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NATURAL ENVIRONMENT RESEARCH COUNCIL

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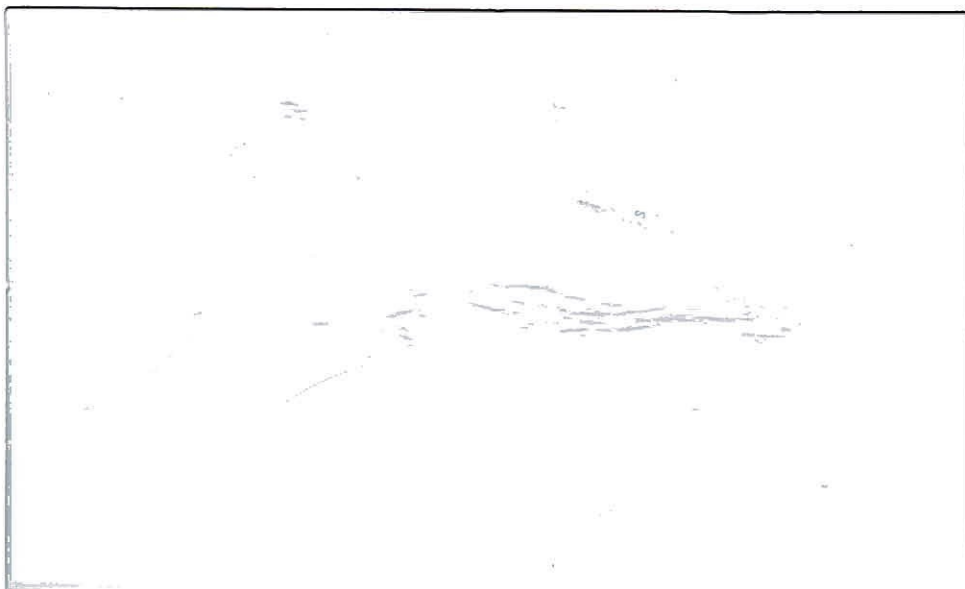
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- To advance the sciences of ecology, environmental microbiology (including virology) and hydrology through high-quality and internationally recognised research leading to a better understanding and quantification of the physical, chemical and biological processes relating to land and freshwater and living organisms within these environments.

- To investigate, through monitoring and modelling, natural changes in the ecological, microbiological and hydrological environments, to assess both past and future changes and to predict man's impact on these environments.

- To secure, expand and provide ecologically and hydrologically relevant data to further scientific research and provide the basis for advice on environmental conservation and sustainable development to governments and industry.

- To promote the use of the Centre's research facilities and data, to provide research training of the highest quality and to enhance the United Kingdom's research base, industrial competitiveness and quality of life.

CENTRE FOR ECOLOGY AND HYDROLOGY

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Countryside Survey 2000

Module 17 - FINDING OUT CAUSES AND UNDERSTANDING SIGNIFICANCE (CS2000 FOCUS)

Final Report
Summary of recommendations

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FOCUS RECOMMENDATIONS

1- Scope of CS

FOCUS has shown that Countryside Survey (CS) data are limited in their capacity to answer questions about certain habitats or types of land. It is essentially, as planned, a general survey of rural UK and as such does not have the capacity to provide detailed information about, for example, urban areas and Priority Habitats. Another potential limitation is reporting change in Broad Habitats which have a rapid turnover.

Recommendations:

- To effectively address specific issues would require different sampling strategies, intensities and methodologies. Rather than modifying CS to incorporate special topics, it is best viewed as a dataset that will set other projects and programmes in context. It is recommended that independent research programmes are devised, but that they use methods that are compatible with CS - a good example is the Countryside Stewardship project led by Peter Carey.

- The objectives of the satellite projects and programmes should be clearly defined at the outset and there should be no expectation of being capable of meeting modified targets.

- There needs to be dialogue between the different research projects and programmes so that the data that are collected within CS are compatible. Alteration of data recorded within CS (e.g. for surveying land within urban areas) should be avoided if possible.

- The strength of the CS research programme should be recognised as an integrated assessment rather than being targeted at specific indicators.

- A repeat survey of 'Key Habitat' squares should be mounted to improve cover of Priority Habitats. The survey should be compatible with, but not part of, CS.

- A complimentary survey of urban land should be considered.

