



# SHELF EDGE STUDY DATA SET CD-ROM

The Land-Ocean Interaction Study (LOIS) Shelf Edge Study (SES) was an intensive multidisciplinary experiment undertaken on the Hebridean Slope between March 1995 and September 1996. During this time sixteen cruise legs on *RRS Charles Darwin* and *RRS Challenger* were fully dedicated to SES. Three further cruises collected significant additional SES data. An extensive moored instrument array was maintained throughout the experiment.

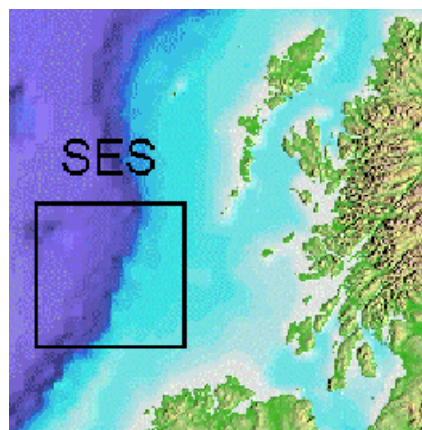
Over 95% of the data collected during these cruises have been assembled by BODC into a coherent data collection, which is presented on the LOIS (SES) Data Set CD-ROM. The data set has three major components:

- the SES Database
- the SES Underway Data Set
- the SES Moored Instrument Data Set

In addition, there is a collection of image data and a detailed bathymetric survey of the SES field area.

## SES Database Contents

>1800	CTD and SeaSoar Profiles
>100	XBT Profiles
>38000	ADCP Profiles
>2500	Water Samples (>70 Parameters Measured)
>35	Core Profiles (>160 Parameters Measured)
>800	Turbulence Profiles
>100	Sediment Trap Samples (>10 Parameters Measured]
>10	Production Experiments
>40	Marine Snow Camera Profiles
>140	Tidal Analyses
>55	Radiometer Profiles
>45	Drifting Buoy Tracks
>25	SVT Experiments



***The LOIS (SES) Field Area***

The data are accompanied by extensive documentation in PDF format and a custom-built *Windows* software interface for each of the collection's major components. The total package delivers over 1.3 gigabytes of data and software.

## The SES Database

This is a relational database that includes all of the data collected during the project with the exception of surface underway data and moored instrument data. The Database is presented in two variants of Microsoft JET format together with an ASCII 'kit form' database designed to be compatible with any database management system on any platform.

The data may be interrogated using either Microsoft Access (supplied on the CD as a run-time application) or the BODC Database Explorer software.

The 'kit-form' database comprises one file per database table in a simple comma-separated ASCII format. All fields, including internal keys, are supplied to allow the Database to be recreated with ease under any database system. Alternatively, conventional data processing applications may be written against these files.

The CD-ROM Users' Guide includes full descriptions of the data collection protocols, a specification of the Database structure and advice on how to interrogate the data.

### The SES Underway Data Set

Continuous measurements of sea surface data (temperature, salinity, attenuation, chlorophyll etc.), meteorology, navigation and bathymetry were made on 17 of the SES cruise legs every 30 seconds or 1 minute.

The data are presented on the CD-ROM in a fully documented binary format. A *Windows* program, the Underway Explorer, provides the primary interface to these data. Up to six parameters may be displayed as a stacked time series plot. The data are given spatial context through a map of the cruise track, overlain on GEBCO-97 bathymetry, which shows the data that have been plotted. Data values are displayed in a tabular format that may either be exported as ASCII or transferred to other applications over the clipboard.

The CD-ROM Users' Guide provides full descriptions of the protocols used to collect the data and a detailed specification of the format used to store the data.

