

Appendix 5

End user database

Southern North Sea Sediment Transport Study, Phase 2 Sediment Transport Report

Appendix 5 End user database

1. USING THE DATABASE

The database available at the end of Phase 2 of the Southern North Sea Sediment Transport Study contains an extended dataset of information (references and datasources).

1.1 Getting Started

To search the database it is intended to operate from the version installed on CD ROM by taking the following steps:

- Insert the database CD in your CD ROM drive
- To access the files from CD, from the top **File** menu of your web browser (Internet Explorer 5.5¹) go to '**Open...**' and on the Open dialogue box click '**Browse...**'. You can then easily navigate to your CD drive.
- Opening the folder should reveal the file *SNS-DATABASEV1.6.HTML*.
- Click the **Open** button and then **OK**. The database will then load in your browser (Figure 1). You can save this address as a 'favourite' like any usual web page for future opening.

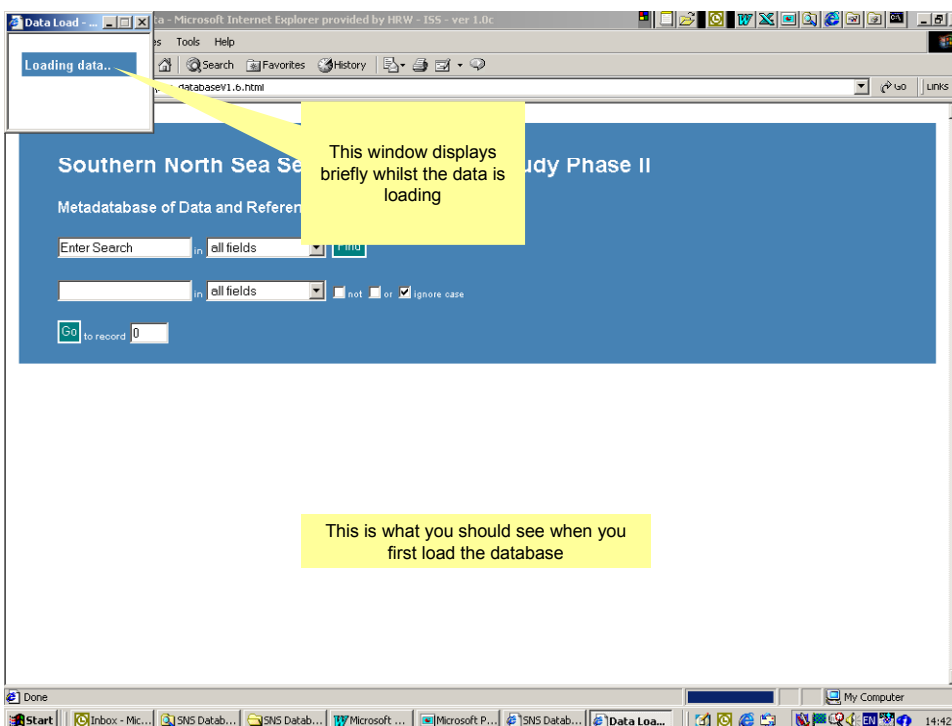


Figure 1 Opening the Database

¹ Technical specification:

Whatever web browser is used it will need to be capable of understanding XSLT, in the current study this was achieved using Internet Explorer 5.5 with the Microsoft MSXML3 parser installed. The latest version of Internet Explorer (Version 6.0) has full support for XSLT. This database is encoded in XML (Extensible Markup Language) and can be queried via an HTML (Hyper text Markup Language) interface.

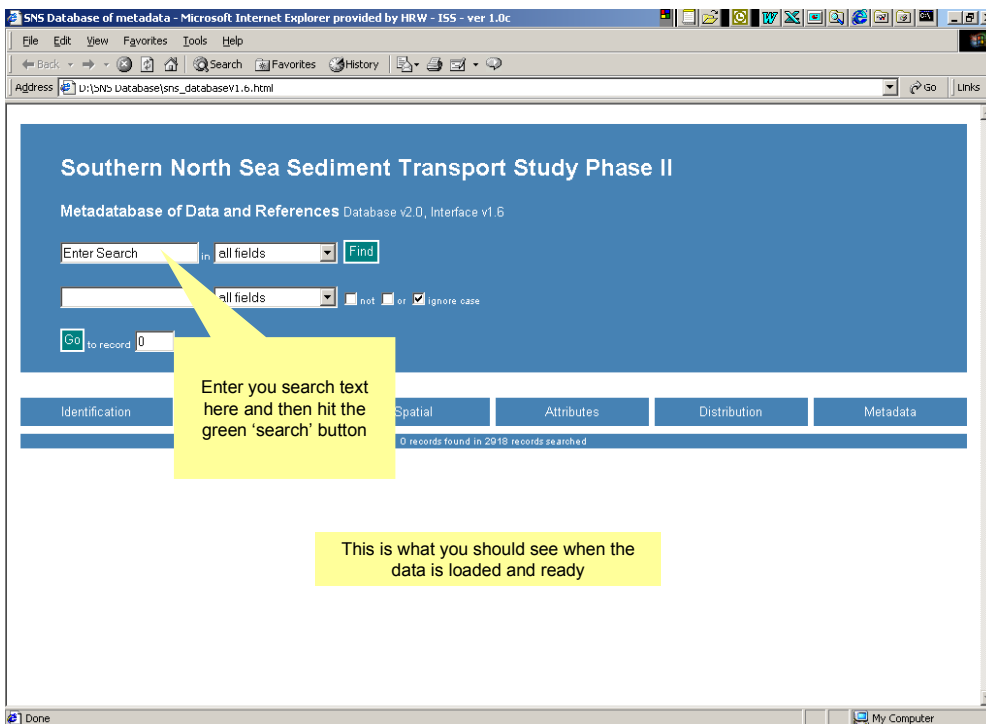


Figure 2 Ready to Use

1.2 Making a Search

The following steps are taken to define and operate the searching of the database:

- To search for a particular record you need to first enter the text string in the “Enter Text” box (Figure 1). Wild cards are implicit in the search, so searching for ‘white’ will return records containing *Whitehouse*, *Whitehead*, *whitecap*, *grey-white*. If case sensitivity was de-selected only *whitecap* and *grey-white* would be returned.
- Enter the text to search for and click the green ‘Find’ button to search the database (Figure 2).
- Results will be shown. Entering the text ‘BP’ and searching ‘Title/Author only’ will return nine records. Two of these are ‘datasets’ indicated by the ‘D’ to the left of the record number. The search can be modified by the use of boolean operators such as AND and OR, together with their negatives NAND and NOR.. For example:

Find a record where {Keywords = ‘wave’} and {author/title = ‘BP’}

Find a record where {Keywords = ‘wave’} and NOT {Keywords = ‘Humber’}

‘AND’ is the default boolean search and is used when there is a text string in the second row box preceded by a ‘+’ (Figure 4). This is changed automatically to perform NAND/OR/NOR when the check boxes for ‘AND’ and ‘OR’ are selected

- In addition the searching can be made case sensitive to return proper nouns etc. So it is possible to conduct a search of the type:

Find a record where {Keywords = ‘wave’} and {author/title = ‘Soulsby’}

Find a record where {Metadata = ‘HR Wallingford’} and {Identification = ‘currents’}

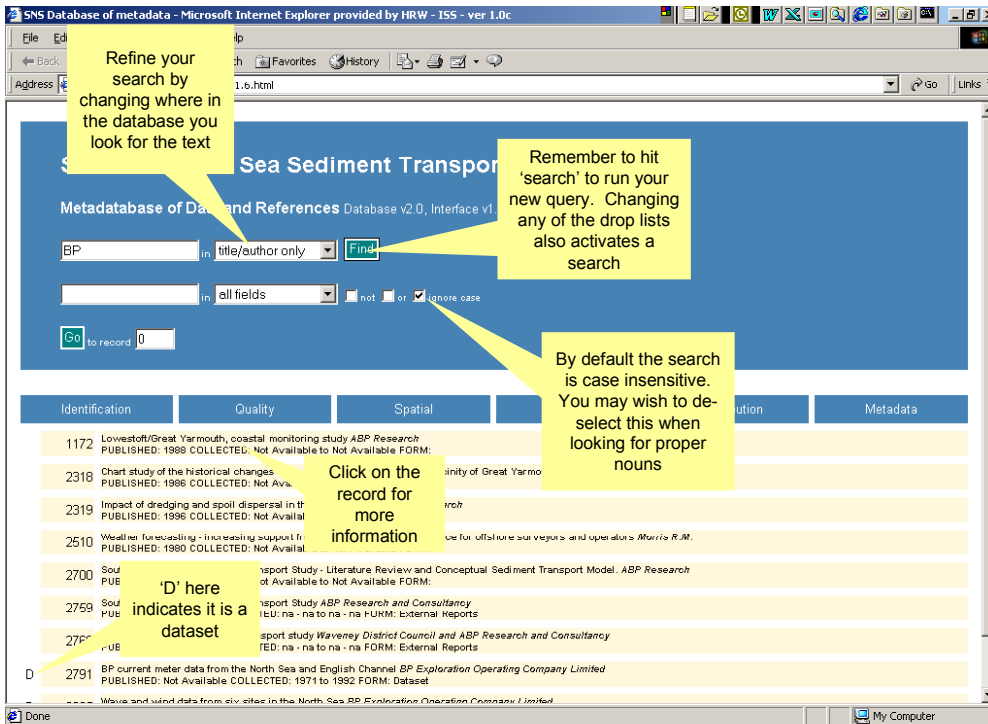


Figure 3 Searching the database

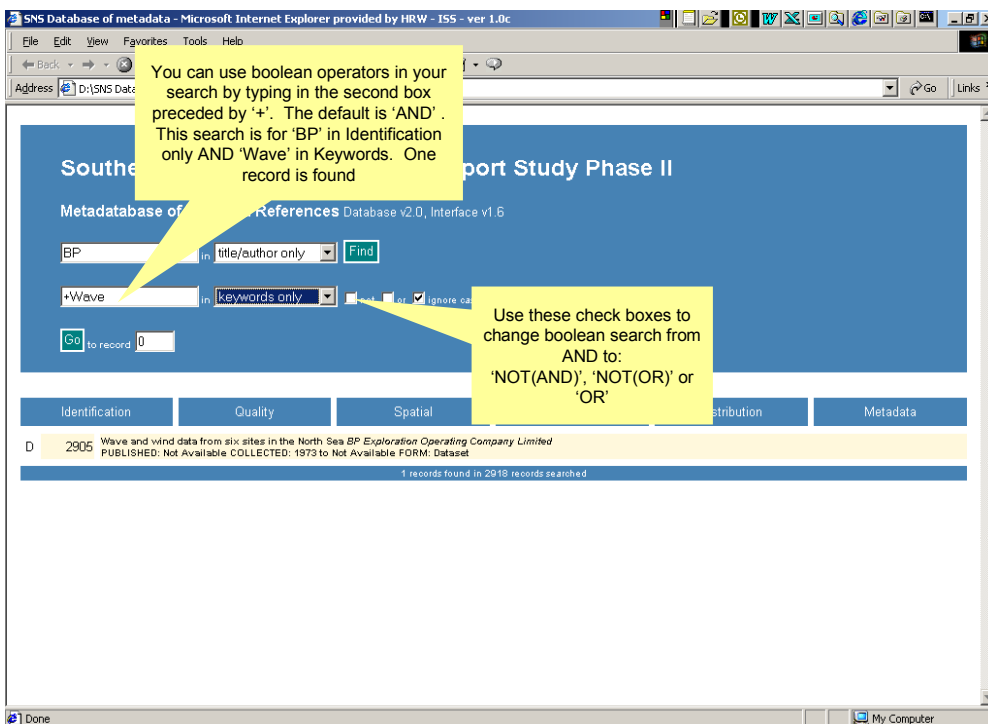


Figure 4 Making Boolean searches

1.3 Viewing, Printing and Copying/Pasting Records

From the record summary you can click on the summary to display more details (Figure 5). The details are divided into six areas;

- Identification, Quality, Spatial, Attributes, Distribution and Metadata.

