

East Channel association

**Regional Environmental
Monitoring & Management Update**

November 2007

The East Channel Association (ECA)

The ECA is an association of marine aggregate companies who are permitted, or have applied for permission, to extract sand and gravel from the East Channel Region (ECR). Read more about their plans and operations at www.eastchannel.info

The companies of the ECA are:



Britannia Aggregates Ltd



CEMEX UK Marine Ltd

DEME

DEME Building Materials Ltd



Hanson Aggregates Marine Ltd
(now part of the Heidelberg Cement Group)

UMA

United Marine Aggregates Ltd

VDL

Volker Dredging Ltd

Document Information and Circulation

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The ECA Charter

The companies of the ECA have committed to operate under the terms of a 'code of practice' known as the ECA Charter.

The ECA Charter

The ECA have developed a code of practice to assist management of their activities.

The ECA are committed to managing their activities cooperatively in the ECR in order to:

- Implement the results and recommendations of the REA and ensuing studies as appropriate to individual applications.
- Co-operate with and fund future regional environmental studies and research.
- Recognise the results of further environmental studies and respond to recommendations.
- Monitor, mitigate and manage environmental impacts and operational activity on a regional basis.
- Carefully manage dredge areas, with an aim of reducing the dredged area to a minimum.
- Restrict operational dredging areas through zoning of permission areas.
- Only target resources >2m thick.
- Minimise screening.
- Ensure transparency – make all relevant dredging data publicly available through regular company reporting.
- Enable Audit – all relevant data will be made available for analysis by independent experts.

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1. Overview

This document has been produced to provide an update to interested parties regarding the progress made, and plans for, regional environmental monitoring in the East Channel Region (ECR). The information presented summarises the progress made in all areas of dredging management and regional environmental monitoring in the ECR including:

- Aggregate extraction activity
- Biological monitoring
- Physical monitoring
- Herring spawning potential study
- Archaeological assessment
- Navigation and fishing liaison
- GIS and website development
- Reporting
- 2008 monitoring survey plans
- Planned meeting and information dissemination

2. Aggregate Extraction Activity

A summary of the status of licence and application areas in the ECR is provided in Table 1. Latest active zone charts are presented in Figure 1.

Table 1

Area	Status
461	Permitted, extraction has occurred, seasonal restriction Nov-Feb (herring)
475	Permitted, extraction has occurred, seasonal restriction Nov-Feb (herring)
473 East	Permitted, extraction has occurred
473 West	Permitted, no extraction has occurred
474 East	Permitted, no extraction has occurred
474 West	Permitted, no extraction has occurred
474 Central	Permitted, extraction has occurred
464 & 458	Permitted, extraction has occurred
478	Permitted, pre-dredge reporting underway, extraction anticipated in 2008
477	Not permitted, EIA underway, extraction planned for year 5 of dredging activity in the ECR

Aggregate extraction is now permitted at 9 of the 11 dredging permission/application areas in the ECR. Dredging was initiated in the region in 2006. Dredging has occurred in 6 of the permitted areas. Dredging is anticipated in the remaining areas in 2008 with the exception of Area 477 (North and South areas). Britannia Aggregates Ltd, the applicants for Areas 477 North and South, are currently undertaking an Environmental Impact Assessment for proposed dredging operations. They will submit the resulting Environmental Statement prior to the end of the first 5 year term of dredging with the intention of initiating dredging in year 5 of dredging activity in the ECR.

The first months of dredging have been characterised by a lower than anticipated rate of extraction. This is due to operational challenges and also the effects of the weather in what is essentially an exposed offshore location.

3. Biological Monitoring

Biological monitoring has been undertaken in the region since 2005.

3.1. Field Work

Elements of the 2007 biological monitoring survey suffered a delay due to the poor weather experienced during the summer. All mobile gear surveys, including the 2m beam trawl, 4m beam trawl and scallop dredge surveys have been completed and samples are now being analysed. The Hamon grab survey was completed in November. A more detailed explanation of the reasons for the delay to this element of the survey is provided in Appendix 1. The video habitat survey is ongoing and due to be completed before the end of 2007.

