enbe

Easington and Kilnsea
Geomorphology studies to inform environmental study

Holderness coastline, UK

Easington Lagoons – note the sea lies just beyond the far dune ridge

Client: Black & Veatch Ltd (working for the Environment Agency)

Services provided: assessment and evaluation of:

- wave and tidal conditions
- dune and beach evolution, and cliff erosion at neighbouring Kilnsea
- wave overtopping to lagoon area
- sediment transport
- effects of climate change
- predictions for short to long term evolution of the lagoons including habitat change

The saline lagoons are located on the rapidly eroding Holderness coastline. The lagoons form part of the proposed extension to the internationally important Humber Flats, Marshes and Coast Special Protection Area (SPA) and Ramsar site. Natural England and the Environment Agency were concerned that the effects of ongoing coastal erosion would threaten this internationally important feature. Black & Veatch (B&V) was appointed to identify the long term outlook for the designated features and the mitigation measures needed. B&V appointed ENBE Ltd to advise on coastal geomorphology.

ENBE examined the underlying physical processes and made predictions for the most likely future changes to this coastline, due both to natural factors (including climate change) and those resulting from human activities on the coast. The study included the analysis of wave and tidal conditions; dune and beach evolution; and assessment of sediment transport. An associated study at the neighbouring Kilnsea frontage examined cliff erosion. The study concluded on future evolution of designated habitat types, enabling B&V to assess the likely performance and impact of options.

"ENBE played a key role in identifying the physical processes and engineering risks at play at Kilnsea as part of this project, helping to define a sustainable way forward for the designated site and coastal protection assets in the area . "

Matthew Clegg/ B& V Project Manager and Chief Environmental Scientist