These can be clicked to reveal this information (Figure 6). To return to the search summary hit the 'Find' button again or the link at the bottom of each page.

Selecting {Metadata only = 'HR Wallingford'} is a useful way of returning all records input to the database in SNS2. Selecting {Metadata only = 'ABP'} will return all records from SNS1. Extending this, Selecting {Metadata only = 'ABP'} AND {Form/Format only = 'dataset'} will return all datasets from SNS1

From the record summary you can click on the summary to display more details (Figure 6). The details are divided into six areas; Identification, Quality, Spatial, Attributes, Distribution and Metadata. These can be clicked to reveal this information (Figure 6). To return to the search summary hit the 'search' button again or the link at the bottom of each page. Not only 'Identification' and 'Metadata' information was provided for references.

The records can be printed using the 'Print' command in the Internet Explorer 'File' menu like any normal web page.

The display can also be cut and pasted from the screen into Microsoft Word if desired. To achieve this use the mouse to place the cursor over the text of interest and press the left button to locate the page of information to be copied. Next select 'Select all' from the 'Edit' menu on the toolbar, this should highlight the entire text which can then be copied 'Edit' menu, select 'Copy' and pasted into the Word document using the 'Paste' function under the 'Edit' menu. This is limited by your available memory and may not be possible for large lists of results. In this case perform the cut and paste over smaller parts of the screen.

Figure 5 Navigating the detailed information

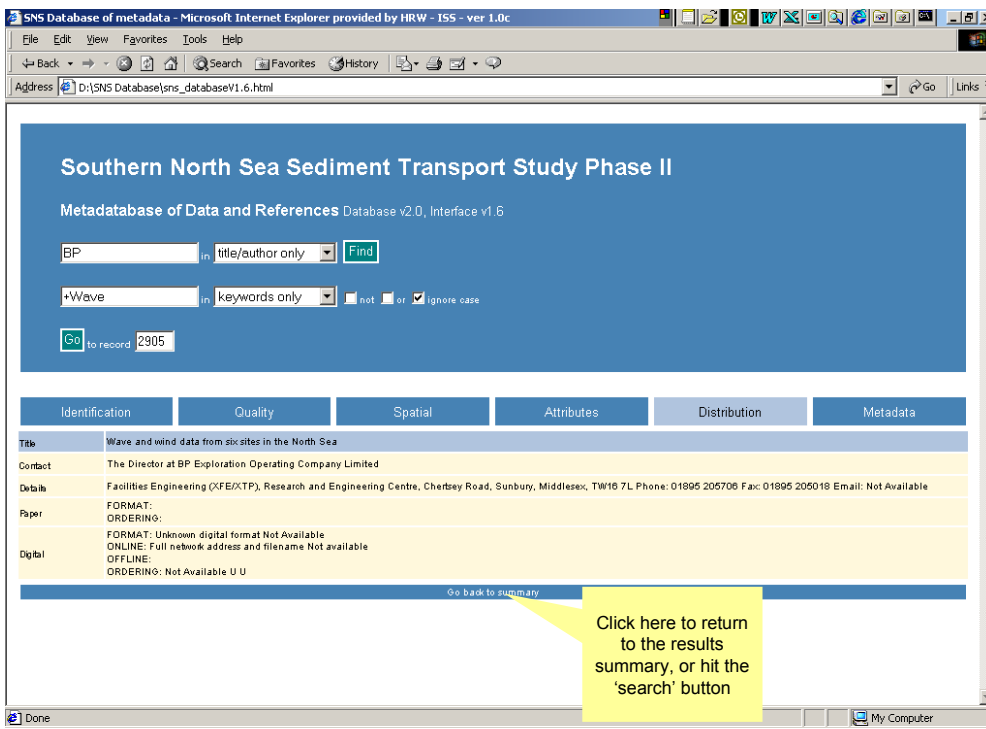


Figure 6 More detailed information

2. BACKGROUND

This report provides information on the methodology adopted to develop and update the database for the Southern North Sea Sediment Transport Study, Phase 2 (SNS2). ABP/Geodata produced a database of metadata of references and datasets relevant to the North Southern North Sea Phase 1 project (SNS1). This database was produced using Paradox and consisted of the data tables themselves with an application of query/update in the tables. Within the SNS2 study HR Wallingford proposed and executed a web-browser based version using Version 5+ of Internet Explorer (Figure 6).

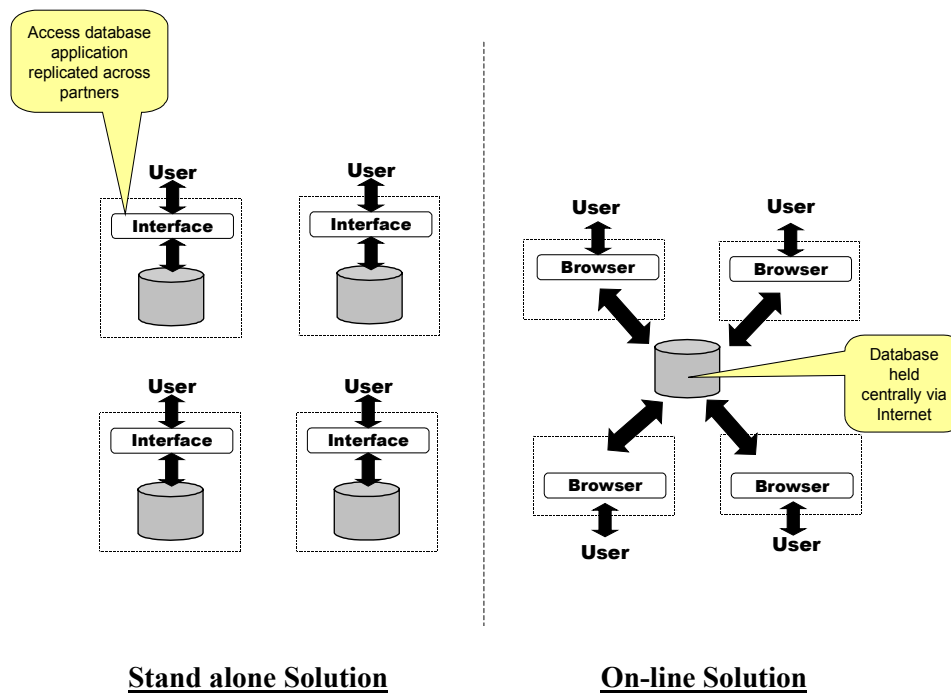


Figure 7 Database Concept

3. STANDARDS USED

3.1 Describing the Data (content metadata)

In the absence of any clear UK or European lead on standardisation for content metadata that meets the needs of the SNS2 project, the US FGDC² metadata standard was used. The elements used in FGDC also gave the closest match to the fields of the bespoke standard used in SNSI compared to other mainstream metadata standards. This accordingly facilitates upward compatibility with the description terms used in SNS1 and should enable easy translation to a UK/European standard in the future if appropriate e.g. NGDF or ISO19115.

3.2 Data Storage

As the data storage requirements for SNSII were not extensive, the data was stored as an XML (eXtensible Markup Language) file. XML is primarily a data interchange/interoperability language for Internet and is endorsed by the recent e-government Interoperability Framework (e-GIF) of the Cabinet Office. As XML is ASCII based, both humans and computers can read the raw data. It can easily be integrated into any database system for future use if needed as XML is vendor independent controlled by an international standard's committee the risk of technical obsolescence is minimised.

² Federal Geographic Data Committee

4. CONVERTING THE ORIGINAL DATABASE

The original Paradox tables was converted to Microsoft Access tables. These were subsequently converted to XML according to the FGDC metadata standard. WebPages for querying the data were then developed using a combination of JavaScript and the XML transformation language XSLT. The SNS1 database contained 139 records of datasets and 2700 records of references.

4.1 Details of Conversion

FGDC uses a number of key areas for metadata. In the conversion from the SNS1 metadata, six of these are used for describing the datasets and two of these have been used for describing the references. The mapping of the information between the metadata are summarised below

FGDC Metadata area	Example Content	Data	Refs	Notes on conversion from SNS1
Identification	Title, owner abstract, keywords, geographic area	Yes	Yes	Almost 100% of datasets have good identification information, but only about 10% of references have an abstract.
Quality	Measurement standards and processing steps applied including accuracy assessment.	Yes	No	About 5% of SNS1 records contain some quality information. Most is referred to as 'unknown'
Spatial Reference	Geographic (x,y,z) referencing used and associated resolution and datums	Yes	No	<1% of SNS1 records contain spatial reference information. Most is referred to as 'unknown'.
Attributes	Sampling period, sampling frequency, process parameters measured.	Yes	No	<1% of SNS1 records contain attribute information. Most is referred to as 'unknown'.
Distribution	How to obtain the data	Yes	No	Almost 100% of datasets have contact information for obtaining the data.
Metadata	Who compiled the metadata, when and using what standard	Yes	Yes	Almost 100% of datasets have some information about who and when the metadata was compiled

Table 1 FGDC Metadata Areas

4.2 Compiling Metadata

The FGDC metadata standard is very extensive and the official user-guide quite daunting. Accordingly, to make completing metadata records for SNS2 as straightforward as possible whilst retaining the richness of FGDC, a subset of the full standard is used. This subset uses only use the elements of FGDC that are mandatory for the FGDC standard plus non-mandatory elements only where the data is relevant for SNS2. Full details of the metadata fields used are shown below, together with an example population. The first and last column are the XML programming tags, the third column is an explanation of what is required and the second column is an example of some content,