3.2. Analysis

Analysis of the samples acquired during biological monitoring field work will be completed and reported by the end of March 2008 with the exception of the epifaunal component of Hamon grabs. At present the strategy for working up the epifaunal samples aims to complete presence/absence analysis of priority sites (related to Areas 461 and 473 East) by the end of March, with samples from the rest of the region being analysed through 2008.

4. Physical Monitoring

4.1. Seabed Sediment

The character of seabed sediment in the ECR is monitored in two ways. Sediment samples are acquired and analysed during the wide-scale Hamon grab survey to provide data describing the seabed across the region. In addition to this, a focused study of the seabed at Area 473 East is also being carried out to test the predictions made in the Regional Environmental Assessment (Posford Haskoning, 2003).

4.1.1. Regional Grab Survey

Hamon grab samples were acquired at every regional sampling site in the ECR in 2007 with the exception of sampling sites related to Area 477 North and South. In these areas a reduced sampling effort was applied as dredging activity will not take place before 2010. Samples acquired have been analysed to determine the particle size distribution of seabed sediments. Data analysis will be undertaken to compare 2007 samples with samples acquired in previous surveys (2005, 2006). In this way, the influence of dredging activity on the character of the seabed will begin to be determined across the ECR. The results of the 2007 sediment sample analysis and comparative analysis will be presented in annual reports at the end of March 2008.

4.1.2. Area 473 East Seabed Sediment Survey

It had been anticipated that dredging would result in deposition of fine sediment around the margins of the active dredge area in Area 473 East.

Repeat swath and sidescan sonar survey data have been reviewed and show no discernable change in the character of the seabed beyond the active dredge area (see Figures 2 and 3). A review of the 2007 repeat sidescan sonar and swath bathymetry survey will be included in regional reports that will be issued in March 2008.

The first full repeat of the baseline seabed sediment survey has recently been commissioned by the ECA. It is anticipated that this work will be able to confirm the findings of the sidescan sonar survey that there has been no significant deposition of fine sediment due to dredging. The survey was due to start in November 2007 but following delays due to weather and vessel availability it has been decided that the first repeat clamshell grab, SPI and drop camera survey will occur early in 2008. Currently it is anticipated that the field work will occur in January 2008 subject to weather conditions.

4.2. Plume Study

Work on the plume study that will be undertaken at Area 473 East is progressing with supporting studies designed to ensure that the main field programme, to be held in June 2008, is suitably prepared. The preparatory work proposed is designed to produce information that will inform the assessment of the volume and character of material returned to the seabed during the dredging process. Three supporting studies are being planned:

- Trials of sensors on board a dredger that will measure the nature of overflowed material
- Trials of wharf sampling techniques designed to measure the character of cargos dredged before, during and after the plume study
- Trials of acoustic survey methods (swath bathymetry and sidescan sonar) that will be used during the plume study to detect the plume in the water column

The outcome of the proposed trials will ensure that the main survey is properly focused and capable of generating the type of data required to gain an understanding of the nature of sediment forming the plume. Available information on regarding the outcome of the trials will be reported at the end of March 2008. The main plume study will be undertaken in June 2008.

4.3. Tracer Study

The tracer study that will be undertaken at Area 473 East has progressed during 2007 with development and testing of the tracer material. Following the background fluorescence study a set of fluorescent paints have been developed for coating of tracer particles. The coatings developed have been tested for abrasion resistance to ensure that the coatings do not degrade when they are deposited and transported on the seabed.

Manufacture of the tracer particles will now commence to ensure that the tracer material is available for use at the time proposed for the first tracer injection. The first tracer injection and sampling programme will take place in June 2008.

