

Section 1

Introduction and Background Information

1. Introduction

Substantial deposits of sand and gravel exist on the seabed of the Eastern English Channel (EEC). Prospecting surveys by several marine aggregate companies in recent years have revealed the location of viable aggregate resources in this region which could contribute to the supply of construction materials in SE England and NW Europe for many years.

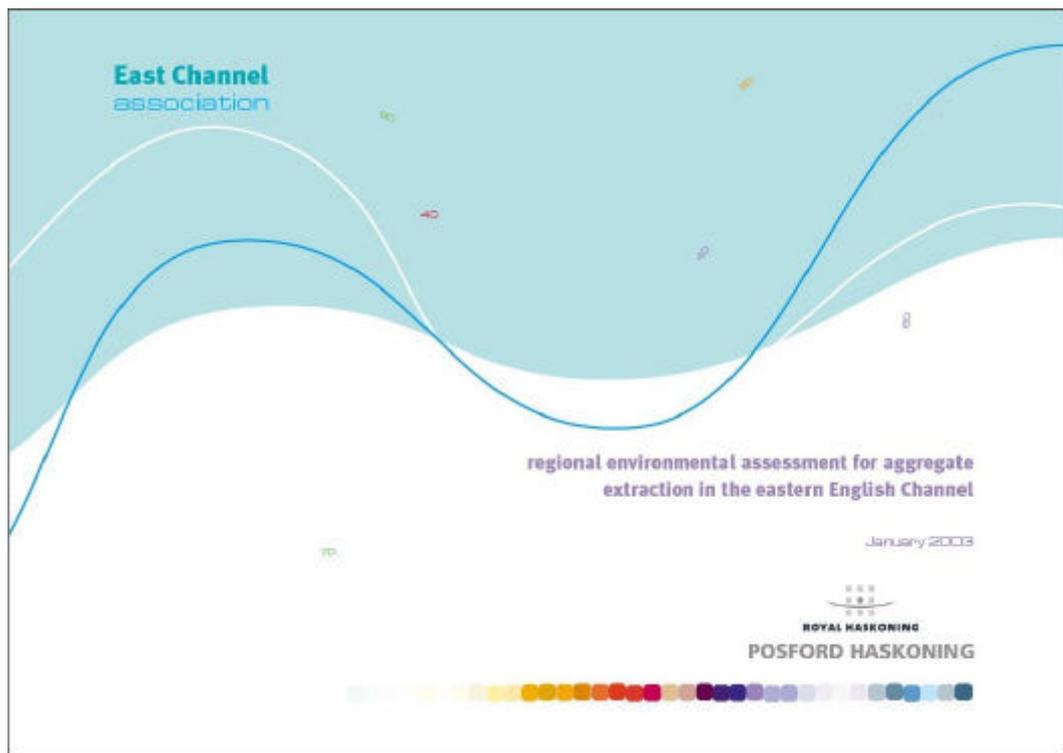
As a result, six companies applied separately to the ODPM for dredging permissions under the Interim Government View Procedure in order to gain extraction licences from the Crown Estate. The companies formed the East Channel Association (ECA) in 2001 to produce a regional environmental assessment and to co-operate in the environmental management of the dredging activity within the proposed extraction sites, should permissions be granted.

There are currently 10 aggregate dredging licence applications in the East Channel Region (ECR) (**Figure 1**), an area that has never been subject to marine sand and gravel extraction. Assuming licences are granted to permit extraction, and acknowledging the likely legal obligation of individual licence conditions to undertake monitoring, an opportunity exists to monitor and measure associated environmental impacts (the footprint of the activity) against pre-dredge baseline data on a regional basis.

Whilst acknowledging that the condition of the seabed is presently unmodified by dredging, it should be noted that the seabed is not necessarily in a 'natural' pre-dredge state, given the level of fishing activity in the ECR.

Notwithstanding this, under current 'developer pays' philosophy, it is the responsibility of the developer to monitor and mitigate the environmental impacts of its activity.

The benefits of a regional approach were recognised from the outset of planning ECR operations and a regional assessment of potential impacts of dredging in the ECR was presented in the Regional Environmental Assessment (Posford Haskoning, 2003). The commitment to undertake regional monitoring and management was formalised in the REA under the terms of the ECA Charter.



The Regional Environmental Assessment (Posford Haskoning, 2003) provided a regional view of the likely impact of aggregate extraction activities and formed the basis for developing much of the work specified in the Regional Monitoring Blueprint.

Box 1 *The ECA Charter*

In the REA, the applicant companies agreed to adhere to the ECA Charter which ensures that companies operating in the ECR commit 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.**
- **Careful management of dredge area, with an aim of reducing the dredged area to a minimum.**
- **Zoning of permission areas to restrict operational dredging areas.**
- **Only dredging resources >2m thick.**
- **Minimise screening.**
- **Transparency – make all relevant dredging data publicly available through regular company reporting.**
- **Audit – all relevant data will be made available for analysis by independent experts.**

The dredging permissions sought by the Applicant Companies, all of whom are members of the East Channel Association (ECA), are for an initial period of five years during which time a programme of regionally coordinated monitoring will be undertaken.

The commitment of the companies of the ECA to undertake regional monitoring has resulted in the development of a regional monitoring plan. The proposed programme of regional monitoring will be carried out alongside licence specific monitoring required for each individual dredging permission area. In addition to the results of specific regional monitoring projects and annual collation and review of survey data, a major assessment of all results will take place 4-5 years following the start of dredging to determine how dredging activity should continue.

The regional monitoring initiative is principally designed to test the predictions of the Regional Environmental Assessment of aggregate extraction in the region and to provide a clear reporting and review structure for stakeholders. The approach represents a major joint commitment by the companies to address conservation, environmental, ecological and fisheries concerns arising from the proposed dredging activity.

The information presented in this document outlines the scope of the regional monitoring programme that will be undertaken by the applicant companies and is intended to act as a guide to these activities to the companies, regulators, advisors, monitoring survey contractors and wider stakeholder community. The Blueprint has been produced by the ECA and Emu Limited, with input from HR Wallingford, following extensive consultation with CEFAS, the JNCC and English Nature.

1.1. The Origin of the ECA Monitoring Blueprint

The ECR Blueprint has been produced following a process that began with the individual aggregate extraction licence applications in the ECR. The individual companies who applied for licences to extract aggregate from the region subsequently agreed to undertake a regional assessment of impacts of the proposed dredging which was published in the form of the Regional Environmental Assessment (REA) (Posford Haskoning, 2003).

In the REA the companies agreed to adhere to the ECA Charter (**Section 1**) which included a commitment to 'co-operate with and fund future regional environmental studies and research'. It is this commitment that has ultimately driven the development of the Regional Monitoring Blueprint and its component studies.

Finally it is worth noting what the Blueprint is, and is not.

Box 2 *What the Blueprint is, and is not...*

The Blueprint is:

- ✓ **An industry initiative**
- ✓ **Innovative**
- ✓ **A 'living' document designed to be reviewed and adapted**

The Blueprint is not:

- × **A panacea for the impacts of dredging**
- × **Rigid or absolute in its scope**
- × **An environmental impact assessment**

1.2. The Structure of ECA Monitoring Blueprint

The Blueprint is intended to be a 'living' document, which provides a guide to regional monitoring activity; both planned and completed.

Box 3 **Structure of the Blueprint**

This version of the Blueprint consists of:

- **The ECR Biodiversity Action Plan (BAP) that incorporates a broad-scale review of habitats, species and geodiversity in the region and provides a set of objectives, actions and targets to ensure that management of dredging is considerate of conservation sensitivities in the region.**
- **The objectives of the regional monitoring studies and an overview of the scope of proposed monitoring programme.**
- **Details of the studies proposed – their aims, experimental design, hypotheses to be tested and methodology.**
- **Details of the surveys to be carried out – survey plans, provisional timings. In this version standard operating procedures (SOPs) for the ecological surveys, biological sample analysis and baseline seabed sediment survey are provided as standalone documents. Further SOPs will be issued as survey specifications for plume and tracer studies are developed.**
- **A description of reporting requirements and review procedures.**
- **Consideration of threshold conditions and possible feedback management of operations.**

The Blueprint should be viewed as a working document. The Blueprint has been divided into a modular format. When required, the intention is for updates to be issued throughout the first 5 years of monitoring, which will be added to the main document. The procedure for issue of updates is outlined in the DCS Terms of Reference. In summary it is proposed that the following update procedure is followed:

- **Complete Blueprint issued annually following Annual Stakeholder meeting.**
- **Individual Section and SOP updates issued as required.**
- **Quarterly summary of Blueprint development and update activity.**

It is envisaged that at some point, potentially within the first five years the scope of regional monitoring becomes fixed – even for a finite period. In this event further updates of the Blueprint may not be required until a significant change in scope occurs. However, there may also be a reason for a reduction in monitoring effort in the future – in which case amended sections describing the basis for the change will be required.

1.3. The Aims and Objectives of the ECA Monitoring Blueprint

1.3.1. Aims

Initially the Blueprint was intended to simply provide a definitive and objective set of procedures, techniques and methods for the proposed monitoring with the aim of producing results that would permit robust decisions to be made by industry and regulators. Since this initial position, it has been necessary to develop and expand the Blueprint Aims as shown below.

Box 4 Aims of the Blueprint

The aims of the ECA Regional Monitoring Blueprint are:

- **To specify the procedures and study methods designed to test the predictions of the REA in relation to environmental effects of dredging.**
- **Ensure integration of regional and site specific monitoring using compatible/comparable data sets.**
- **Guide development of impact thresholds by Year 5 that can be used to inform future dredging management decisions.**
- **Specify the scope of information necessary to provide species and habitat information to safeguard, and inform the management of, commercial and conservation interests.**
- **Provide a coherent five year plan, with annual stock take and review of regional monitoring data and information, aimed at informing decision making by industry and regulators.**
- **Ensure a precautionary, responsible audit regime is adhered to and inform major review in years 4-5.**
- **Provide input to a management framework that adheres to the principles of sustainable development: minimising environmental impacts, providing social and economic benefit, whilst acknowledging the requirement to manage extraction of natural resources for the benefit of future generations.**

1.3.2. Objectives

This section seeks to provide an overview of the proposed ECR regional monitoring programme and its objectives.

The data that will result from the regional monitoring programme is intended to assist in fulfilment of the following objectives:

Box 5 Objectives of the Blueprint

Objectives of the ECR Regional Monitoring Plan

- To provide a regional baseline of the pre-dredge status of seabed habitats and biota in the Eastern English Channel in the vicinity of the proposed dredging.
- To provide a regional reference point against which predictions concerning spatial and temporal impacts due to dredging may be tested.
- To allow the predictions concerning impacts due to dredging to be tested.
- To assist in management of individual licence areas whilst ensuring a regional perspective is maintained.
- To ensure that data gathered from individual licence areas are comparable and compatible for combination across the regional area
- To help inform development of thresholds that may be applied to dredging management and enable further limitation of impacts during the life of dredging permissions.
- To place the conservation importance of the area into a regional and national context through the development of Habitat, Species and Biodiversity Action Plans.

1.4. Scope of the Regional Monitoring Programme

It is stated within the Regional Environmental Assessment (REA) for the Eastern English Channel (Posford Haskoning, 2003) that effects of the proposed dredging “on the physical environment represent ‘changes’ that may or may not be translated into ‘impacts’ as a result of their influence on the biological (and potentially the human) environment”.

In order to identify changes resulting from the proposed dredging it is necessary to have information on the character of the environment prior to dredging and post dredging. A pre-dredge characterisation has already been undertaken by the Eastern Channel Association (ECA) and an overview of the information that exists can be found within the REA.

Box 6 *Scope of the Regional Monitoring*

To fulfil the objectives of the regional monitoring programme, it is proposed that a suite of complementary studies under the following headings are undertaken:

- **Benthic infaunal and epifaunal communities.**
- **Benthic epifaunal communities, biotopes and habitats.**
- **Commercially important epifaunal species, specifically scallop and crab.**
- **Demersal fish species and associated epibenthic communities.**
- **Pelagic fish species with benthic spawning.**
- **Seabed sediment study.**
- **Screening and overflow study.**
- **Plume study.**
- **Sediment tracer study.**

Whilst each of these studies will have a series of aims and hypotheses specific to the requirements of the regional monitoring objectives, it will be the combination of the data which will provide the confidence for interpretation of results. The requirements of the regional monitoring objectives will guide the techniques needed to achieve the aims or prove/disprove the hypotheses.

Where proposed, the hypotheses, which should initially be considered as “working hypotheses”, will range from highly specific and statistically rigorous to generic and qualitative in nature. The emphasis of those hypotheses that are statistically based will be to identify the relevance of the significance, for example a small but statistically significant reduction in benthic species number may occur, but with little ecological importance.

Therefore, for each of the statistically based hypotheses it will be necessary to define a related threshold, which will be employed as a trigger for action. These actions may be in terms of change to dredging activities, remediation or rehabilitation of dredged sites or modification to monitoring techniques.

It should be made clear that at present very few trigger thresholds, designed to inform and control dredging management, can be defined. It is proposed that most thresholds will be developed and adopted during the first 3-5 years of the monitoring programme however, some may not be in place until the completion of the first five years of the programme. It should also be noted that initial actions may relate to changes in monitoring regime (ie increased frequency of surveys, specification of further studies) in the first instance with subsequent development of actions related to changes in dredging management.

Some of the hypotheses and related thresholds will act within the limits of individual licence blocks, while others will relate to the regional perspective. On this basis a matrix of suggested hypotheses is provided in **Table 3**.

A final consideration in the employment of thresholds is the development of the ECR Biodiversity Action Plan. The ECR Biodiversity Action Plans is provided as a stand alone document in **Section 2**. Where appropriate, the hypotheses and related thresholds will refer to the biodiversity, geodiversity and habitat/species action plans' objectives.

1.5. Overview of Baseline to Year 5 Activities

The monitoring activities outlined in the Blueprint will be undertaken as summarised in **Tables 7 and 8**.

The initial plan shown in **Tables 7 and 8** will be subject to annual review and may be adapted following discussion of interpretive reports of monitoring. Annual review of monitoring studies will be undertaken as described in **Section 6** of the Blueprint.

Box 8 *Summary of Baseline to Year 5 Activities*

- The activities described in this document will be undertaken during the first five years of aggregate extraction activity in the East Channel Region.
- This activity will include:
 1. Baseline regional biological/ecological monitoring.
 2. Baseline regional physical monitoring.
 3. Repeat regional biological/ecological monitoring on an annual basis for all reference areas and sites related to operational extraction areas.
 4. Repeat regional physical monitoring on a biennial and annual basis as prescribed in the Blueprint.
 5. Annual reporting, review and dissemination of results.
 6. Collation and interpretation of all baseline to year 5 data for inclusion in a second Regional Environmental Assessment.

A more detailed description of planned baseline to Year 5 activities is provided in the appended project Gantt chart (**Table 5**). This provides the most up to date schedule of works for the period.

1.5.1. Scope of Repeat Surveys

Timing of licence consenting has been considered in design of the regional monitoring surveys.

Biological/Ecological Monitoring Activity

For biological/ecological monitoring surveys consideration has been given to the timing of licence consenting. It is clear that staggered issuing of Government Views is a major issue when considering the scope of work required when undertaking repeat biological/ecological surveys. To clarify this issue it should be noted that following the baseline activity, where all sites will be sampled and surveyed, repeat of survey activity will occur as follows:

Regional Sidescan and Video Habitat Survey – Repeated annually irrespective of issue of consents.

Regional Scallop and 4m Trawl Survey – All sites repeated annually irrespective of issue of consents.

Regional Reference Sites – Related sampling repeated annually in all reference sites irrespective of issue of consents.

Regional Grab, 2m Beam Trawl and Seabed Photography – Annual sampling of all sites related to a DPA that is, or will be, operational in the following twelve months.

Physical Monitoring Activity

As the physical monitoring studies are all based in and around Area 473 East, provided baseline sampling for the seabed sediment study is undertaken before dredging commences, the granting of a licence to extract aggregate from the area will be the only factor to consider when planning repeated surveys. Once a licence to extract has been granted for Area 473 East, and extraction has begun, then all physical monitoring studies will take place following the schedule in **Table 8**.