<spref> <horizsys> <planar> <localpd> <localpgi>	10km x 10km grid area from GCPs. GCP is at (0,0) on grid X,Y distances from GCP at 53 49.73N 000 28.65E	Spatial Reference	Local system used to spatial reference the data Information to register the local plaber system to the earch e.g. GCPs	<localpd> </localpgi>
<planci> <plance>	Coordinate pair		Coordinate represnetation e.g. "Coordinate pair" "row and column"	</plance>
<coordrep> <absres> <ordres> </coordrep> <plandu> </planci> <planar> </horizsys> <vertdef> <depthsys> <depthdn> <depthres> <depthdu> <depthem> </depthsys> </vertdef> </spref> <eainfo> <detailed> <enttyp> <enttypi> <enttypd> <enttypds> </enttyp> <attr> <attrlabl> <attrdef> <attrdefs> <attrdomv> <edomv> <edomvd> <edomvds> </edomv> <rdomv> <rdommin> <rdommax>	10 10 metres Chart datum 1 metres Not Available		Resolution of abscissa Resolution of ordinate Units used of coordinate system e.g. 'metres' Depth datum used e.g. "Chart datum" Vertical resolution of measurement Units used for vertical measurements Not used in SNS	</absres> </ordres> </plandu> </depthdn> </depthres> </depthdu> </depthem>
<enttypi> <enttypd> <enttypds> </enttyp> <attr> <attrlabl> <attrdef> <attrdefs> <attrdomv> <edomv> <edomvd> <edomvds> </edomv> <rdomv> <rdommin> <rdommax>	Sampling Information Information related to temporal components of data collection Not Available	Attribute Information	Title of the entity Not used in SNS Not used in SNS	</enttypi> </enttypd> </enttypds>
<attr> <attrlabl> <attrdef> <attrdefs> <attrdomv> <edomv> <edomvd> <edomvds> </edomv> <rdomv> <rdommin> <rdommax>	Measurement Duration The duration of a survey within a measurement campaign Not Available		Title of the attribute Description of 'measurement duration' Not used in SNS	</attrlabl> </attrdef> </attrdefs>
<attrdomv> <edomv> <edomvd> <edomvds> </edomv> <rdomv> <rdommin> <rdommax>	Not Available Not Available Not Available		Not used in SNS Not used in SNS Not used in SNS	</edomv> </edomvd> </edomvds>
<attrunit> </rdomv> </attrdomv> </attr> <attr> <attrlabl> <attrdef>	10 10 minutes		Minimum value for measurement duration Maximum value for measurement duration (can equal minimum duration) Unit used for measurement duration e.g. "six months"	</rdommin> </rdommax> </attrunit>
<attr> <attrlabl> <attrdef>	Measurement Period The time between adjacent surveys (or bursts) within a measurement campaigns Not Available		Title next of the attribute Description of 'measurement period'	</attrlabl> </attrdef>
<attrdefs> <attrdomv> <edomv> <edomvd> <edomvds> </edomv> <rdomv> <rdommin> <rdommax>	Not Available Not Available Not Available		Not used in SNS Not used in SNS Not used in SNS	</attrdefs> </edomv> </edomvd> </edomvds>
<attrunit> </rdomv> </attrdomv> </attr> </detailed> <detailed> <enttyp> <enttypi> <enttypd> <enttypds> </enttyp> <attr> <attrlabl>	60 60 minutes Process Parameters Not Available Not Available		Minimum value for measurement period Maximum value for measurement period (can equal minimum period) Unit used for measurement period e.g. "hour"	</rdommin> </rdommax> </attrunit>
<attrdef> <attrdefs/> <attrdomv> <edomv> <edomvd> <edomvds> </edomv> <rdomv> <rdommin> <rdommax> <attrunit> <attrmres> </rdomv> </attrdomv> </attr>	Current speed in three dimensions (u,v,w)		Enter the name of the parameter actually measured e.g. 'wave height' or 'current speed'. This ENTIRE ROWS in this section in the black frame can be copied and pasted to add further parameters e.g. 'wave direction' or 'wave period' . Please insert the copied text directly below this section.	</attrlabl>
<attrdef> <attrdefs/> <attrdomv> <edomv> <edomvd> <edomvds> </edomv> <rdomv> <rdommin> <rdommax> <attrunit> <attrmres> </rdomv> </attrdomv> </attr>	Not Available Not Available Not Available		Not used in SNS Not used in SNS Not used in SNS	</edomv> </edomvd> </edomvds>
<attrdef> <attrdefs/> <attrdomv> <edomv> <edomvd> <edomvds> </edomv> <rdomv> <rdommin> <rdommax> <attrunit> <attrmres> </rdomv> </attrdomv> </attr>	2.5 5.4 m/s 0.1		Minimum value for measured parameter Maximum value for measured parameter Unit used for measured parameter e.g. "metres" Resolution of the measurment unit e.g. '0.1metres'	</rdommin> </rdommax> </attrunit> </attrmres>

<pre> </detailed> </eainfo> <distinfo> <distrib> <cntinfo> <cntperp> <cntper> <cntorg> </cntperp> <cntaddr> <addrtype> <address> <city> <state> <postal> <country> </cntaddr> <cntvoice> <cntfax> <cntemail> </cntinfo> <distriab> <stdorder> <nondig> <fees> <ordering> </stdorder> <stdorder> <digform> <digitinfo> <formname> <formcont> </digitinfo> <digtopt> <onlinopt> <computer> <networka> <networkr> <accinstr> </networka> </computer> </onlinopt> <digtopt> <digtopt> <offoptn> <offmedia> <recfmt> </offoptn> <digtopt> <digform> <fees> <ordering> </stdorder> </distinfo> <metainfo> <metd> <metc> <cntinfo> <cntperp> <cntper> <cntorg> </cntperp> <cntaddr> <addrtype> <address> <city> <state> <postal> <country> </cntaddr> <cntvoice> <cntfax> <cntemail> </cntinfo> </metc> <metstdn> <metstdv> </metainfo> </metadata> </snsdata> </pre>	<p>The Director Southern Sector Environmental Group</p> <p>Postal Hamilton House, Kings Road Haslemere Surrey GU27 2QA UK</p> <p>01428-656900 01428-661930 Not available</p> <p>Please contact supplier for details of liability agreements for supply</p> <p>Spiral bound report Data available free of charge Library Location</p> <p>ASCII</p> <p>Tabular time series</p> <p>ftp://data@sseg.org.uk Filename=CD031986.TXT Password="sns_user01"</p> <p>Data available free of charge Only the processed data is available from the FTP site. The original raw data is available as a special order at cost.</p> <p>30-11-2000</p> <p>Keiran Millard HR Wallingford Ltd.</p> <p>Postal Howbery Park Wallingford Oxfordshire OX10 8BA UK</p> <p>00-44-1491-822398 00-44-1491-825743 k.millard@hrwallingford.co.uk</p> <p>FGDC Content Standard for Geospatial Metadata FGDC-STD-001-1998</p>	<p>Distribution Information</p> <p>The person to contact to get the data The organisation to contact to get the data</p> <p>Type of Address Contact Address Contact City Contact County Contact postcode Contact country</p> <p>Contact phone number Contact fax number Contact email</p> <p>Statement of liability for using the data. Use standard text opposite if nothing else available</p> <p>Non-digital format Cost of purchasing data Where the report can be found</p> <p>Data format e.g. "ASCII", "Shape", "Excell Spreadsheet". If not available in digital format please enter "Hard Copy only" Description of the content of the data encoded in the format e.g. tabular time series or wave climate table</p> <p>URL for on-line access to data e.g. webpage or ftp site, Passwords and other access instructions</p> <p>CD-ROM/3.5" Floppy etc Recording format</p> <p>Cost of purchasing data Specify the type of data available, whether it is the original data or whether analysed data is available [free text]</p> <p>Metadata Information Date when the metadata was created</p> <p>Name of the person who created the metadata Name of the organisation to whom the person belongs</p> <p>Type of address Contact Address Contact City Contact County Contact postcode Contact country</p> <p>Phone number for metadata compiler Fax number for metadata compiler email for metadata compiler</p>
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Table 2 Example Metadata Record in FGDC

5. UPDATING THE DATABASE

The database is presently updated through the HRW Intranet. A series of HTML forms update a SQL database that is then exported in XML to the Internet server for view. Figure 7 shows a typical input screen.

Identification Information	
Document Information	
Author	Dyer, K.R. and Huntley, D.A. * (e.g Smith, A)
Date of publication	26 - 04 1999 * (dd-mm-yyyy e.g. 05-10-2000)
Document Title	The origin, classification and modelling of sand banks and * (full title of the document)
Document type	Periodicals * (select an item from the drop-down list)
Coverage Information	
Temporal Coverage	no - no to no - no * (mm/yyyy e.g. 19-2000)
Spatial Coverage	no N - no S - no E - no W * (N, E, S, W in Lat Long)
Publication Information	
Name of the publication	Continental Shelf Research (e.g. Journal of Coastal Report)
Publication issue number	19 (10) (volume, series number etc.)
Place of publication	Amsterdam, NL (e.g. London, UK)
Publisher	Elsevier (name of the publisher e.g. Elsevier)
Additional document information	
Abstract	Sand banks and ridges commonly form in coastal and shelf areas where there is a sufficient supply of sand and where the currents are strong enough to transport *
Purpose of the work	To classify coastal sand banks and sand ridges in order to provide a unified system for marine geologists and physical oceanographers.
Status of the document	Final/Complete * (e.g. complete, draft)

Figure 8 Updating the database

6. POST PROJECT

A number of options were considered.

- (i) The database is maintained on the HRW server under appropriate access control
- (ii) The database is installed on the client's server under appropriate access control
- (iii) The database is supplied to the client on a CD-ROM for local execution.

After discussion with the client, the final database has been supplied to the client on CD-ROM.

For more information about this database, please contact Keiran Millard at HR Wallingford (k.millard@hrwallingford.co.uk).

7. LISTING OF NEW RECORDS ADDED TO THE DATABASE:

Identification	Quality	Spatial	Attributes	Distribution	Metadata
Title	Numerical modelling of suspended sediments in coastal and estuarine waters				
Keywords	THEME: Modelling (Numerical) 50 Sediment Deposition Sediment Erosion Sediment Transport Tide Coastal Engineering, Fluid Flow, Residual Velocities LOCATION: Humber Estuary				
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S				
Description	ABSTRACT: A two dimensional numerical model previously used to predict depth averaged tidal flows has been modified to include non cohesive sediment transport processes. PURPOSE: To calibrate and validate a numerical tidal flow model that has been modified to allow the prediction of non cohesive sediment fluxes in estuarine and coastal waters.				
Reference	Falconer, R.A. and Owens, P.H. 25/10/1990 in Estuarine, Coastal and Shelf Science 31				
Status	PROGRESS: Final/Complete UPDATE:				
Constraints	ACCESS: USE:				
Title	The field assessment of effects of dumping waste at sea: 9 Dispersal and effects on benthos of sewage sludge dumped in the Thames Estuary				
Keywords	THEME: Mud Biological/chemical Measurements Current Dumping (Sea Disposal) Estuary Fauna Pollution Sediment Deposition Sediment Erosion Tide Turbidity Sewage Sludge LOCATION: Thames Estuary				
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S				
Description	ABSTRACT: Field investigations were carried out in the Thames Estuary to identify accumulations of dumped sewage sludge. Benthic faunal samples were also taken from the area to assess the environmental impact of sewage PURPOSE: To investigate the dispersion of sewage sludge at the mouth of the Thames Estuary and to determine its effects on benthic faunal communities.				
Reference	Talbot, J.W. Harvey, B.R. Eagle, R.A. and Rolfe, M.S. 11/08/1982 in Fisheries Research: Technical Report 63				
Status	PROGRESS: Final/Complete UPDATE:				
Constraints	ACCESS: USE:				
Title	Residual and tidal flow at a tidal mixing front in the North Sea				
Keywords	THEME: Measurements Instrumentation Current Mixing Oceanography Profiles Tide ADCP LOCATION: North Sea				
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S				
Description	ABSTRACT: An ADCP was used to monitor the circulation between mixed and stratified water in a frontal region of the North Sea in order to demonstrate tidal current profiles. The results showed that the tidal profiles were strongly influenced by the density structure of the water layers. The significance of the stratified and mixed water layers on tidal flow was also investigated. PURPOSE: To investigate the variability of tidal current profiles within an oceanic frontal system.				
Reference	Lwiza, K.M.M. Bowers, D.G. and Simpson, J.H. 26/02/1991 in Continental Shelf Research 11 (11)				
Status	PROGRESS: Final/Complete UPDATE:				
Constraints	ACCESS: USE:				
Title	Shape and Size Sandy Spits				
Keywords	THEME: Modelling (Numerical) Bar Bathymetry Current Geomorphology Sediment Pathway Longshore transport, Sandy Spits LOCATION: Humber				
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S				
Description	ABSTRACT: The paper presents a theoretical study into the morphology and growth rate of a spit. The study incorporates a simple one line model of coastline development. The sediment transport around the spit is investigated by two dimensional models PURPOSE: To investigate the morphological development of a coast where strong gradients or even interruption of the longshore sediment transport regime are encountered.				
Reference	Petersen, D. Deigaard, R. and Fredsoe, J. 11/06/2001 in Proceedings of Coastal Dynamics 01				
Status	PROGRESS: Final/Complete UPDATE:				
Constraints	ACCESS: USE:				
Title	Self organisational processes in beach morphology				
Keywords	THEME: Beach Measurements Coast Geomorphology Observations Coastal Evolution LOCATION: Lincolnshire USA				

Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Beach level data from the Lincolnshire and USA Atlantic coasts have been analysed to detect evidence of self organised behaviour PURPOSE: To investigate the theoretical concepts and implications of long term predictions of coastal morphology with a view to improving the design life of sea defences etc.
Reference	Southgate, H.N. and Beltram, L.M. 01/09/1996 in Proceedins of the Conference on Physics of Estuarine and Coastal Seas
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Understanding the behaviour and engineering significance of offshore and coastal sandbanks
Keywords	THEME: Bank Topography Bar Bathymetry Bedform Coast Current Geomorphology Sediment Transport idal Sandbanks LOCATION: Lincolnshire Bristol Channel
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Sand play an important part in coastal defence and hence, it is important to understand how these structures have developed and to predict how they might evolove. This paper presents the results of a study into the long, medium and short term behaviour of sandbanks and their interaction with the coastline. A classification scheme for the banks and their evolution has been determined. PURPOSE: To develop of a classification scheme for sandbanks based on their morphology, and behaviour in order to assess their role in the coastal environment
Reference	Whitehouse, R> Beech, N. Hulscher, S. and Huntley, D. 1/07/1998 in Proceedings of the 33rd MAFF Conference of River and Coastal Engineers
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Wave chronology effects on long-term shoreline erosion predictions
Keywords	THEME: Modelling (Numerical) Bathymetry Beach Measurements Coast Current Sediment Transport Wave LOCATION: East Coast
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The initial analysis of the chronology effect on critical shoreline erosion statistics using a numerical model. The results of the model show that bot short and longterm shoreline evolution was primarily dependent on the wave climate PURPOSE: To improve the prediction of shoreline evolution under waves using numerical models.
Reference	Dong, P. and Chen, H. 01/06/2001 in Journal of Waterway, Port, Coastal and Ocean Engineering 186
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Sediment deposition in offshroe deeps in the western North Sea: Questions for models
Keywords	THEME: Modelling (Numerical) Bathymetry Current Deep (Morphology) 50 Sediment Deposition Sediment Erosion Sediment Pathway Sediment Transport Sink Tide Wave LOCATION: Dogger North Sea Inner Silver Pit, Sole Pit
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A three dimensional model is used to investigate the potential for offshore bathymetric deeps in the North Sea to act as fine sediment traps. PURPOSE: To identify transport pathways in the North Sea and to assess the impact of bathymetric deeps on sediment deposition and erosion.
Reference	Proctor, R. Holt, J.T. and Balson, P.S. 10/10/2001 in Estuarine, Coastal and Shelf Science 53
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Invited Lecture: The influence of fine sediments on water quality
Keywords	THEME: Mud Modelling (Numerical) Bathymetry Current Geomorphology Pollution Sediment Deposition Sediment Erosion Sediment Transport Tide Wave Heavy Metals LOCATION: North Sea China, Hong Kong
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The transport in suspension, settlement and flocculation of clay particles has an important influence on water quality and the dispersal of micropollutants. PURPOSE: To review the processes by which fine sediments affect water quality in order to provided guidance for those responsible for protecting or modelling the aquatic environment.

Reference	Odd, N.V.M. 16/12/1998 in Proc. 2nd International Symposium on Environmental Hydraulics
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The use of Landsat imagery to map fluvial sediment discharge into coastal waters
Keywords	THEME: Current Observations River Sediment Pathway Tide Turbidity Wind Remote Sensing, Suspended Sediments LOCATION: Great Yarmouth North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The sediment discharge of the River Yare has been studied. The concentration and spatial distribution of suspended solids was determined using remote sensing techniques. The relative influences of wind velocity and tidal currents on circulation were also investigated. PURPOSE: To map the water circulation patterns at the mouth of the River Yare, based on the behaviour of suspended particles and turbidity levels.
Reference	Baban, M.J. 15/4/1995 in Marine Geology 123 (3-4)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Comparison between predicted and observed sandwaves and sand banks in the North Sea
Keywords	THEME: Bank Topography Modelling (Numerical) Bar Bathymetry Bedform Sandwaves LOCATION: North Sea Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A prediction model of regular morphological patterns on the seabed was tested against observations of sand banks and sand waves in the North Sea. Quantification of the results showed that the model was able to predict the contours of the sandwave patches, but it could not account for the absence of the bed features within this area. PURPOSE: To validate the theoretical bedform prediction model and verify the hypothesis that the large-scale seabed features are formed as free instabilities of tide-topography interactions.
Reference	Hulscher, S.J.M.H. and van den Brink, G.M. 15/04/2001 in Journal of Geophysical Research 106; C5
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The origin, classification and modelling of sand banks and ridges
Keywords	THEME: Bank Topography Headland Bar Bathymetry Bedform Delta Estuary Geomorphology Sediment Transport Tide LOCATION: Dutch Banks Southern North Sea Straits of Dover
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A descriptive classification system of sand banks is developed based upon formation processes and their present hydrodynamic setting in their long-term development. The variety of research carried out on the various bank types is also discussed. PURPOSE: To provide a classification system of sand banks in order to unify the approaches of marine geologists and physical oceanographers.
Reference	Dyer, K.R. and Huntley, D.A 26/4/1999 in Continental Shelf Research 19; 10
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Tidal asymmetry in suspended sand transport on a macrotidal intermediate beach
Keywords	THEME: Beach Measurements Instrumentation Coast Current 50 Sediment Transport Spit Tide LOCATION: North Sea Spurn Head
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Time series of nearbed horizontal flow velocities and suspended sediment concentrations were used to examine the relative importance of steady and fluctuating components to the total sediment transport over a full tidal cycle. PURPOSE: To analyse the effects of tidal asymmetry on sediment transport across a macrotidal beach.
Reference	Davidson, M.A. Russell, P.E. Huntley, D.A. and Hardisty, J. 01/01/1993 in Marine Geology 110
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Wave activity at the seabed around north-western Europe
	THEME: Instrumentation Current Sediment Transport Storm Wave

Keywords	LOCATION: Southern North Sea Celtic Sea, Irish Sea, Atlantic,
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: An investigation into the strength and duration of wave induced oscillatory currents at the seabed on the north-west European continental shelf. PURPOSE: To investigate the impact of wave induced oscillatory currents on sediment transport.
Reference	Draper, L. 01/01/1967 in Marine Geology 5
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Consideration of meteorological conditions when determining the navigational water depth over a sandwave field
Keywords	THEME: Bank Topography Bathymetry Bedform Sediment Transport Tide Wave LOCATION: Thames Estuary
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A study into the influence of large surface waves on sandwaves that are typically formed and maintained by tidal flows. PURPOSE: To investigate the redistribution of sediments around the crestal area of sandwaves in order to correctly determine safe navigational water depths through sandwave fields.
Reference	Langhorne, D.N. 01/01/1977 in International Hydrographic Review 1
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	British beach and nearshore dynamics (B-BAND) programme
Keywords	THEME: Beach Measurements Instrumentation Sediment Transport Tide Wave LOCATION: Southern North Sea Spurn Head, Llangennen, Seaton
Coverage	TEMPORAL: 06 - 1990 until 07 - 1990 SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: An investigation into small scale processes associated with nearshore dynamics on macrotidal beaches. The instrument array consisted of fast response sensors to obtain high resolution measurements of water surface elevations, horizontal current velocities and suspended sediment concentrations. PURPOSE: The main aims of the B-Band programme are To identify the specific processes producing the profile of macro-tidal beaches including the relative importance of steady flows, long waves and incident waves. To quantify net suspended load sediment transport rates using fast response sensors to measure the rapidly varying conditions under nearshore waves. The results of the field experiments will then be used to validate and improve existing sediment transport models.
Reference	Russel, P. Davidson, M. Huntley, D. Cramp, A. Hardisty, J. and Lloyd, G. 01/06/1991 in Coastal Sediments 1991
Status	PROGRESS:Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Some boundary layer characteristics of tidal currents bearing sand in suspension
Keywords	THEME: Bank Topography Bedform Gravel Measurements Sediment Transport Tide Suspended sediment, Velocity profiles LOCATION: Southern North Sea English Channel
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A study into the velocity profiles and suspended sediment concentrations above two large banks during a tidal cycle. The amount of material in suspension was found to have an effect on the velocity distributions. PURPOSE: To investigate the near bed structure of tidal flows and its influence on suspended sediment transport.
Reference	McCave, I.N. 01/01/1973 in Memoires Societ�oyale des Sciences de Liege 6ieme s�e, book VI
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Rhythmic linear sand bodies caused by tidal currents
Keywords	THEME: Bank Topography Bathymetry Bedform Current Oil 50 Sediment Transport Tide LOCATION: Southern North Sea Gulf of Korea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Two types of large scale sand bedforms were identified in areas of strong tidal currents. Tidal current ridges are orientated parallel to the flow direction and vary between 25-100 feet in height and 5-40 miles in length. These ridges are generally present wherever tidal current velocities range between 1 and 5 knots and where there is an adequate supply of sediments. The second type of bedforms are sandwaves. These are large ripples (up to 25 feet high) that are orientated

	perpendicular to the flow direction. PURPOSE: To investigate the deposition of sand in an environment characterised by strong tidal currents in both present day and relict marine sediments and its potential influence on oil exploration
Reference	Off, T. 01/02/1963 in Bulletin of the American Association of Petroleum Geologists 47 (2)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	A pattern of sediment transport for sea floors around southern Britain
Keywords	THEME: Bank Topography Bathymetry Bedform Current 50 Sediment Pathway Sediment Transport Tide Bedform orientation LOCATION: Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The pattern of sediment transport is inferred from the orientation and shape of sandwaves in the southern North Sea, PURPOSE: To derive a pattern of sediment transport for the southern North Sea.
Reference	Stride, A.H. 01/09/1959 in Dock and Harbour Authority 40
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	A statistical-dynamical method for predicting long term coastal evolution
Keywords	THEME: Modelling (Numerical) Geomorphology Long term prediction LOCATION: East Coast Great Yarmouth Lowestoft Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The cumulative effect of historical shoreline processes is inferred by inverting an extended form of one line equation. The results of the inversion are used to predict future coastal evolution on the basis of past historical change. PURPOSE: To provide a new approach to the problem of predicting long term coastal evolution
Reference	Reeve, D.E. and Fleming, C.A. 01/01/1997 in Coastal Engineering 30
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Eigenfunction analysis of Decadal fluctuations in sandbank morphology at Great Yarmouth
Keywords	THEME: Bank Topography GIS, Strategic management, coastal morphology LOCATION: Great Yarmouth
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: EOF techniques are applied to a series of historical bathymetric surveys of a nearshore sandbank system in order to investigate their long term morphological behaviour. GIS techniques were used to create digital models of the seabed from historic survey data. Trends or cyclic behaviour of the banks were identified using EOF and GIS analysis PURPOSE: To identify long term trends and changes in gross sandbank configuration and to determine their significance for coastal management practice.
Reference	Reeve, D.E. Li, B. and Thurston, N. 01/04/2001 in Journal of Coastal Research 17 (2)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Beach profiles at Gorleston and Great Yarmouth
Keywords	THEME: Beach Coast Geomorphology Profiles Sediment Volume Surveys Eigenfunction analysis LOCATION: Great Yarmouth Gorleston
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Eigenfunction analysis is applied to beach profile data from Gorleston and Great Yarmouth. Three basic eigenfunctions are used to describe the beach in space and time. The results of this analysis suggest that whilst the beach at Great Yarmouth appears to have remained stable over time, the beach at Gorleston has undergone significant changes. The difference between the two beaches may be due in part to the breakwaters at the mouth of the River Yare. PURPOSE:
Reference	Aranuvachapun, S. and Johnson, J.A 01/03/1979 in Coastal Engineering 2
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:

Title	Long-term morphological variations of a sandbank system
Keywords	THEME: Bank Topography Bathymetry Coastal Engineering, Statistical Analysis, Sea Defences LOCATION: Great Yarmouth Lowestoft
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Eigenfunction analysis has been carried out on historical bathymetric surveys of a nearshore sandbank system. The results provide evidence of quasi-periodic variations in sandbank morphology that are significant to coastal planning issues. PURPOSE: To provide an understanding of long term changes in nearshore coastal morphology in order to improve coastal management strategies.
Reference	Reeve, D.E. Le, B. and Fleming, C.A. 01/03/2001 in Water and Maritime Engineering 148 (paper 12206)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The old coastline of the Wash
Keywords	THEME: Headland Bathymetry Coast Current Estuary Geomorphology Mudflat Observations Reclamation Sediment Transport Tide LOCATION: Wash (The)
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The shores of the Wash are continually advancing seawards. Much additional reclamation work has also been undertaken. Research has been carried out by HR Wallingford to determine if the natural build up of land in this area is an exceptional phenomenon. PURPOSE: This work formed part of a larger scale study into the transport of sands and silts and the processes responsible for erosion and accretion in estuaries.
Reference	Kestner, F.J.T. 25/01/1963 in New Scientist 15
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The old coastline of the Wash
Keywords	THEME: Headland Bathymetry Coast Current Estuary Geomorphology Mudflat Observations Reclamation Sediment Transport Tide LOCATION: Wash (The)
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Description	ABSTRACT: The shores of the Wash are continually advancing seawards. Much additional reclamation work has also been undertaken. Research has been carried out by HR Wallingford to determine if the natural build up of land in this area is an exceptional phenomenon. PURPOSE: This work formed part of a larger scale study into the transport of sands and silts and the processes responsible for erosion and accretion in estuaries.
Reference	Kestner, F.J.T. 25/01/1963 in New Scientist 15
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Tidal sand movement between some linear sand banks in the North Sea of northeast Norfolk
Keywords	THEME: Bank Topography Bedform Current Sediment Transport Surveys Tide Sand waves LOCATION: Norfolk Banks Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Sand wave and current data for the linear sand banks off the Norfolk coast indicate a northerly flow of sand on the western side of the banks and southerly flow on the eastern side. The net direction is indicated by the steepest slope of the bank. The mechanisms of sand movement around and between the banks are discussed. PURPOSE:
Reference	Caston, V.N.D. and Stride, A.H. 10/09/1970 in Marine Geology 9
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Shoreline change and fine grained sediment input: Isle of Sheppey Coast, Thames Estuary, UK
Keywords	THEME: Mud Cliff Climate Coastal Works Current Estuary Mudflat Sediment Pathway Sediment Transport Sink Tide Water Level Sea level rise, Fine grained sediments LOCATION: Southern North Sea Thames Estuary Isle of Sheppey
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S

Description	ABSTRACT: The eroding cliffs of the Isle of Sheppey supply 450000ta-1 of fine grained sediments to the southern North Sea. The sinks for this material are likely to be the Essex and Kent estuaries and marshes. In view of rising sea level it is important to maintain this supply of sediments. Therefore, shoreline and estuarine management strategies should take into account the scale of fine grained sediment supply and its transport pathways. PURPOSE: To provide an understanding of how silt and clays are transported in suspension around the North Sea.
Reference	Nicholls, R.J. Dredge, A. and Wilson, T. 01/06/2000 in Coastal and Estuarine Environments: Sedimentology, Geomorphology and Geoarchaeology Geological Society Special Publications 175
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	A 2DH numerical model of tidally induced sand transport in the southern North Sea
Keywords	THEME: Modelling (Numerical) Bathymetry 50 Sediment Deposition Sediment Erosion Sediment Pathway Sediment Transport Sink Tide LOCATION: Cromer German Bight Southern North Sea Straits of Dover
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This paper presents the results of a numerical model simulating tidally induced large-scale sand transport and erosion/deposition processes in the Southern North Sea PURPOSE: To establish and validate the numerical model and to predict sand transport pathways and highlight areas of accretion and erosion in the North Sea.
Reference	Van der Molen, J. 01/01/2000 in Interactions between Estuaries and Coastal and Shelf Seas
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Holocene tidal conditions and tide induced sand transport in the southern North Sea
Keywords	THEME: Modelling (Numerical) Bathymetry Current Sediment Deposition Sediment Erosion Sediment Pathway Sediment Transport Sediment Volume Surveys Tide Palaeobathymetry LOCATION: Dutch Coast Southern North Sea Belgian Coast
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A numerical model of Holocene tides and sand transport in the North Sea was used to establish potential sand transport patterns and to calculate the sand budget for the Dutch and Belgian coasts. The net tidal sand transport direction has undergone significant changes during the past 10000 years as have the patterns of erosion and accretion in the southern Bight of the North Sea. PURPOSE: To validate an historical tidal sand transport model and to illustrate the importance of isostatic rebound for constructing palaeobathymetries
Reference	Van der Molen, J. and de Swart, H.E. 08/08/2001 in Journal of Geophysical Research
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The influence of tides, wind, waves, and sand transport in the southern North Sea
Keywords	THEME: Modelling (Numerical) Bathymetry Coast Current Sediment Deposition Sediment Erosion Sediment Pathway Sediment Transport Sediment Volume Sink Tide Wave LOCATION: Dogger Dutch Coast East Coast German Bight Southern North Sea Wash (The)
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The influence of wind driven flow and wind waves on sand transport is poorly understood. The impact of these processes are assessed for the southern North Sea using a numerical flow model, a parametric wave model and wave averaged sand transport formulation. The individual forcing parameters are presented in various combinations to identify the dominant transport mechanisms. The results show that the dominant forces responsible for generating sand transport vary according to location. PURPOSE: To identify the processes by which sediment is transported onto the coast and how and why this supply has changed over time.
Reference	van der Molen, J. 04/02/2001 in Continental Shelf Research Special Issue
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The evolution of the Dutch and Belgian coasts and the role of sand supply from the North Sea
Keywords	THEME: Modelling (Numerical) Coast 50 Sediment Deposition Sediment Erosion Sediment Transport Tide Wave Wind Coastal evolution, Holocene LOCATION: Dutch Coast Southern North Sea Belgian Coast
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
	ABSTRACT: This study compares the results of numerical model calculations of historical tide and wave induced sand transport in the southern North Sea with information on the evolution of the Dutch and Belgian coasts. An integrated conceptual model of the Holocene evolution of the Dutch and Belgian coasts is proposed with the large scale evolutionary processes interpreted in terms of

Description	oceanographic forcing mechanisms. PURPOSE: To validate a conceptual numerical model in order to investigate the importance of sand supply from the North Sea to the evolution of the Dutch and Belgian coasts
Reference	van der Molen, J. and van Dijk, B. 01/06/2000 in Global and Planetary Change 27
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Holocene wave conditions and wave induced sand transport in the southern North Sea
Keywords	THEME: Modelling (Numerical) Coast Current 50 Sediment Pathway Sediment Transport Tide Wave Wind Holocene LOCATION: Dutch Coast Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Results are presented of modelled wind-wave conditions, wave induced bottom orbital velocities and wave induced sand transport magnitudes and directions. The model is applied to both present day and palaeo situations throughout the Holocene. The results show that bottom orbital velocities are sufficient to instigate sand transport over large areas of the North Sea and that sand transport patterns have changed over geological time as a result of changing basin geometry and sea level rise. The model also reveals changes in the dominant modes of transport and identifies areas of erosion and accretion. PURPOSE: The main aims of the study are to determine the contribution of wind waves to large scale, long term sand transport and to determine the dominant transport pathways and relative magnitudes
Reference	van der Molen, J. and de Swart, H.E. 07/03/2001 in Continental Shelf Research
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Potential gain and loss of sand bt some sand banks in the south Bight of the North Sea
Keywords	THEME: Bank Topography Bathymetry Bedform Measurements Instrumentation Sediment Deposition Sediment Erosion Sediment Pathway Sediment Transport Sand waves LOCATION: Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: An echosounding and side scan sonar survey of the Southern North Sea has shown that sand banks may be used as indicators of net sand transport direction. The asymmetry of the sand waves that form at either end of the banks imply that sand is deposited at the head of the bank and lost from the tail. There is however no evidence for closed circulation systems around the banks. PURPOSE:
Reference	Caston, G.F. 01/01/1980 in Marine Geology 41
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Sand bodies and sand transport paths at the English Channel- North Sea border:morphology, hydrodynamics and radioactive tracing.
Keywords	THEME: Bedform Measurements Current Geomorphology 50 Sediment Pathway Sediment Transport Surveys Tide Radioactive tracers, Sand wave LOCATION: Southern North Sea Straits of Dover
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The surficial sediments and detailed submarine morphology of the English Channel - North Sea border have been mapped using a variety of techniques. Additionally, current metre data and radioactive tracing experiments were used to identify sediment transport pathways and rates. The dominant transport regimes may be divided into: a northern domain where sand is transported southwards into the English Channel and a narrow coastal domain from which sand is transported northwards from the English Channel into the North Sea. The strong tidal currents in the region are thought to be responsible for much of the sand transport. PURPOSE: To investigate sand transport pathways, sediment exchange and tidal circulation at the English Channel-North Sea border
Reference	Beck, C. Clabaut, P. Dewez, S. Vicaire, O. Chamley, H. Augris, C. Hoslin, R. and Caillot, A. 01/01/1991 in Oceanological Acta 11
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Sand bodies and sand transport paths at the English Channel- North Sea border:morphology, hydrodynamics and radioactive tracing.
Keywords	THEME: Bedform Measurements Current Geomorphology 50 Sediment Pathway Sediment Transport Surveys Tide Radioactive tracers, Sand wave LOCATION: Southern North Sea Straits of Dover
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The surficial sediments and detailed submarine morphology of the English Channel - North Sea border have been mapped using a variety of techniques. Additionally, current metre data and radioactive tracing experiments were used to identify sediment transport pathways and rates. The dominant transport regimes may be divided into: a northern domain where sand is transported southwards into the English Channel and a narrow coastal domain from which sand is transported northwards from the

