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SHENNAN, I. and ANDREWS, J. (eds.), 2000. ***Holocene Land-Ocean Interaction and Environmental Change around the North Sea***. Geological Society, London, Special Publication 166, 326 p., 18 x 25,5 cm, 132 \$ U.S. ISBN 1-86239-054-1.

This compendium of fourteen papers plus an introduction by the editors is the culmination of the Land-Ocean Evolution Perspective Study, one component of the Land-Ocean Interaction Study funded by the British Natural Environment Research Council. The aim of the project is "to describe the evolution of coastal systems over the last 10 000 years in response to changes in natural climatic conditions, changes in relative sea-level and the changes wrought by human activities" (p. 2). The geographical setting is the east coast of England from East Anglia to the Scottish border. Sediment flux in river basins and the coastal zone in this region is a particular focus of the work. The papers have been arranged in four categories: (1) techniques, (2) studies of the Humber Estuary catchment, the largest drainage basin in the study area, (3) studies of the rest of the project area, and (4) regional scale analyses.

The lead paper in the first group describes a multidisciplinary approach to assessing Holocene sedimentology of cores from the Humber estuary. The authors discuss 27 techniques ranging from sedimentary and stratigraphic to geochemical, geophysical, and biological, which considered together, provide more powerful interpretations by means of converging evidence. Other papers

in this section document application of a foraminiferal-based transfer function to assessing sea level change on a fine scale, and luminescence dating of water-laid sediments.

The second group begins by taking the reader into the 8 000 km<sup>2</sup> drainage basin of the Ouse River (the main feeder to the Humber Estuary) to show the interaction between human and natural influences on the fluvial system. Significant is the use of the distribution of human contaminants to assess that the river may have delivered relatively little sediment to the Estuary during the Holocene. Subsequent papers document diatom and pollen evidence of the paleogeography of the Humber estuary in response to rising sea level through the Holocene, and physical, geochemical and biochemical evidence of the sedimentary history of the estuary in relation to the drainage basin, the last emphasising the human influence on sediment character.

The third section provides comparison to the Humber studies. Work on the sediments in the smaller Tees estuary shows the sedimentary sequence more dominated by fluvial input. Remarkable in this work is a correlation between a 1500-year, late Pleistocene varve record and the  $\delta^{18}\text{O}$  GISP (Greenland ice core) record, emphasising the significance of wide-spread paleoclimatic linkages. Other works in this section examine the sedimentary environment of the Fenland (Wash) and the outer coasts, including in the latter the evolution of dunes and barriers in relation to late Holocene sea level change.

Two papers that comprise the final section bring the previous work together and extend its application. The first provides a detailed reconstruction of isostatic sea level response along the entire study region in terms of sea level models. The second presents the Holocene paleogeography of the North Sea from application of geophysical models that incorporate ice-sheet reconstructions, earth rheology, eustasy and isostasy, documenting the need for further consideration of the history of the late Pleistocene ice sheet. Included in this work is a reconstruction of tidal regimes throughout the period.

The production values of the volume are high. The text is well edited and relatively free of errors. Figures are crisp and clean and the use of colour is a valuable asset, especially in complex maps. The index, although brief, provides useful direct entry to topics. Unfortunately, the cost of about \$200 (Can.) probably means that it will not be widely distributed in Canada either in individual collections or in our financially stressed academic libraries.

It can be argued that with the focus on the east coast of England the volume does

not live up to its title promising a balance of material from "around the North Sea". Nor, despite the interdisciplinary approach, are important questions fully addressed. For example, consideration of the hydraulics of fluvial backwater in response to rising sea level might have provided valuable understanding of the varying sediment delivery from land and accumulation in the estuaries. Nevertheless, there is much to recommend the work. It is a good example of the merit of a structured, multidisciplinary approach to environmental study and paleoenvironmental reconstruction. It documents a range of techniques and interpretations that have application in similar studies elsewhere, including, for example, the submerging coast of eastern Canada. This volume and the continuing publications in the refereed press from the project promised by the editors advance our understanding of much more than the local region they describe

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