

chapter

1

# Introduction

## 1.1 Aim and scope

Assessments of the quality of the marine environment provide a basis for protecting marine and coastal areas. They provide an opportunity to gather together and assess the results of scientific research and monitoring as well as information on the many human activities that can, directly or indirectly, change or damage the natural attributes of the marine environment. In combination, this information can be used to evaluate the causes and implications of change and to identify impacts that require early attention by policy-makers and environmental managers. Assessments are also used to review the effectiveness of existing measures to prevent degradation of the marine environment, to protect valued species and communities and to restore previously damaged habitats and ecosystems.

The value of environmental assessments depends to a large extent on the availability of reliable and up-to-date information. Thus it is essential that monitoring and other systems of recording marine environmental information are both ongoing and designed to yield high-quality data amenable to interpretation. In this context, assessments provide a means of reviewing the performance of monitoring programmes and of identifying important gaps in knowledge.

This report presents an assessment of environmental conditions in that part of the maritime area which, for assessment purposes, is known as the Celtic Seas<sup>1</sup> or Region III (**Figure 1.1**). The eastern boundary is defined by 5° W and the west coast of Great Britain, between 60° N and 48° N, while the western boundary follows the 200 m depth contour to the west of 6° W, also between 60° N and 48° N (**Figure 1.1**). Together with similar quality status reports for the other four regions, this report forms the basis of a holistic and integrated summary of the quality status of the entire OSPAR maritime area.

The scientific scope of the report embraces the physical, chemical and biological conditions of the coastal and marine ecosystems, both on the seabed and in the

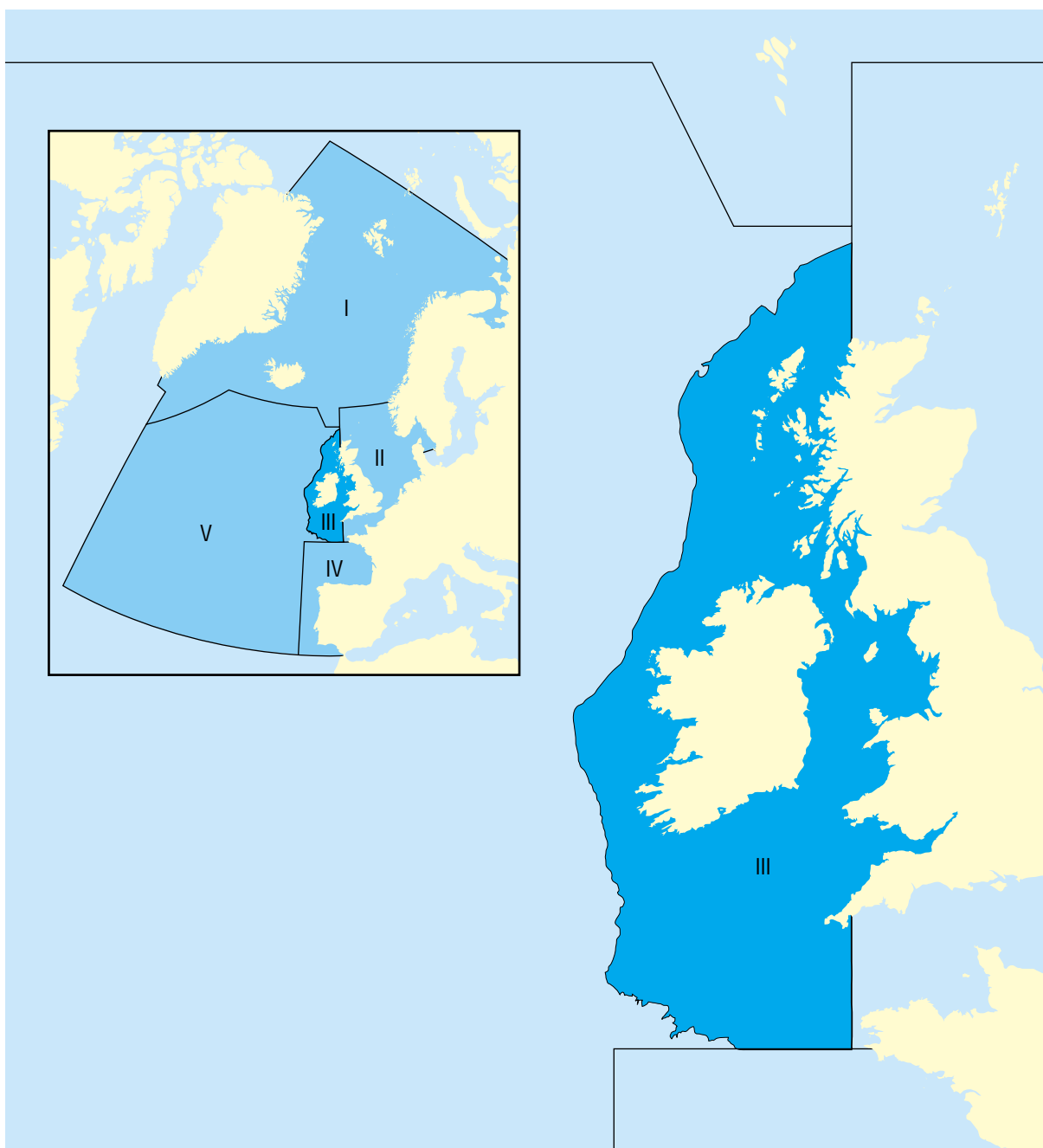
water column, with an emphasis on spatial differences and temporal trends. The assessment also covers the patterns of human activity in the coastal zone, such as urban development, industry and recreation, as well as land use practices that may have a strong influence on the marine environment. The coverage of certain activities extends inland for up to 10 km and, in a few cases, includes parts of river catchments even more remote from the sea. Inevitably, the amount of information available for each sub-area varies considerably, depending on the extent of past research and monitoring and the availability of resources. Consequently not all topics are covered to the same depth and in the same level of detail for all parts of Region III, although in most instances the coverage is commensurate with the extent of human impact in the environments concerned.