Description	English Channel into the North Sea. The strong tidal currents in the region are thought to be responsible for much of the sand transport. PURPOSE: To investigate sand transport pathways, sediment exchange and tidal circulation at the English Channel-North Sea border
Reference	Beck, C. Clabaut, P. Dewez, S. Vicaire, O. Chamley, H. Augris, C. Hoslin, R. and Caillot, A. 01/01/1991 in Oceanological Acta 11
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The supply and circulation of silt in the Wash
Keywords	THEME: Mud Bar Coastal Works Current Estuary Mudflat Saltmarsh Sediment Deposition Sediment Erosion Sediment Pathway Tide LOCATION: Wash (The)
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Engineering works carried out in the Wash between 1650 and the 19th century led to the extensive build up of new mud flats around the existing permanent salt marsh. This paper focusses on the very large supplies of suspended silt required for the observed accretion and attempts to identify possible sources of this material. By tracking the suspended sediment load on the ebb and flood tide and obtaining particle diameters, the supply was traced to a belt of unstable mudflats around the foreshore of the wash. The area appears to undergo alternating cycles of erosion and accretion. During periods of erosion, sediments are supplied to the saltmarsh. It is hypothesised that by consolidating the total supply of suitable material into a new saltmarsh, it may help to increase the stability of the coastal zone and to protect the hinterland from flooding for the foreseeable future. PURPOSE:
Reference	Kestner, F. J. T. 01/01/1963 in IAHR Congress
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Uncertainties in sediment inputs from coastal erosion
Keywords	THEME: Sediment Erosion Sediment Input Sediment Source LOCATION: North Sea Straits of Dover
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Calculations of long term coastal sediment inputs often ignores key elements such as shoreface erosion below mean sea level. This source is responsible for almost half the total volume of sediments supplied from the coastal zone. The results of this study suggest that in order to improve both historic and future sediment budget calculations, a better understanding of shoreface evolution and the composition of eroded material is required. PURPOSE: To highlight important issues which are often ignored during sediment flux calculations, often causing potential errors of over 20%.
Reference	Hanson, S. and Nicholls, R. J. 11/06/2001 in Proceedings of Coastal Dynamics 01
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Longshore sand transport rates - a simple model for the East Anglian coastline
Keywords	THEME: Modelling (Numerical) Beach Coast Geomorphology 50 Sediment Transport Wave Wind LOCATION: East Coast East Anglia
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A model has been developed for the East Anglian coast which predicts the potential longshore sand transport rates for 7 discreet stretches of coastline. The model is based on wave refraction analysis and wave energy spectra. Potential transport rates were compared with the results of cliff erosion studies and beach profile data and were found to agree well except in locations where the beaches were predominantly shingle. PURPOSE:
Reference	Vincent, C.E. 01/08/1979 in Coastal Engineering 3
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Water and sediment movement in the vicinity of linear sandbanks: the Norfolk Banks, southern North Sea
Keywords	THEME: Bank Topography Bathymetry Bedform Measurements Instrumentation Current Geomorphology 50 Sediment Pathway Sediment Transport Storm Surveys Tide Wave Fluorescent tracer LOCATION: Norfolk Banks Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A variety of survey techniques were carried out in the vicinity of the Broken Bank in order to identify localised and regional patterns of water and sediment movement. The results confirm previously proposed mechanisms for sandbank growth. On a regional level, tracer dispersion, residual currents and bedform asymmetries indicate an offshore sediment transport component that may persist under tidally dominated conditions as opposed to solely under wave dominated storm conditions. PURPOSE: To identify sediment transport pathways around linear sandbanks in an attempt to explain the mechanisms behind the

	formation and maintenance of these bedforms
Reference	Collins, M.B. Shimwell, S. J. Gao, S. Powell, H. Hewitson, C. and Taylor, J. A. 25/01/1995 in Marine Geology 123
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Sand ribbons of European tidal seas
Keywords	THEME: Bathymetry Bedform Current Geomorphology 50 Sediment Deposition LOCATION: East Coast British Isles
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Sand ribbons of up to 15km in length are orientated parallel to the bedload transport paths of tidal currents around most of the coastal seas of the British Isles. These ribbons have been classified into 4 categories according to their form which is related to tidal current velocity and sediment supply. Sand ribbon fields are often made up of shelly sand. Shell debris also tends to accumulate in the troughs between the ribbons. PURPOSE: To classify the different types of sand ribbon in order to identify the different hydrodynamic regimes in which they may form.
Reference	Kenyon, N. H. 01/01/1970 in Marine Geology 9
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Indications of long term, tidal control of net sand loss or gain by European coasts
Keywords	THEME: Bank Topography Bathymetry Bedform 50 Sediment Pathway Sediment Transport Tide LOCATION: North Sea Bristol Channel, Irish Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Linear sand bodies, orientated parallel with the main tidal flow are common in European shelf waters. The relative gradient of each side of the bank corresponds to the rotation of the tidal current vectors in relation to the direction of net sand transport. These findings may help to identify stretches of coastline which are likely to be subject to sand loss or gain from the offshore zone. PURPOSE: To relate the cross sectional asymmetry of linear sandbanks to sand transport direction with a view to using sedimentary bedforms as indicators of sediment transport under tidal currents.
Reference	Stride, A.H. 01/01/1974 in Estuarine and Coastal Marine Science 2
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The Meiobenthos of subtidal sandbanks on the Belgian continental shelf (Southern Bight of the North Sea)
Keywords	THEME: Sample 50 Sandbanks, Meiobenthos, LOCATION: Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The Belgian continental shelf is characterized by sets of isolated sandbank systems. The meiobenthos of the Flemish Banks, the Hinder Banks and the Zeeland Banks have been sampled. Whilst no obvious differences in sedimentological characteristics could be detected between the three sites, the meiobenthic communities showed much higher variability. This spatial variability may be linked to hydrodynamic parameters such as current speeds across the banks or differences between onshore/offshore water quality affecting primary production. At community level, the meiobenthic fauna seems to be influenced by local differences in sedimentological characteristics within the sandbank systems as opposed to geographical location. PURPOSE:
Reference	Vanaverbeke, J. Gheskiere, T. And Vincx, M. 28/08/2000 in Estuarine, Coastal and Shelf Science 51
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Prospectors for sand and gravel
Keywords	THEME: Bathymetry Bedform Gravel Measurements Dredging Geomorphology Sediment Cores Aggregate extraction LOCATION: North Sea Chesil Beach, West Bay
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: With a sound knowledge of superficial unconsolidated sediments on the continental shelf, geomorphologists may play the role of prospectors to the aggregate industry. An understanding of the processes which created these deposits also allows geomorphologists to predict the effects of aggregate extraction. PURPOSE:
Reference	Jolliffe, I.P. and McLellan, A. G. 01/01/1980 in Geographical Magazine 65
Status	PROGRESS: Final/Complete UPDATE:
	ACCESS:

Constraints	USE:
Title	Hydrodynamics and sediment dynamics of The Wash embayment, eastern England
Keywords	THEME: Bathymetry Measurements Current Deep (Morphology) Geomorphology Mudflat 50 Sediment Deposition Sediment Pathway Sediment Transport Surveys Tide Suspended sediments LOCATION: Wash (The)
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Water and sediment movement in The Wash Embayment have been determined from tidal current and suspended sediment concentration measurements. The central deep water area is dominated by a residual landward water movement whilst at the periphery, the residual movement is seawards. Suspended sediment pathways are coincident with the spring tidal streams and the majority of suspended sediment is supplied from the North. Bedload sediment supply is of lesser importance. Whilst suspended sediment movements are dominant throughout the embayment, bedload transport is important in bedform formation. PURPOSE: To provide an understanding of water and sediment movements within a tidal embayment and to identify the sources of sediments deposited on the intertidal mudflats within The Wash.
Reference	Ke, X. Evans, G. and Collins, M.B. 01/06/1996 in Sedimentology 43
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Spurn Head: Its history and evolution
Keywords	THEME: Headland Bar Bathymetry Gravel Coast Geomorphology Sediment Deposition Sediment Transport Spit Tide LOCATION: Humber Spurn Head
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Spurn Head is a recurved sand and shingle spit which extends southwards across the mouth of the Humber estuary. This paper discusses the formation of Spurn Head and its evolution through time to its present state. PURPOSE:
Reference	de Boer, G. 01/06/1964 in Transactions of the Institute of British Geographers 34
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The morphology of the Anglian Coast
Keywords	THEME: Bank Topography Bathymetry Beach Bedform Coast Estuary Geomorphology Sediment Transport LOCATION: East Coast Flamborough Head Humber Norfolk North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The morphology of the Anglian coast consists of three Integrated Scale Coastal Evolution units. These are: a bay extending from Flamborough to Cromer which was formed in response to north easterly extreme wave events; a series of offshore banks extending from Suffolk to Norfolk that were formed during south easterly extreme wave events and the various estuaries situated along the Anglian coast in which both local and external sediment sources play a part in coastal evolution. A better understanding of these ISCE units is necessary in order to provide long term solutions to coastal management problems. PURPOSE:
Reference	Pethick, J. and Leggett, D. 01/01/1994 in Southern North Sea Coastlines
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Sand waves and sediment transport around the end of a tidal sandbank
Keywords	THEME: Bank Topography Bathymetry Bedform Geomorphology Observations Sediment Erosion Sediment Pathway Sediment Transport Surveys Tide LOCATION: East Coast Southern North Sea Haisborough Sand
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Detailed surveys of the Haisborough Sand have revealed asymmetrical sand waves on both sides of the bank which indicate a general direction of sand transport. Superimposed mega-ripples provide evidence of cross bank transport. An area of symmetrical sand waves between the north-westerly and south-easterly facing ones on the tip of the bank indicates the route by which sand travels round the ends of the bank. Sediment textural parameters support the theory that sand is eroded from the foot of the bank on both sides and transported to the middle. The surveys revealed an overall net transport from south to north. PURPOSE:
Reference	McCave, I. N. and Langhorne, D. N. 01/06/1982 in Sedimentology 29
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The effects of sediment transport on grain-size distributions

Keywords	THEME: Modelling (Numerical) Bathymetry Geomorphology 50 Sediment Transport LOCATION: Clacton USA
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This paper presents a simple model by where the distributions of sediment in transport are related to their source by a sediment transfer function. This defines the relative probability that a grain within each particular class interval will be eroded and transported. The model was tested in a variety of environments for which transport direction was known and was found to accurately predict the likely transport direction. PURPOSE: To validate a grain size trend analysis model.
Reference	McLaren, P. and Bowles, D. 04/07/1985 in Journal of Sedimentary Petrology 55 (4)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Longshore variation of grain size distribution along the coast of the Rhone delta, southern France: A test of the 'McLaren model'
Keywords	THEME: Modelling (Numerical) Beach Measurements Sample 50 Sediment Transport LOCATION: Clacton Rhone delta
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Beachface samples from the Rhone delta were analysed to assess the application of the McLaren sediment transport model. According to this model successive sediment samples should become either coarser or better sorted in the direction of longshore transport. However, the results of the analysis showed the opposite trends for the Rhone delta sediments. This was mainly due to the fact that several assumptions used in the model are not valid in the nearshore environment. Therefore the use of the model in determining transport paths in the nearshore zone is limited. PURPOSE: To validate the McLaren sediment transport model and to assess its performance in the nearshore zone.
Reference	Masselink, G. 01/04/1992 in Journal of Coastal Research 8 (2)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The Anglian sea defence management study - stage iii: Field survey report vol. 3 - Estuary sediment trends
Keywords	THEME: Mud Bathymetry Beach Measurements Coast Current Estuary Geomorphology Sediment Pathway Sediment Transport Tide LOCATION: East Coast Holderness Humber Humber Estuary Lincolnshire Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The sediments found within the Humber estuary fall into four distinct facies: sand, mud, bimodal and multimodal deposits. A sediment trend analysis was performed on each individual deposit. The trends of all bar the multimodal sediments indicated similar transport patterns. Two distinct circulatory systems characterise the upper and central estuary and the resulting patterns agrees largely with the tidal current residuals. A relationship was also discovered between the beach sediments of Spurn Head and The Binks. It was not possible to identify a link between the sediments of the Holderness coast with those of the Lincolnshire coastline. PURPOSE:
Reference	Sir William Halcrow and Partners Ltd 01/05/1990 in
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Sediment fluxes perpendicular and parallel to the Holderness coast using advanced near bed measuring systems - tetrapods and minipod
Keywords	THEME: Bathymetry Measurements Instrumentation Current Geomorphology Observations Sediment Transport Storm Surveys LOCATION: Holderness
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: An experiment to estimate the sediment fluxes perpendicular and parallel to the Holderness coastline was carried out. Two lines of instruments were installed, including tetrapod, waverider buoys, and bottom landers. The latter were intended to measure near bed fluxes. The northern line of instruments was intended to measure fluxes perpendicular to the coast whilst the southern line was designed to measure parallel fluxes. PURPOSE: To gain an understanding of the fluxes of material from the land to the sea and to observe the perpendicular and parallel fluxes of material off the Holderness coast during storm conditions.
Reference	Rees, J. 05/07/1995 in 30th MAFF Conference of River and Coastal Engineers
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The Humber observatory: Monitoring, modelling and management for the coastal environment
Keywords	THEME: Modelling (Numerical) Bathymetry Measurements Instrumentation Coast Current Estuary Geomorphology Observations Sediment Pathway Sediment Transport Surveys LOCATION: East Coast Humber Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S