A report describing the development of the tracer particles and the sampling strategy that will be used during the first tracer injection will be issued in March 2008.

5. Herring Spawning Potential Study

The herring spawning potential study is being undertaken by RPS. To date, work has been undertaken to collate and combine data related herring larvae, the character of the seabed, fishing activity and herring landings and previous similar studies. The collated data has been analysed to assess the potential of the seabed for herring spawning activity. The results of this assessment will be presented in a report submitted at the end of March 2008.

6. Archaeological Reporting

Wessex Archaeology have been commissioned to undertake a collation of information related to the archaeological potential of the ECR. The work will follow a specification drawn up by the ECA in consultation with English Heritage. The work will result in a report that will be presented to interested parties at the end of March 2008.

7. Fishing and Navigation Liaison

Navigation liaison continues to be carried out through use of the ECA scheduler. To date no navigational incidents have occurred during dredging operations.

Liaison with the fishing industry has been facilitated in a number of ways. Direct contact has been made with individuals and organisations that have an interest in fishing activities in the ECR through circulation of monitoring reports. Representation has also been made by the ECA at South Coast Fishing Liaison meetings in Chichester where the fishing industry are asked for comments regarding activities in the ECR. Members of the fishing industry were also invited to attend the 2007 ECEN meeting in London where dredging and monitoring activities were presented. To date no adverse interaction between the dredging and fishing industries has occurred.

8. Website and GIS

Development of the ECA website is continuing with addition of a web based GIS facility. This facility will allow users to access monitoring data and reports and also plot data and charts to illustrate issues they are interested in. It is the intention of the ECA to use this facility more in future to prevent production of large numbers of report hard copies. This will be more sustainable and prevent delays in reporting and waste of resources.

The specification for the web GIS is currently being developed by Geodata and Emu Ltd. and construction of the user interface and data storage facility will begin in 2008. The ECA anticipate that the web GIS and report catalogue will be available for use from July 2008 onwards.

9. Annual Reporting

Armed with a more thorough understanding of the efforts required to produce regional monitoring reports in the previous 2 years, the ease of use of previous report formats and the time available for interested parties to review reports it has been decided that in future only one set of reports will be produced each year. To initiate this new reporting process, at the end of March 2008 a suite of reports will be circulated that provide the following:

- Finalised 2005 Baseline Regional Monitoring Reports
- Finalised 2006 Regional Monitoring Reports
- Draft 2007 Regional Monitoring Reports
- Draft 2008 Regional Monitoring Plans

The format and content of the reports will account for the comments received following submission of previous regional monitoring reports and those received at meetings held in 2007 (TWG and ECEN). It is likely that within each of the general headings described above several individual reports will be included. It is currently the intention of the ECA to modify reporting format in order to produce individual reports that describe specific elements of the monitoring programme e.g. dredging activity, benthic communities, scallop, fish, herring etc. The findings of the individual reports will subsequently be amalgamated in an annual interpretive/comparative report.

Reports will be presented to all stakeholders at the same time (March 2008). This will allow interested parties adequate time to review the reports and where necessary to make representation at the ECEN meeting (see below).

10. Forthcoming Meetings

Based on experience gained in 2007, it has been decided that only the East Channel Environmental Network meeting (ECEN) will be held in 2008 in order to present information related to, and discuss, dredging activity, monitoring results and future plans in the ECR. The TWG meeting will not be held in 2008 and technical meetings, required to discuss specific matters with specific parties, will be arranged and held on an 'as needed' basis.

It is hoped that this new approach will enable a more productive dialogue and result in better understanding of the work being undertaken – for all parties. The outcomes and actions following such meetings will be summarised and reported at the ECEN meeting to ensure that the wider stakeholder community are informed.

11. 2008 Survey Plans

Regional monitoring work in 2008 will include biological, tracer, plume and seabed sediment surveys. Summary information regarding the surveys that will be undertaken is provided below. A final regional survey plan will be provided with annual regional monitoring reports that will be submitted for review and comment at the end of March 2008.

