web site development	120
CRI (now Pollution Inventory)	120
Harmonised Monitoring database for DETR	14
<b>Total</b>	<b>1,297</b>

The budget was subsequently increased by £70K to purchase bathymetry imaging equipment, giving a total budget of £1,367K.

### 3.2 Expenditure 1998/99

The Centre's expenditure was £1,405K, or £38K (2.8%) in excess of the budget for 1998/99. In addition to this corporate expenditure, the value of R&D projects managed by the Centre for 1998/99 was £336K and the value of Regional commissions for digital elevation mapping in 1998/99 was £214K.

### 3.3 Analysis of Expenditure

R&D topic management is a core responsibility and is funded from the core tasks budget item. Staff involvement in R&D projects was charged at cost. Digital mapping commissions were also essentially cost neutral to the Centre, other than £20K spent on accommodation for additional staff and an inevitable small deficit because surveillance flights are funded in advance of payments on delivery of completed maps (which will be reconciled in the 1999/00 accounts).

The integrated working practice in the Centre precludes an accurate apportioning of the £1,405K to specific budget items but it can be assumed that the 2.8% overspend was mainly a consequence of the regional commission factors noted in the previous paragraph.

#### Budget for 1999/00

The Customer Board approved the following budget submission for 1999/00:

Budget Item	£K
<i>Core tasks</i>	
Reporting commitments, surveillance, new techniques development	812
<i>External and contract expenditure</i>	
CASI maintenance	25
LIDAR maintenance	20
Web maintenance/development	83
CRI (now Pollution Inventory) development	50
Software/data maintenance	40
Data dissemination for Areas/Regions	45
TRI (now Pollution Inventory) development	33
LEAPs database production	40
Database purchases	50
Integrated surveillance	50
Integrated database development	40
River networks integration	26
Income from DETR	-17
<b>Total</b>	<b>1,297</b>

Appendix

## Customer Survey Questionnaire

This report summarises the National Centre for Environmental Data and Surveillance's business for the year 1998/99. We would value your opinion on the quality of service you received from us in order to improve the service and to explore any opportunities to develop new business within your function.

Name .....

Function .....

Location .....

Date .....

1. Please indicate your rating of the standard of our service in the following areas by placing a cross in the appropriate box:

Please tear along dotted line

<b>Activity</b>	<b>Customer rating Good</b>	<b>Customer rating Satisfactory</b>	<b>Customer rating Poor</b>
Statutory/national reporting			
State of the Environment reporting			
Environmental Data Management System			
LEAPs data			
Pollution Inventory/CRI/TRI			
Surveillance service to Regions/Areas a) LIDAR mapping b) CASI imaging c) Other (eg bathymetry)			
R&D projects			
Other (please state)			



Please summarise below the reasons for any "poor" ratings. In particular, did you specify your requirements, in what way were they not adequately met, and with hindsight would a better specification have delivered a better output.

2. Using your knowledge of your business area and our range of capabilities, do you see scope for our developing new products that would be useful to you.

*Please tear along dotted line*

Please send completed Customer Survey Questionnaire to:

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