2 - Data integration

2.1 Internal (CEH) integration

CS consists of different components (e.g. Land Cover Map, Field Survey land cover, vegetation plots, soil maps, soil samples, water samples etc.) whose relationship is not always clear. The integration not only requires spatial co-registration, but also a cohesive database with a robust data structure. Temporal differences between datasets also need to be taken into account. The recommendations can be subdivided into general issues, those parts that are relevant to spatial data recording and those aspects that effect vegetation data. An important aspect of the integration is in the sharpening of the field methods so that problems are addressed as the data are recorded.

General Recommendations:

*   The precision of the spatial co-registration and the database structure should be reported.

*   Dataset matches and comparisons that are not valid should be highlighted.

*   Develop more integrated field-recording protocols that will force cross-checking between mapped and sampled data e.g. H plots must be geographically referenced adjacent to a 'hedge' boundary feature.

Recommendations for spatial data:

*   Investigate potential of developments in field recording technology to enable direct data-entry by field staff. Apart from reducing time to reporting, the benefits will include the potential to automatically check data integrity and validate the observations. Many of the problems encountered can only be properly addressed at the point of recording the information. Modifications to data collection must be secure (i.e. must not risk loss of information) and conservative (i.e. must not compromise existing data and remain consistent with them) to guarantee the authority of change information.

*   Quality criteria must be agreed in advance and the results should not be interpreted beyond them.

*   Spatial data should be taken into field and used to positively confirm features or record changes. Surveyors may still be asked to make an independent assessment of the habitats they are surveying, but using portable electronic recording devices will allow the results to be compared immediately.

*   Information should be recorded in detail to permit different forms of post-survey classification.

*   The information gathering should be mandatory to ensure comprehensive and consistent data.

Recommendations for vegetation data

*   The Global Positioning System (GPS) locations recorded for plots need to be tested for assisting plot re-location and to aid with data integration. There may be different guidelines needed for plots in unenclosed landscapes.

- The additional information on the plot sheets could be of greater value if recorded in a consistent way. It needs to identify relevant elements that are not held within the other sections of the survey.

- The plot location maps need to be drawn so they can easily be read in context of the field mapping.

- Better instructions about the use of photography for plot relocation may provide a more comprehensive additional data source.

- Review the status of the category 1 species.

2.2 External integration

As part of FOCUS work the importance of compatible additional data sets became very apparent to support the development of evidence based policy in Great Britain. However, the compatibility, availability and appropriateness of datasets caused problems within the project. For example, data on agri-environment schemes for various countries were often either not available or not in a useful format for use alongside CS data. The recommendations can be divided into those relevant to integration with British data (i.e. where there is spatial overlap) and those from outside Britain where the link is a geographic addition.

Recommendations for British data:

1. Identify different datasets and their sources along with any their data format and spatial structure. Projects such as MAGIC may aid with this process. MAGIC should be made fully aware of the potential of CS data.

2. In order to significantly enhance the scientific potential of CS data it is necessary to liaise closely with relevant bodies who collect data on a national scale to ensure compatibility of datasets. This is a particular issue when requiring data from devolved countries. Examples of the kind of datasets that will complement the CS data include; DEFRA data on agri-environment (Topic 7) schemes, IACS data, CSL pesticide data (Topic 1), NIWT, AWI (Topic 3) and the River Habitat Survey (Topic 5).

3. Where data are spatial attempt to use a compatible or identical recording units (e.g. OS MasterMap TOIDs)

CS2000 is the first in the series to report for UK. Different statistical methodologies and classifications were used in presenting Broad Habitat information, although attempts were made to keep the datasets compatible.

Recommendations for data from outside Britain:

- Closer liaison with Northern Ireland at the outset to produce a more unified survey

- Identification of areas (partially) omitted (e.g. Isle of Man, Scilly and Channel Islands) and agreement of their omission

- Integration with Europe (EUNIS, CORINE and BioHab)

3-Devolution

There were clear communication problems in gaining access to data when dealing with Scotland. It may be because the project seems less relevant or more targeted towards (and funded by) England. For the next survey other areas of regional government, (such as Wales and the English regions) may pose similar problems. CS data are currently being investigated for use in the Countryside Quality Counts project, the data do offer potential within the project, but cannot be partitioned with sufficient confidence into individual Countryside Character Areas. CS is succeeding in giving an overview of the changing state of the British environment, there are levels of spatial interpretation below those for which CS was designed.