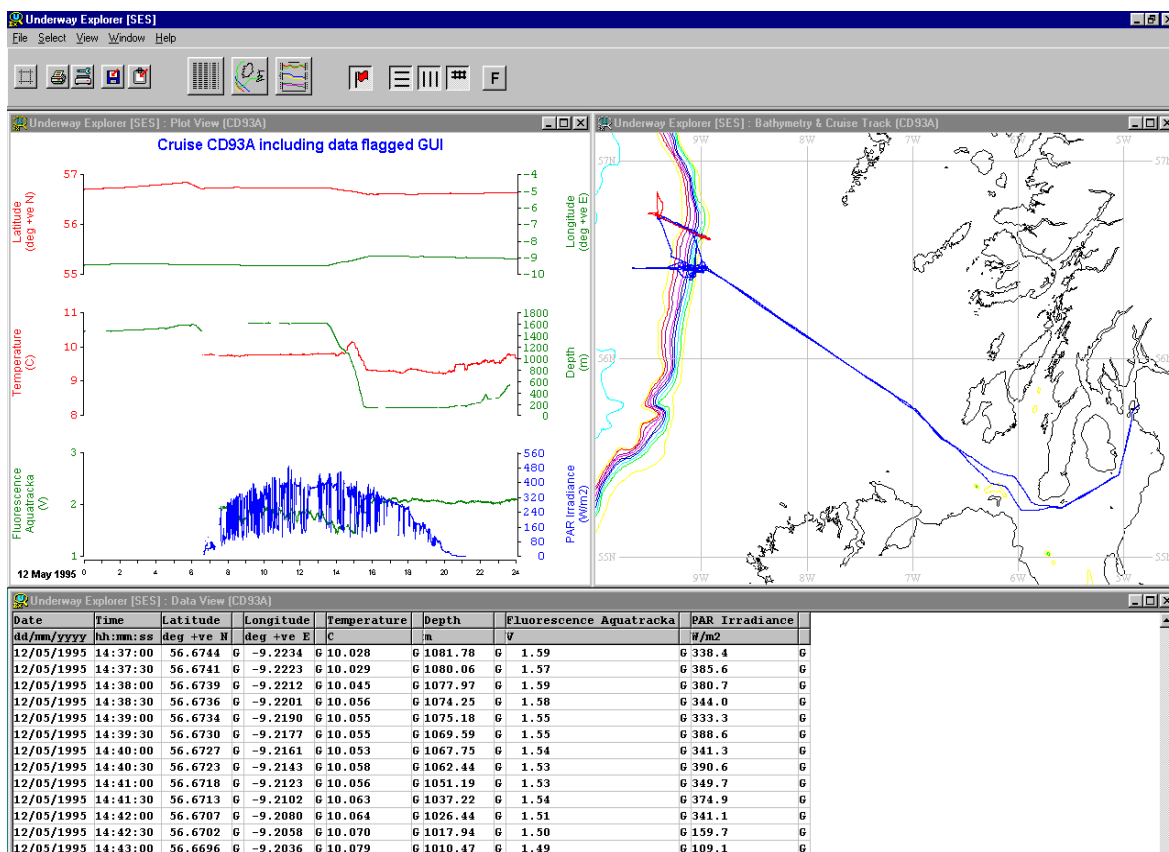
### The SES Moored Instrument Data

Instrument moorings were a major part of the SES fieldwork. Despite the losses that inevitably result from this type of work in a commercial fishery, a data set of over 250 instrument records was obtained.

#### SES Moored Instrument Data

- 102 Aanderaa Current Meter Series
- 55 Thermistor Chain Series
- 18 Fluorometer Series
- 16 Moored ADCP Series
- 16 Transmissometer records
- 15 Temperature Probe Series
- 11 Bottom Pressure Records
- 9 EM Current Meter Series
- 5 Colour Sensor Series
- 3 Meteorological Buoy Records
- 2 STABLE Deployments
- 1 Waverider Record

The data are presented on the CD-ROM as a series of files in either ASCII or, where data from multiple depths are held in a single file, NetCDF binary format. Both formats are handled transparently by



***The STABLE II lander contributed to the moored instrument data set***



the Mooring Explorer interface software. This allows the data to be displayed graphically or listed in a tabular format that may be exported to other applications via the Clipboard.

The mooring data set is indexed through either spreadsheets, included in both ASCII and Excel formats. The index is also included in the SES Database where it may be interrogated through an Access form.

In addition to the conventional time series data, high-frequency 3-dimensional current fields recorded by STABLE in burst mode are included in the data set. These are supplied as burst files in compressed ASCII.

The Users' Guide provides complete documentation on data collection and processing protocols plus descriptions of the storage formats used.

### **SES Images**

The SES CD-ROM includes three image data sets. Seafloor photographs were collected systematically on most of the SES stations. These are presented through a map-based graphical interface using *Acrobat's* hypertext capabilities. The photographs are accompanied by detailed captions describing both the biology and geology shown.



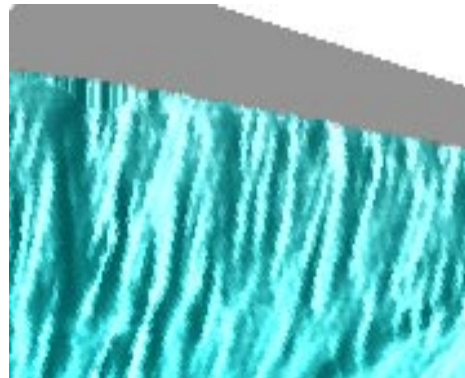
***Seafloor Photograph from the SES N140 Station***

On the first SES cruise, *Charles Darwin* CD91A, the TOBI side-scan sonar system was deployed. The resulting seafloor topographical maps are included as images on the CD-ROM.

A small number of ERS satellite synthetic aperture radar images, selected to illustrate the types of internal wave features encountered on the shelf break, form the third component of the image data set.

### **SES Bathymetry**

The SES experiment began with a detailed swath bathymetry survey to identify the most suitable mooring sites. The resulting data are included on the CD-ROM as both a grid and contour vector co-ordinates. Both files are presented in a simple ASCII format together with a contour map and 3-dimensional representation of the area surveyed.



***3-D Representation of Part of the SES Field Area***

## Related Data

The LOIS SES experiment provided a major multidisciplinary oceanographic data set from the critical boundary between shelf and open ocean. This data set has been compiled in a convenient and fully documented format on the SES Data Set CD-ROM.

The scientific value of the data set is further increased by a contemporaneous study, OMEX I, at other locations on the European Continental Margin, primarily between the Goban Spur and La Chapelle Bank. The data set from this has also been published on CD-ROM by BODC.

To obtain further details or copies of either data set please contact.



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***RRS Challenger***