Description	ABSTRACT: The Humber observatory project is designed to link regional environmental monitoring systems to numerical modelling work in order to provide real time descriptions combined with short and long term predictive capabilities. Instruments and sensors were installed in and around the Humber estuary and the surrounding coastline. The data is correlated with ship based surveyed and remotely sensed information and then used to validate a numerical model of the estuary. The study also served to enable the estimation of particle exchanges between the Humber and the southern North Sea. PURPOSE: To validate a predictive model of the Humber Estuary and to collate a wide range of information pertaining to the hydrodynamics and sediment dynamics of the east coast of England.
Reference	Hardisty, J. and Rouse, H. L. 05/07/1995 in 30th MAFF Conference of River and Coastal Engineers
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Clacton ADCP Survey
Keywords	THEME: Modelling (Numerical) Bathymetry Measurements Instrumentation Current Surveys Tide LOCATION: Clacton
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: An ADCP study of tidal flows offshore of Clacton was carried out to provide time series of current speed and direction as a function of depth over a spring tidal cycle. PURPOSE: The data collected during the survey is to be used to validate a hydrodynamic numerical model presently under development by HR Wallingford.
Reference	CEFAS 01/10/2001 in 01/10/10012/1
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	A radioactive tracer study in the Shipway Channel off the Suffolk coast
Keywords	THEME: Gravel Measurements Current Observations 50 Sediment Transport Tide LOCATION: East Coast North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A radioactive tracer study was carried out in the Shipway Channel to investigate the mobility of sand and gravel under waves and currents. PURPOSE:
Reference	HR Wallingford 01/02/1984 in
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The transport of fine grained cohesive sediment in the southern North Sea
Keywords	THEME: Mud Modelling (Numerical) Bathymetry Sediment Pathway Sediment Source Sediment Transport Tide LOCATION: Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A collection of presentations from a workshop on the transport of fine grained cohesive sediments in the southern North Sea. PURPOSE:
Reference	NCK/ONL Workshop 06/02/2001 in
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Physical processes in the Humber Estuary
Keywords	THEME: Modelling (Numerical) Bathymetry Estuary Geomorphology Sediment Transport Tide Wave LOCATION: Humber Estuary
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The first draft of a document describing physical processes in the Humber Estuary. As yet, no executive summary is available. PURPOSE:
Reference	Hardisty, J. 01/06/2000 in
	PROGRESS: Final/Complete

Status	UPDATE:
Constraints	ACCESS: USE:
Title	Anglian region: Shoreline monitoring data catalogue
Keywords	THEME: Bathymetry Profiles Surveys LOCATION: East Coast
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A catalogue of charts showing the location of beach profile surveys, estuarine surveys and bathymetric surveys for the Anglian region. PURPOSE:
Reference	Environment Agency 01/08/2000 in
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Humber Estuary tidal defences
Keywords	THEME: Bathymetry Coast Current Estuary Geomorphology LOCATION: Humber Estuary
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This report forms the 1st volume of the 2nd phase of a study on the geomorphology of the Humber Estuary. The report deals with the geomorphological evolution of the Humber and the short-long term variability of hydrodynamic processes within the estuary. PURPOSE:
Reference	Environment Agency 01/03/2000 in A Sustainable Future for the Humber Estuary
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Southern North Sea Sediment Transport Study
Keywords	THEME: Bank Topography Modelling (Numerical) Bathymetry Bedform Measurements Current Estuary Geomorphology Sediment Transport Surveys Tide LOCATION: Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This report forms the first stage of the southern North Sea sediment transport study. The report comprises a database of literature and data sources, a literature review and a conceptual model of the the present day sediment transport regime in the southern North Sea PURPOSE:
Reference	ABP Research and Consultancy 01/05/1996 in
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Southern North Sea sediment transport study
Keywords	THEME: Modelling (Numerical) Bathymetry Bedform Measurements Coast Geomorphology Sediment Pathway Sediment Transport Surveys Tide LOCATION: Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This report comprises a supplementary literature review undertaken since completion of phase 1 of the southern North Sea sediment transport study. The purpose of this work is to ensure that phase 2 of the study commences with a full account of available information. In general, the review has identified studies which are mostly confined to localised areas rather than the southern North Sea as a whole. PURPOSE:
Reference	Waveney District Council and ABP Research and Consultancy 01/01/2000 in R.845
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	33rd MAFF Conference of River and Coastal Engineers
	THEME: Mud Bank Topography Modelling (Numerical) Measurements Coast Estuary Geomorphology Observations Sediment Transport Surveys

Keywords	LOCATION: North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A collection of papers presented at the 33rd MAFF conference of river and coastal engineers. PURPOSE:
Reference	MAFF 01/07/1998 in
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	31st MAFF Conference of River and Coastal Engineers
Keywords	THEME: Modelling (Numerical) Measurements Coast Estuary Observations Sample 50 Sediment Pathway Sediment Transport Storm Flood defence LOCATION: East Coast North Sea General UK
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A collection of papers on flood and coastal management presented at the 31st MAFF conference of river and coastal engineers. PURPOSE:
Reference	MAFF 03/05/1996 in
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	34th MAFF Conference of River and Coastal Engineers
Keywords	THEME: Coast Coastal Works Estuary Oceanography Sediment Erosion Sediment Pathway Sediment Source Sediment Transport Storm Surveys Water Level Flood protection LOCATION: Humber Estuary North Sea General, UK
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A collection of papers of flood and coastal management presented at the 34th MAFF conference of river and coastal engineers. PURPOSE:
Reference	MAFF 30/06/1999 in
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	36th DEFRA Conference of River and Coastal Engineers
Keywords	THEME: Modelling (Numerical) Bathymetry Beach Gravel Cliff Measurements Instrumentation Coast Coastal Works Current Estuary Geomorphology Sediment Erosion Sediment Pathway Sediment Transport LOCATION: North Sea General
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A collection of papers of flood and coastal management presented at the 36th DEFRA conference of river and coastal engineers. PURPOSE:
Reference	DEFRA 20/06/2001 in
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Rartes and patterns of shoreface connected sandy ridges along the southern North Sea coast
Keywords	THEME: Bank Topography Bathymetry Bedform Measurements Coast Current Geomorphology Storm Surveys Tide LOCATION: North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
	ABSTRACT: This paper discusses the study of shoreface ridges and, in particular, their rates and patterns of migration. Ridge migration along the southern North Sea coast was found to be the highest recorded anywhere in the world. The results of the study also indicate that ridge migration is predominantly storm induced.

Description	PURPOSE: The dynamics of shoreface ridges may have a profound effect on nearshore processes. This study sets out to investigate the influence of these ridges on the coastline.
Reference	Antia, A. E. 01/12/1996 in Journal of Coastal Research 12 (1)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Physical Oceanography of the North Sea
Keywords	THEME: Modelling (Numerical) Bathymetry Measurements Coast Current Geomorphology Sediment Transport Storm Surveys Tide Water Level Wave Surges LOCATION: North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This paper describes the oceanography of the North Sea. Particular emphasis is placed upon physical processes such as tides, waves and surges. These processes in turn form the basis for seasonal variability, circulation, frontal boundaries, sea level trends and dispersive processes. The current level of understanding is also discussed. PURPOSE: To provide an insight into the hydrodynamics of the North Sea.
Reference	Huthnance, J. M. 01/06/1991 in Ocean and Shoreline Management 16
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	On the specification of meteorological forcing in numerical models for North Sea storm surge prediction with application to the surge of 2 to 4 January, 1976
Keywords	THEME: Modelling (Numerical) Coast Tide Water Level Surges LOCATION: North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This paper describes the alternative procedures by which forces of meteorological origin can be derived from output of an atmospheric model. Used in conjunction with suitable sea models, these constitute a scheme for storm surge prediction in the North Sea PURPOSE:
Reference	Flather, R. A. and Davies, A. M. 01/06/1978 in Deutsches Hydrographisches Zeitschrift 15
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Environmental parameters on the UK continental shelf
Keywords	THEME: Bathymetry Gas Oil Storm Tide Water Level Wave Wind Surges LOCATION: North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This report consists of a series of maps detailing environmental parameters relevant to the construction of offshore installations. An account is given of the data used, the methodologies employed to process the data and the methods used to produce the maps. PURPOSE: To produce clear and detailed maps of the various environmental parameters that occur within the North Sea system
Reference	Noble Denton and Associates 01/06/1985 in Department of Energy: Offshore Technology Report
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Ship ADCP measurements and tidal models of the North Sea
Keywords	THEME: Modelling (Numerical) Bathymetry Measurements Current Geomorphology Observations Surveys Tide Surges LOCATION: Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: ADCP measurements from a continental shelf location have been compared with the output of a two dimensional tidal model. A scheme for calculating the residual currents is outlined. The data set was collected during a series of 14 cruises and was then used to validate the model. Particular attention was given to spatial, temporal and timing variability. PURPOSE:
Reference	Howarth, M. J. and Proctor, R. 01/06/1992 in Continental Shelf Research 12 (5/6)
Status	PROGRESS: Draft UPDATE:
Constraints	ACCESS: USE:

Title	The effect of an offshore bank in attenuating waves
Keywords	THEME: Bank Topography Measurements Instrumentation Surveys Water Level Wave LOCATION: Southern North Sea Sizewell- Dunwich Bank
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Waverider buoys were installed offshore and inshore of the Sizewell-Dunwich bank to record the attenuation of waves crossing the bank. PURPOSE:
Reference	Tucker, M. J. Carr, A. P. and Pitt, E. G. 01/06/1983 in Coastal Engineering 7
Status	PROGRESS: Draft UPDATE:
Constraints	ACCESS: USE:
Title	A fine grid flow and storm surge model of the North Sea
Keywords	THEME: Modelling (Numerical) Bathymetry Storm Surveys Tide Water Level Wave Surges LOCATION: Dutch Coast North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: In this paper, a fine grid model is described for depth averaged tidal flow and storm surge computations of the North Sea. PURPOSE:
Reference	Verboom, G. K. de Ronde, J. G. and van Dijk, R. P. 01/06/1992 in Continental Shelf Research 12 (2/3)
Status	PROGRESS: Draft UPDATE:
Constraints	ACCESS: USE:
Title	A two later model of mud transport in the Thames Estuary
Keywords	THEME: Mud Modelling (Numerical) Estuary Sediment Deposition Sediment Erosion Sediment Transport Tide Flood barrier, Siltation LOCATION: Thames Estuary
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A two layer numerical was used to simulate mud transporting processes in the Thames Estuary in order to assess the impact of siltation on the performance of flood barriers PURPOSE: To calibrate and validate a two dimensional mud transport model with a view to predicting areas of mud erosion and deposition within the Thames estuary. The model was also used to determine the effects of siltation on flood barriers.
Reference	Odd, N.V.M. and Owen, M.W. 01/01/1972 in Proceedings of the Institute of Civil Engineers Paper 7517 (Suppliment 9)
Status	PROGRESS: Draft UPDATE:
Constraints	ACCESS: USE:
Title	Coastal experiments with radioactive tracers
Keywords	THEME: Headland Bathymetry Measurements Instrumentation Coast Current 50 Sediment Transport Tracers LOCATION: Cromer East Coast Norfolk Norfolk Banks Southern North Sea Winterton Ness
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This article describes a study in which radioactive tracers were used to trace the on and offshore movement of sand along the north Norfolk coast. This investigation forms part of a larger scale study into the erosion of this coastline. PURPOSE: To attempt to overcome the problems associated with establishing the direction and rate of sediment transport in coastal waters.
Reference	Reid, W.J. 01/05/1958 in The Dock and Harbour Authority 39
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	What is a bedload parting
Keywords	THEME: Mud Modelling (Numerical) Bar Bathymetry Bedform Gravel Current 50 Sediment Pathway Sediment Transport Tide LOCATION: North Sea English Channel
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
	ABSTRACT: The facies distribution associated with sediment transport pathways and bedload parting zones is said to reflect a downcurrent decrease in bottom tidal stress. A model is proposed for the distribution of scour zones as a function of sediment