11.1. Biological Monitoring

Biological monitoring in 2008 will include repeats of the following elements:

- Regional swath and sidescan sonar survey
- Video habitat and biotope survey
- 2m and 4m beam trawl survey
- Scallop dredge survey
- A repeat of the Hamon grab survey carried out in 2007 will also be undertaken in 2008 on the basis that no dredging activity has occurred or will occur in 2008-2009 in Area 477.

11.2. Physical Monitoring

Physical monitoring in 2008 will include the following elements:

- Particle size analysis of grab samples acquired during the regional biological monitoring surveys
- A repeat of the seabed sediment survey at Area 473 East
- Plume study main field operations at Area 473 East
- First tracer injection and sampling at Area 473 East

Specifications and operating procedures for the tracer and plume elements of physical monitoring will be produced and presented to interested parties prior to the work commencing.

Figure 1. Excerpt from the latest active zones charts available from BMAPA (www.bmapa.org) and the Crown Estate (www.thecrownestate.co.uk). NB Dredging zones are now active in Areas 464-2 and 458. Updates of active zone charts will be available from BMAPA and the Crown Estate in January 2008.

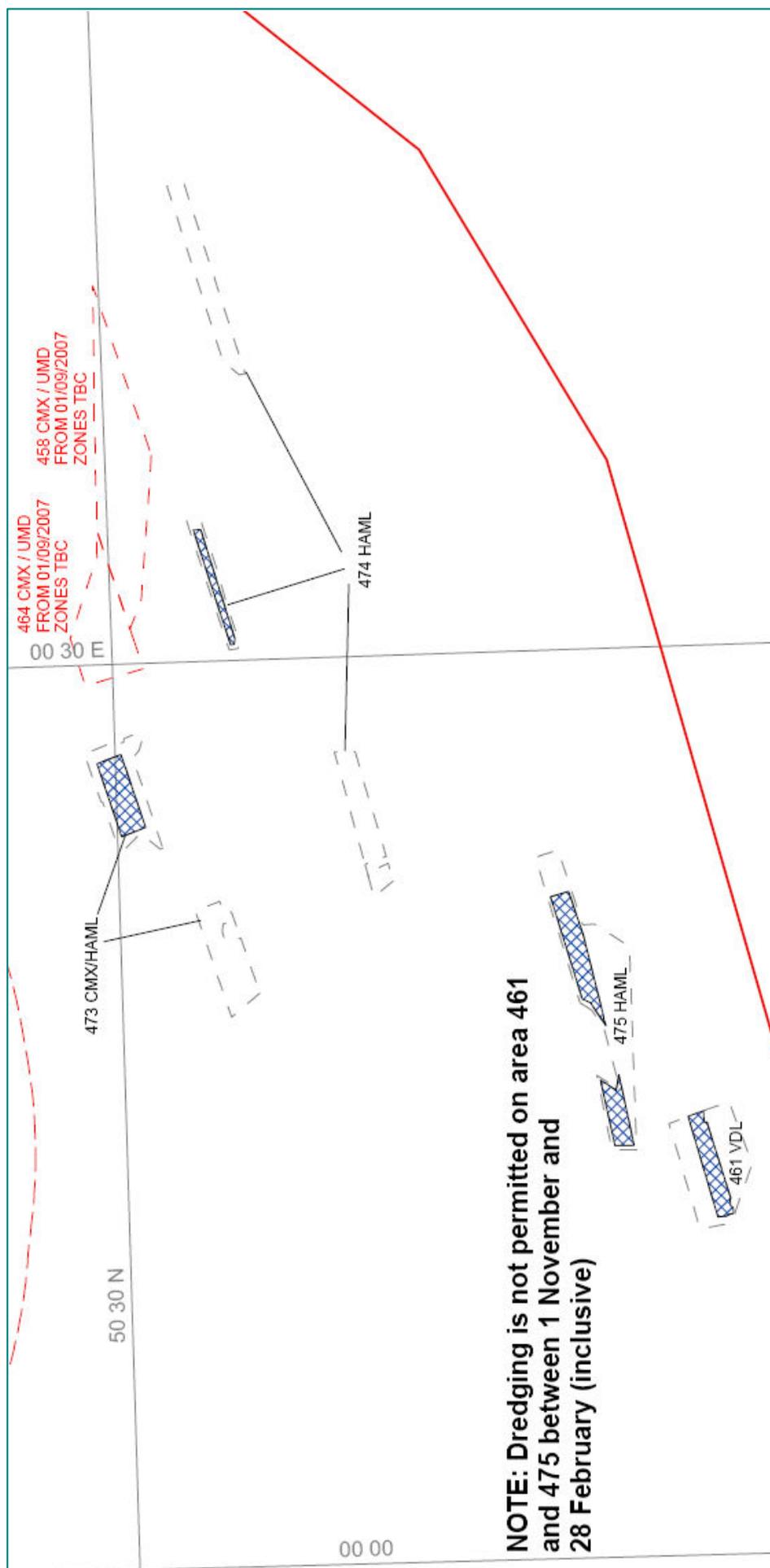


Figure 2. Sidescan sonar mosaic (2007 survey – courtesy of Hanson and CEMEX) showing the texture of the seabed within and surrounding the active dredge zones in Area 473 East. The results of the survey show that within the active dredge area disturbance of the seabed has occurred as would be expected. The seabed beyond the boundary of the active dredge zone shows a uniform character (sandy gravel) with no evidence of deposits of fine sediment due to dredging activity (data acquired by Emu Ltd, 2007).