## 1.2 The assessment process

The assessment is based on the most recent information available from national and international sources, including OSPAR committees and specialist working groups, the International Council for the Exploration of the Sea (ICES), published reports and the scientific literature. The information was compiled initially by scientists based in government laboratories in England, Scotland, Northern Ireland and the Republic of Ireland, who produced three sub-regional reports covering pre-selected parts of Region III such that the combined information covered the whole of Region III (i.e. Ireland's marine areas – Boelens *et al.*, 1999; the Bristol Channel and the Irish Sea – the Centre for Environment, Fisheries and Aquaculture Science (CEFAS); the Malin Shelf – the Fisheries Research Service (FRS)). Although most of the information relates to the 1990s, some topics required the use of earlier data, either because the recent record was sparse or because trend analysis involved a

<sup>1</sup> Note that the Celtic Sea itself, to the south of Region III, is only part of the Celtic Seas as defined in this report.

Figure 1.1 Region III and the other regions of the OSPAR maritime area.



consideration of historical conditions. While every effort has been made to ensure the comparability of data from different times and locations, methodologies may have differed considerably and thus some comparisons will, inevitably, be tenuous. Where such uncertainties exist, they are indicated in the text.

### 1.3 Guidance to the reader

Chapter two gives a concise description of the physical geography, hydrography and climate of the area, as these have an important bearing on the types and distributions of marine habitats and communities as well as on their sensitivity to environmental change.

Chapter three examines human activities that directly or indirectly impinge on marine areas, their amenities and resources, and also identifies those localities that are most affected, assessing any apparent trends.

The next two chapters summarise information on the chemical and biological features of the various coastal and offshore ecosystems, focusing in particular on the causes and implications of the changes that are occurring to their natural characteristics. Finally, Chapter six draws on the preceding chapters to identify the major causes of environmental degradation within the area and, where appropriate, the managerial and scientific actions needed to redress them.

References to 'Ireland' are references to the Republic of Ireland unless the context otherwise requires.