Recommendations:

- Raise the profile of CS as a comprehensive and holistic UK programme and encourage the different relevant authorities to buy in.

- Identify key personnel in each country/region with responsibility for communication and data transfer

- Hold some of the management meetings in the different principalities and countries.

4- Changes in protocols

Work on FOCUS revealed that certain aspects of the survey methodology may need to be refined if we are to get a more accurate picture of change in particular habitat types.

Recommendations:

Topic 1

Topic 2

- Attribute data recording needs to be modified to allow assessment of the 'favourable condition' HAP target (process ongoing in relation with HAP SG). This will include the recording of width for all linear woody boundary features so that the volume of hedgerows can be estimated.

- Hedge structure/composition/characteristics should be recorded more consistently. The relationship between information recorded and management procedures (especially of hedge bottoms) should be investigated.

Topic 3

- Consider the conversion of the mapped land parcels into OS MasterMap polygons.

- Record land management units within woodland so that internal and external dynamics can be differentiated.

Topic 4

- Evluate field recording and mapping methods to standardise and minimise the problem of defining boundaries of semi-natural vegetation

- Use mandatory coding and data validation in the field to guarantee that codes are recorded to increase the confidence in the identification of changes in habitat quality

Topic 5

- There need to be stronger ties between the freshwater survey component and CS on streamside plots and closer liaison between the two surveys pre-survey. Currently, not all stretches of river surveyed for the freshwater survey include a CS streamside plot. In addition, problems with digitising from the plot location sheets to the spatial database resulted in difficulties matching streamside plots with stretches of river. This can be overcome with changes to the methodology for collecting spatial data.

- Information for catchment areas outside the survey squares would also be valuable for interpretation.

- Additional, or more effective, collection of data on general aspects of the watercourse including; size and type of watercourse, direction of flow, management of land in streamside plot (e.g. whether it constitutes part of a buffer strip, a managed field, woodland etc.) and more effective use of photographs by using the same position as previous surveys to take the photo from where possible.

- In addition, problems with digitising from the plot location sheets to the spatial database resulted in difficulties matching streamside plots with stretches of river. This can be overcome with changes to the methodology for collecting spatial data.

Topic 6

- CS cannot to make authoritative statements about urban habitats since the predominantly urban land is not surveyed. The coding used to describe the built up component of surveyed land is also rudimentary.

- The method of mapping and coding Built up and gardens should be reviewed.

Topic 7

- Plot size to be compatible with monitoring of agri-environment schemes

5 - Training

FOCUS revealed that training of surveyors often had an effect on the data collected, with emphasis in, or away, from particular directions affecting data quality. The two week training course involved communicating a great deal of information in a short period of time which can lead to confusion. It is likely that there will be substantial changes in field recording methodology in the next survey.

Recommendations: ·

- Training should be rethought. Longer and more continuous training should involve surveyors in understanding what happens to the data when it is collected, so that they can see the underlying rationale for survey methodology and refine it pre-survey in order to minimise problems in the final dataset.

- The use of electronic data-loggers in the field will require an additional set of skills for the surveyors. The time required to train surveyors with these techniques should not be underestimated. The systems carried into the field need to be both physically and conceptually robust.

6 – *Reporting and data presentation*

FOCUS (and Countryside Survey 2000) have used different forms of dissemination including

- Paper reports
- Scientific papers
- World wide web copies of articles
- Countryside Information System
- Verbal presentations

Recommendations:

- As there is increasing emphasis on Web-based dissemination, there should be a programme of development such facilities for use in reporting and analysing the next CS.

- The proposed Web-based facilities would not replace current methods of reporting but would extend what reports and data users could obtain specific to their own requirements. For example, specific regional reporting using different elements of the data or production of CIS data sets on demand would be possible.

- The development of reports and data on demand would increase users ability to explore results from the CS survey beyond the summaries presented in published reports. This facility would need to be accompanied by the development of statistical methods capable of informing users of the level of confidence in particular results and possibly blocking lines of enquiry that are either statistically unsupportable or endanger the confidentiality of survey locations

- Such a facility should integrate with rather than duplicate the stand-alone CIS functionality. The products of particular data enquiries should be capable of export as CIS sets where they can produce statistically supportable results.

- There needs to be a long term commitment to support Web-based publication to secure access to completed reports.

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