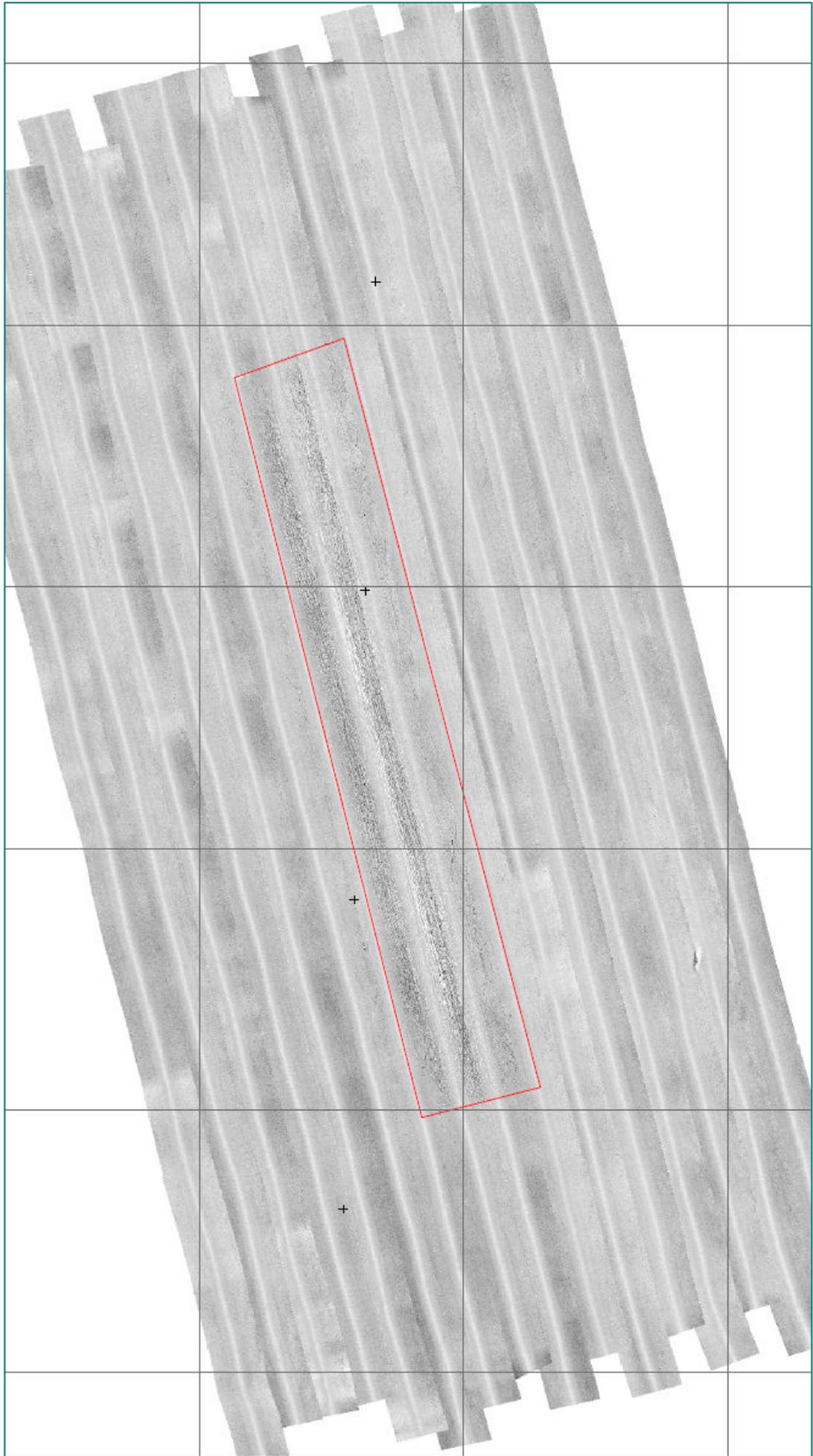
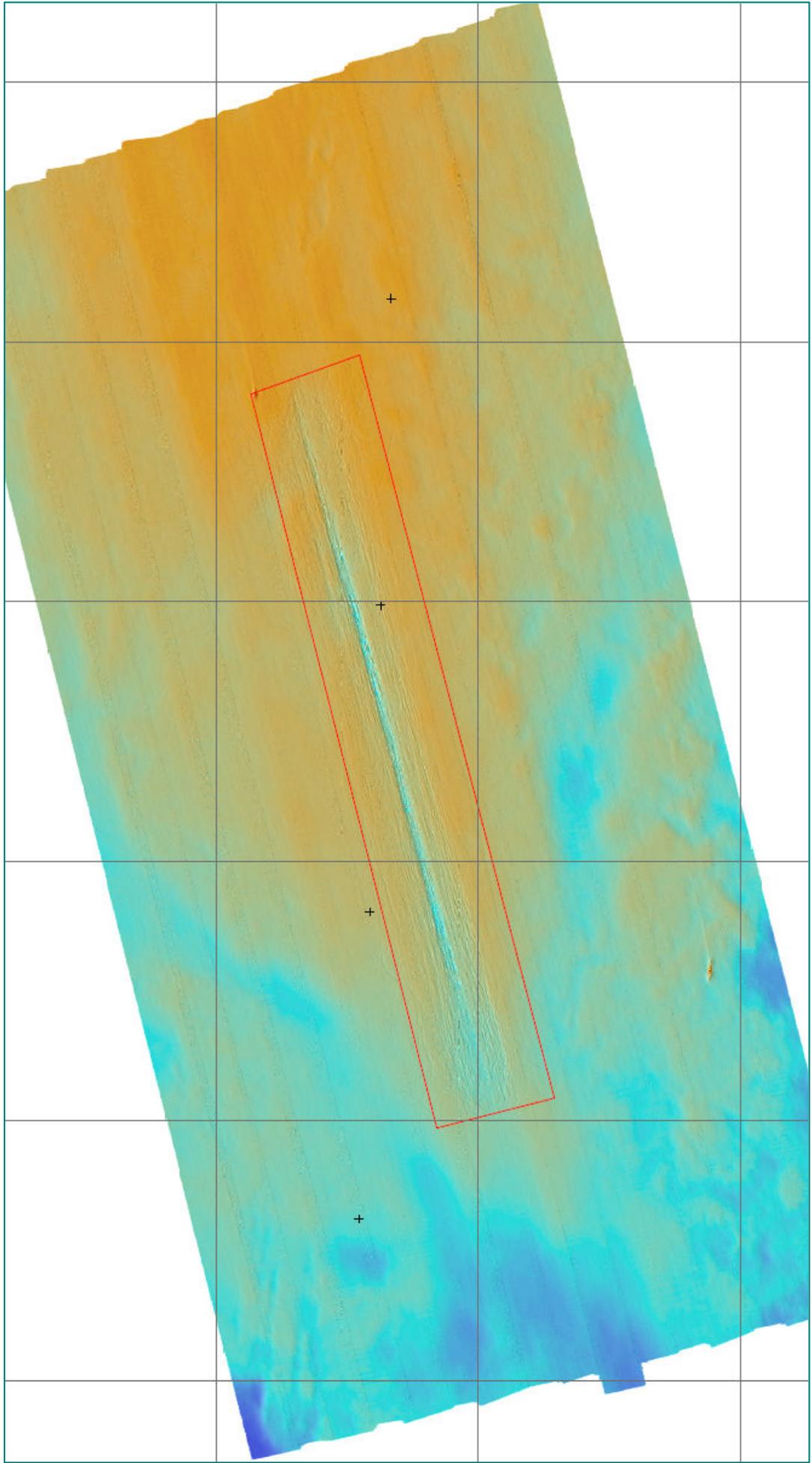