Description	supply. Bedload partings are classed as a particular type of scour zone in which local bottom stress maxima coincide with divergent sand transport patterns. PURPOSE:
Reference	Harris, P.T. Pattiaratchi, C.B. Collins, M.B. and Dalrymple, R.W. 01/06/1995 in Tidal Signatures in Modern and Ancient Tidal Sediments
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Winterton ness sand transport monitoring
Keywords	THEME: Bathymetry Measurements Current Geomorphology Ness 50 Sediment Deposition Sediment Input Sediment Pathway Sediment Transport Tide Fluorescent Tracers LOCATION: Southern North Sea Winterton Ness
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A survey of sand transport rates around Winterton Ness was carried out in April 2001. A fluorescent tracer was released into the coastal zone and its distribution was tracked for a period of 7 days. After 24 hours, the tracer had travelled over 1km to the north whilst by 191 hours, the tracer had been transported onto the shoreline some 5km north of the release point. PURPOSE: To investigate sand transport processes along this section of coast and the possible cycling of sand between Winterton Ness and the sandbanks located towards the south.
Reference	CEFAS 01/10/2001 in Winterton Tracer Survey for CEFAS 01/10/10013/1
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Residual currents in relation to shoreline evolution of the east Anglian coast
Keywords	THEME: Bank Topography Bathymetry Beach Bedform Measurements Coast Current 50 Sediment Erosion Sediment Pathway Sediment Transport Surveys Tide Wave LOCATION: East Coast Norfolk Southern North Sea Winterton Ness
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The patterns of sandbanks and channels, and the character and circulation pattern of sediments closely reflect residual current movement. The combined action of waves and tidal currents create favourable conditions for sediment deposition or erosion. This may explain the origin of such features as the nesses Benacre, Winterton and Caister; particularly as they change their form in response to offshore hydrodynamic forcing. There is therefore an intimate connection between residual currents in the offshore zone and the supply of sediment to the shoreline. PURPOSE:
Reference	Robinson 01/01/1966 in Marine Geology 4
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	A study of sand movements on the Lowestoft sandbank using fluorescent tracers
Keywords	THEME: Bank Topography Bathymetry Bedform Measurements Instrumentation Current Observations Sample 50 Sediment Pathway Sediment Transport Surveys Tide LOCATION: Lowestoft
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The transport of sand sized material around the Lowestoft sandbank and the approach to Lowestoft harbour was investigated. The study comprised hydrographic surveys, current measurement and fluorescent tracer deployments. PURPOSE: To observe the rates and patterns of sediment movement in the coastal zone.
Reference	Jolliffe, I.P. 01/12/1963 in The Geographical Journal 129 (4)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Radioactive tracer experiment off the Norfolk Coast
Keywords	THEME: Bank Topography Beach Bedform Sediment Erosion Sediment Transport Tide Wave Radioactive tracers LOCATION: East Coast Norfolk Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: A radioactive tracer experiment was carried out along the Norfolk coast to investigate the exchange of material between offshore sandbanks and the coast. The relationship between sediment transport and the prevailing waves and tidal currents was also investigated. This area was chosen because of the serious coastal erosion problems that have been ongoing for many years. PURPOSE:
Reference	Hydraulics Research 01/01/1957 in The Report of the Hydraulics Research Board

Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Great Yarmouth Outer Harbour: Impact of the harbour development
Keywords	THEME: Modelling (Numerical) Measurements Sediment Transport Tide Wave LOCATION: Great Yarmouth
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This report evaluates the probable impact of the proposed outer harbour development at Great Yarmouth. The sediment transport regime was simulated using numerical modelling techniques. The verified models were then used to study the modification of the wave driven and tidal sediment transport caused by the harbour development. PURPOSE:
Reference	HR Wallingford 01/01/1998 in Report EX3726
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Movement of beach materials on the east coast of England
Keywords	THEME: Bathymetry Beach Measurements Current Sediment Erosion Sediment Pathway Sediment Transport Tide Wave Radioactive Tracers LOCATION: East Coast Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This article describes some of the coastal problems facing the east coast of England as well as providing an overview of sediment transport studies carried out using radioactive tracers. PURPOSE:
Reference	Kidson, C. 01/06/1961 in East Midland Geographer
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Analysis of bathymetric change and sediment mobility: Offshore of Great Yarmouth, southern North Sea
Keywords	THEME: Bathymetry Bedform Gravel Measurements Coast Current Dredging 50 Sediment Erosion Sediment Pathway Sediment Transport Surveys Tide Seabed mobility LOCATION: Great Yarmouth Lowestoft Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This report assesses the environmental aspects of a bathymetric survey carried out off Great Yarmouth and Lowestoft in 1993. Included are: a review of water and sediment movement throughout the region; a comparison of the bathymetric data gathered during the survey and historical charts to establish long term erosional and accretional trends; and natural environmental changes compared with changes brought about by dredging operations. PURPOSE:
Reference	Gao, S. Ke, X.K. and Collins, M.B. 01/10/1993 in
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Estimates of extreme conditions of tide and surge using a numerical model of the north-west European continental shelf
Keywords	THEME: Modelling (Numerical) Current Storm Tide Surges LOCATION: North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This paper describes techniques for predicting extreme water levels due to tides and surges using numerical models. PURPOSE: To provide a method for predicting extreme currents and water levels associated with tidal surges to be incorporated into the design brief of offshore structures.
Reference	Flather, R.A. 01/01/1987 in Estuarine, coastal and shelf science 24(1)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The effect of waves on surges in the North Sea
	THEME: Modelling (Numerical) Tide Water Level Wave Surges

Keywords	LOCATION: North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Surface gravity waves may affect storm surges in three distinct ways. The enhancement of the surface roughness causes the surge to build more quickly. Radiation stress slows the building of the surge. The surge may also be affected by the enhancement of bottom drag although quantitative analysis of this parameter was not possible during the numerical model studies described in this paper. PURPOSE: To investigate the influence of surface gravity waves on tidal surges.
Reference	Mastenbroek, C. 04/10/1992 in Proceedings of the 23rd Conference of Coastal Engineers
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Estimating extreme currents by combining tidal and surge probabilities
Keywords	THEME: Current Storm Tide Surges LOCATION: North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Methods of applying joint probability techniques to tide and surge data are described with a view to predicting extreme currents. PURPOSE: To provide a realistic method for the prediction of extreme currents associated with tides and surges.
Reference	Pugh, D.T. 01/06/1982 in Ocean Engineering 9(4)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Sand suspension and transport on the Middelkerke Bank (southern North Sea) by storms and tidal currents
Keywords	THEME: Bank Topography Bedform Current 50 Sediment Transport Wave LOCATION: Southern North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: This paper describes an investigation into suspended sand transport on a tidal sand bank due to storm waves and currents. Transport up the steep side of the bank during storm conditions indicates that waves play an important part in bank maintenance. PURPOSE: To quantify sand transport on a North Sea, tidal sand bank during storm conditions.
Reference	Vincent, C.E. Stolk, A. and Porter, C.F.C. 01/06/1998 in Marine Geology 150
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The effect of wind wave enhancement of bottom stress on storm surges
Keywords	THEME: Modelling (Numerical) Current Water Level Wave Surges LOCATION: North Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The effect of increased bottom friction due to wave and current interactions in shallow water is described with a 2D numerical model. PURPOSE: To investigate the effects of surface gravity waves on storm surges
Reference	Tang, Y.M. and Grimshaw, R. 01/06/1996 in Proceedings of the Ocean and Atmosphere Pacific: International Conference
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Interaction between tide and surge in the Thames
Keywords	THEME: Estuary Storm Tide Surge LOCATION: Thames Estuary
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: There is an interaction between tides and surges in the Thames Estuary. This results in the amplification of the surge height. The paper includes a full statistical analysis of the phenomenon. PURPOSE: To investigate the interaction between tides and surges in an estuarine environment.

Reference	Rossiter, J.R. 01/06/1961 in Geophysical Journal of the Royal Astronomical Society 6
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Analysis of surge phenomena in the Humber estuary, North Sea coast of eastern England
Keywords	THEME: Estuary Temperature (Air) Tide Surges, Atmospheric Pressure LOCATION: Humber Estuary
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: The paper presents the results of time series analyses of surge phenomena in the Humber estuary. The occurrence of maximum surges was found to coincide with minimum pressure and maximum winds. Air temperature was also found to drop immediately before surge events. The river discharge and SPM concentration was elevated during surge events. PURPOSE: To assess the impact of surge events in estuarine environments.
Reference	Begum, D.A. 01/03/1999 in Indian Journal of Marine Sciences 28 (1)
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	The role of shoreline configuration and coastal morphology on nearshore sediment transport under storm combined flows, Canadian Beaufort Sea
Keywords	THEME: Modelling (Numerical) Beach Coast Current 50 Sediment Transport Storm Water Level Wave Wind Surges LOCATION: East Coast Canadian Beaufort Sea
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: An investigation into the influence of storm surge currents on nearshore sedimentation was carried out in the Canadian Beaufort Sea. During surges, a downwelling circulation occurs which drives offshore flowing currents. Large volumes of sediment are mobilised by wave action and then transported offshore by the seawards flowing surge currents. PURPOSE: To investigate the influence of storm surges on nearshore sediment transport.
Reference	Hequette, A. Derosiers, M. and Forbes, D.L. 01/06/1995 in Proc. International Conference: Coastal Change 95 Bordomer-IOC
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:
Title	Coastal steepening - the UK view
Keywords	THEME: Modelling (Numerical) Modelling (Physical) Beach Measurements Coast Geology LOCATION: East Coast
Coverage	TEMPORAL: na - na until na - na SPATIAL: na W, na E, na N, na S
Description	ABSTRACT: Coastal steepening is defined as the process whereby the cross-shore profile does not retreat or progress as an equilibrium profile but becomes steeper. This report outlines the effects of coastal steepening around the UK based on field observations laboratory tests and numerical models. Possible actions against the consequences of this problem are also discussed. PURPOSE: To highlight the problems associated with coastal steepening around the British Isles.
Reference	Soulsby, R.L. Sutherland, J. and Brampton, A.H. 01/07/1999 in Report TR 91
Status	PROGRESS: Final/Complete UPDATE:
Constraints	ACCESS: USE:

