

10 ENVIRONMENTAL MONITORING AND AUDIT

10.1 Introduction

The section that follows summarizes the environmental monitoring and auditing (EM&A) requirements for the proposed TLCDGA. It is considered that an EM&A programme will be required to assess the effectiveness of the mitigative measures employed during the construction period and maintenance dredging of the proposed TLCDGA, and to ensure compliance with environmental regulatory requirements, standards and Government policies.

The EM&A requirements will be developed in detail in the EM&A Manual (Volume 2 of 3 of the DEIA Study reports). This Manual will be produced as a stand-alone document to be submitted with the EIA Final Assessment Report. The objectives and recommended outline of the EM&A programme are presented in this section, and recommendations are given for the contents and reporting requirements of the EM&A Manual.

10.2 Environmental Monitoring and Audit Requirements

10.2.1 Environmental Monitoring Requirements

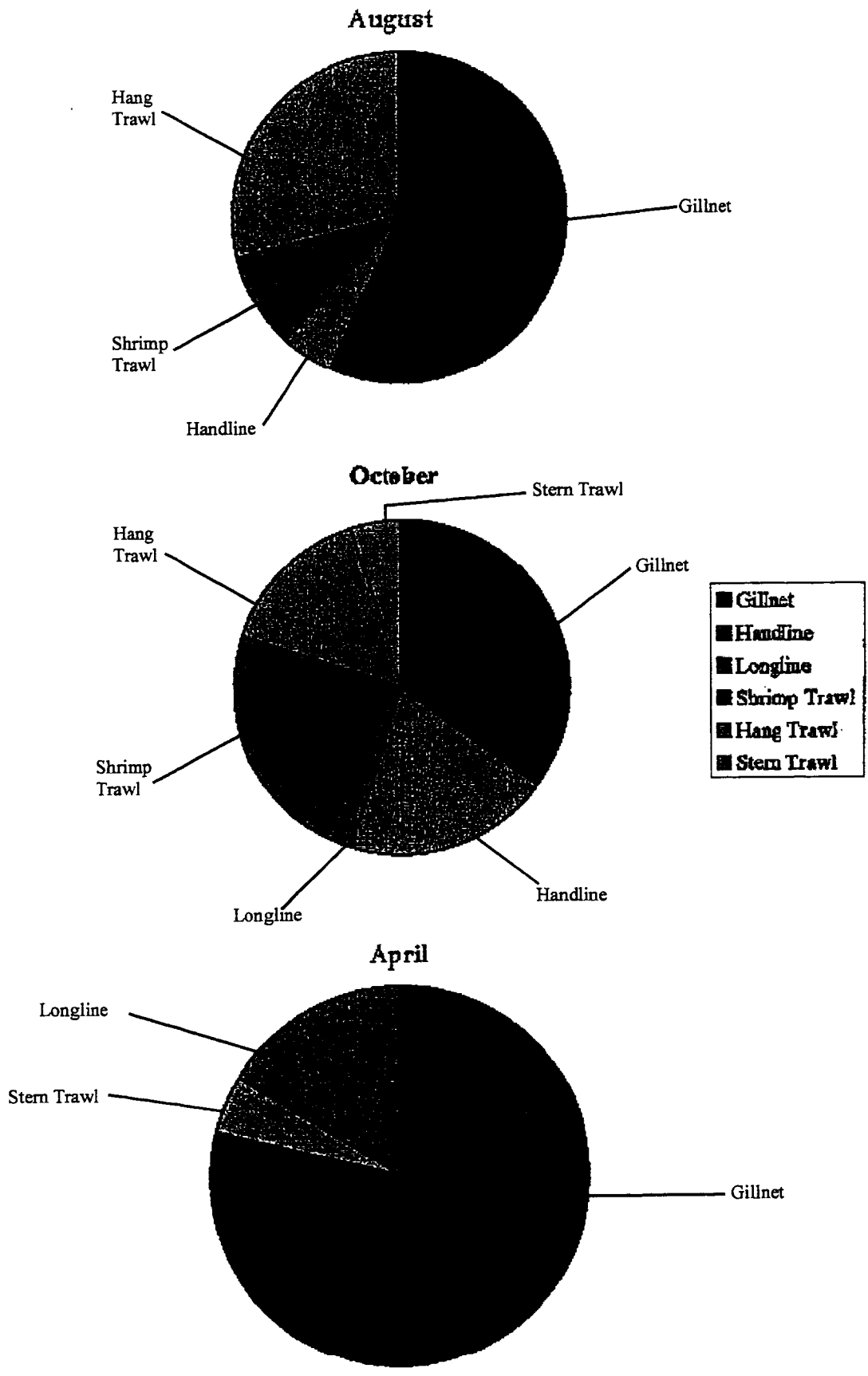
The primary objective of the EM&A programme is to provide a means to determine the efficacy of the recommended mitigatory measures developed within the DEIA study for the construction and maintenance dredging of the proposed DGA. This will be achieved through the application of specified procedures and actions defined in Event and Action Plans (EAPs) to manage the Project's response to any identified unacceptable environmental impacts.

The specific objectives of the EM&A programme for the proposed TLCDGA include the following:

- to provide a database which can be used to determine any short or long-term environmental impacts of the Project;
- to verify the environmental impacts predicted in the DEIA study;
- to monitor the performance and effectiveness of mitigation measures employed;
- to determine project compliance with regulatory requirements, standards and Government policies;
- to provide an early indication and suggest appropriate additional or remedial measures should any of the environmental mitigation measures or controls fail to achieve acceptable standards; and
- to provide data to enable an environmental audit of the Project.

During the dredging and sandfilling works for the construction of the breakwaters, it is recommended that a water quality impact monitoring programme be undertaken. It is recommended that monitoring of water quality be carried out at locations near the Ma Wan mariculture zone and Tung Wan and Tung Wan Tsai beaches. In addition it is recommended that monitoring of construction waste disposal be undertaken at the TLCDGA to ensure that correct disposal requirements for the various waste arisings are being implemented. It is anticipated that recommendations specific to monitoring of marine ecology will not be required since potential impacts on marine ecology are primarily the result of changes in water quality. The environmental mitigation of water quality impacts, including in particular suspended solids and dissolved oxygen concentrations, will mitigate these potential indirect impacts on marine ecology.

Baseline and impact monitoring of odour levels are not considered necessary as the detailed assessment has shown that there would be no exceedance of the 5-second average odour limit at the identified air sensitive receivers (ASR). The ASRs are located further than 500m from the boundary



PROPORTIONAL BREAKDOWN OF FISHING ACTIVITY BY COMMON GEAR TYPES FOR THREE PEAK PERIODS DURING THE SURVEY

FIGURE	9.6
SCALE	n/a

10.2.2 Environmental Audit Requirements

In addition to routine monitoring, environmental auditing is required to ensure that the construction of the proposed TLCDGA is in compliance with environmental regulatory requirements and standards. The environmental auditing will test the adequacy and effectiveness of the environmental monitoring programme adopted.

These audits should be conducted on a regular basis with the following aims:

- to review and verify information available in records developed through the monitoring programme;
- to identify specific issues of non-compliance and to give recommendations to meet them; and
- to check the effectiveness of mitigation measures and to review the need for further mitigatory measures.

In addition to the above, an audit of the environmental complaints handling procedures should be conducted to verify that any complaints are properly addressed and follow up procedures taken. The detailed environmental audit requirements will be described in the EM&A Manual.

10.2.3 Project Implementation Schedule

A schedule of all the mitigation measures recommended in this DEIA is presented in Appendix F. This schedule lists the proposed mitigation measure requirements for each environmental discipline, the location where the mitigation measure is to be implemented and the timing for implementation, the implementation agent and the key EM&A requirements for the project. Details of the recommended mitigation measures can be referred to in Appendix F.

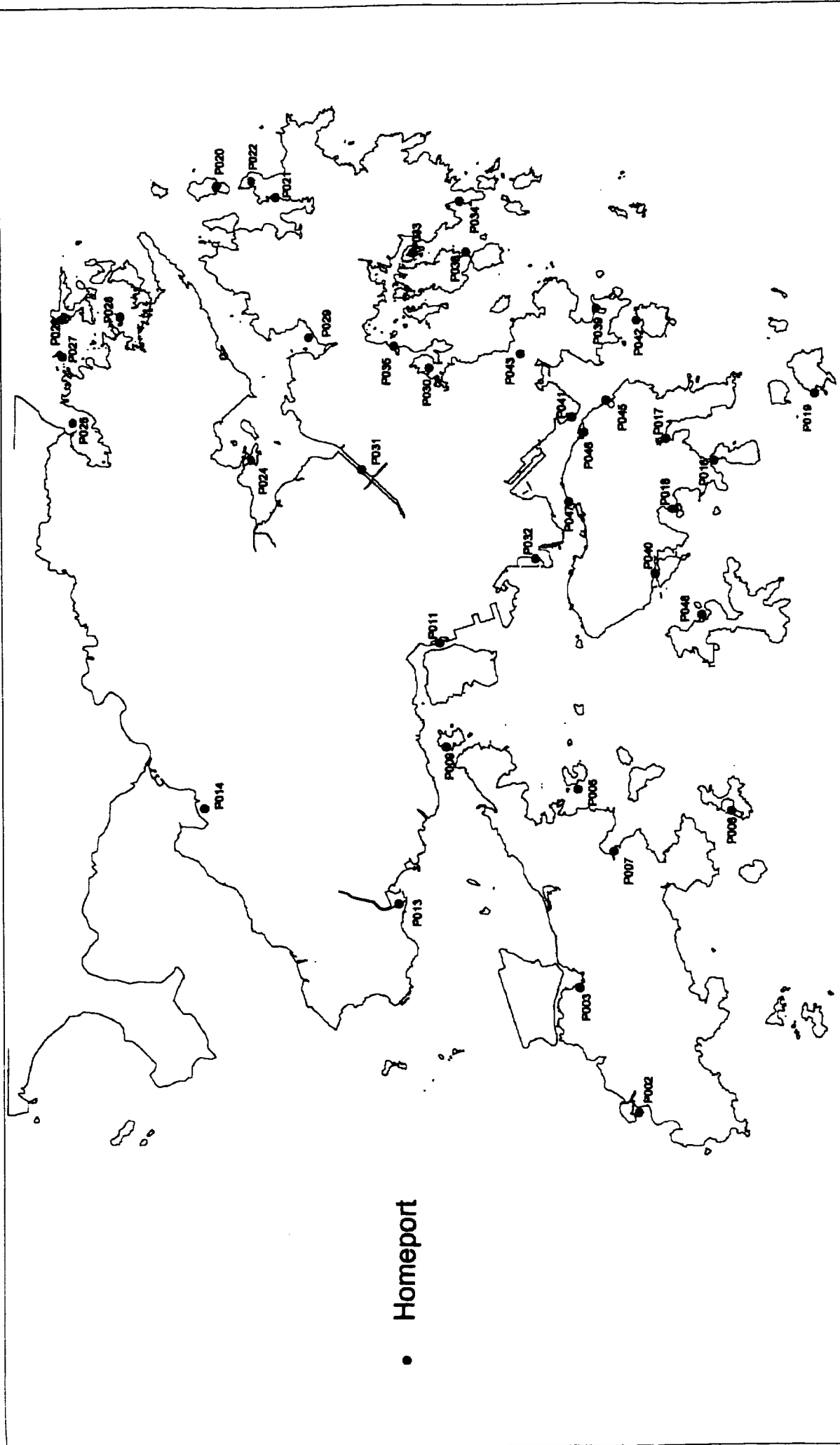
10.3 Environmental Monitoring and Audit Manual

The purpose of the EM&A Manual is to guide the set up of an EM&A programme to ensure compliance with the DEIA study recommendations, to assess the effectiveness of the recommended mitigation measures and to identify any further need for additional mitigation measures or remedial action. The Manual describes the monitoring and audit programme to be undertaken for the construction works and maintenance dredging related to the TLCDGA. It aims to provide systematic procedures for monitoring, auditing and minimizing environmental impacts.

Hong Kong environmental regulations together with the HKPSG have served as environmental standards and guidelines in the preparation of the EM&A Manual. In addition, the EM&A Manual will be prepared in accordance with the requirements stipulated in Annex 21 of the Technical Memorandum on the EIA Process.

The EM&A Manual will include, but not be limited to, the following:

- Responsibilities of the Contractor, the Engineer or Engineer's Representative (ER), the Environmental Team (ET) Leader and the Independent Checker (Environment) (IC(E)) with respect to the environmental monitoring and audit requirements during the course of the project;
- Information on project organization and management structure and programming of construction activities for the project;
- Hypotheses of potential impacts, the basis for, and description of the broad approach



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FIGURE	9.8
SCALE	not to scale