Figure 3. Swath bathymetry data (2007 survey – courtesy of Hanson and CEMEX) showing the deepening resulting from dredging activity within the current active dredge zone. Beyond the active dredge zone there is no evidence of significant changes in bathymetry, either as a result of deposition of fine sediment liberated by dredging or due to natural processes (data acquired by Emu Ltd 2007).



Appendix 1

Explanation of the reasons for the delays suffered during 2007 biological monitoring in the ECR. Text provided by Emu Ltd.

ECR Biological Sampling Progress and Problems 2007

The ECR benthic survey conducted in 2007 has been in progress since August. Since that time most of the survey has been completed but several problems have resulted in delays with sampling of parts of the work. The following table indicates the sampling and the timescales in which it has occurred.

Item Number and Month (see text below table)	Benthic grabs and drop down video completed	2m Trawl completed	4m Trawl completed	Scallop Completed
1 August	134	21		
2 September	18		48	48
3 October	150	27		
4 November	156			

1. Bad weather prevented survey from 13th August to 28th August. At this time it became evident that other vessels which had agreed to be available were withdrawn.
2. Due to the absence of a benthic survey vessel all attention was diverted to the 4m Beam trawl and Scallop survey which was completed by 18th September. A reserve benthic survey vessel was sourced and mobilised on the 18th of September but poor weather resulted in only 1 days work before demob on 23rd due to continued bad weather
3. Two vessels mobilised in October with the 2m Trawl completed by 8th October and 150 benthic samples during 10 (incomplete) days up to the 31st of October.
4. During November the remaining 156 grab samples have been completed.

Delays have occurred, therefore, due to a combination of lack of available vessels, and poor weather. Much of the survey work has been completed in the period August to October, in generally uniform temperature conditions; however, a significant part of the sampling, primarily the benthic survey, has extended into November. The possible consequences are that the communities may begin to change due to seasonal water temperature differences. To identify any relationship between the date of sampling and the outcomes of the benthic analysis, the date of sampling will be included as a factor in the BIOENV analysis.

The above is currently for information purposes but should you have any concerns about the above Emu Ltd can provide clarification.