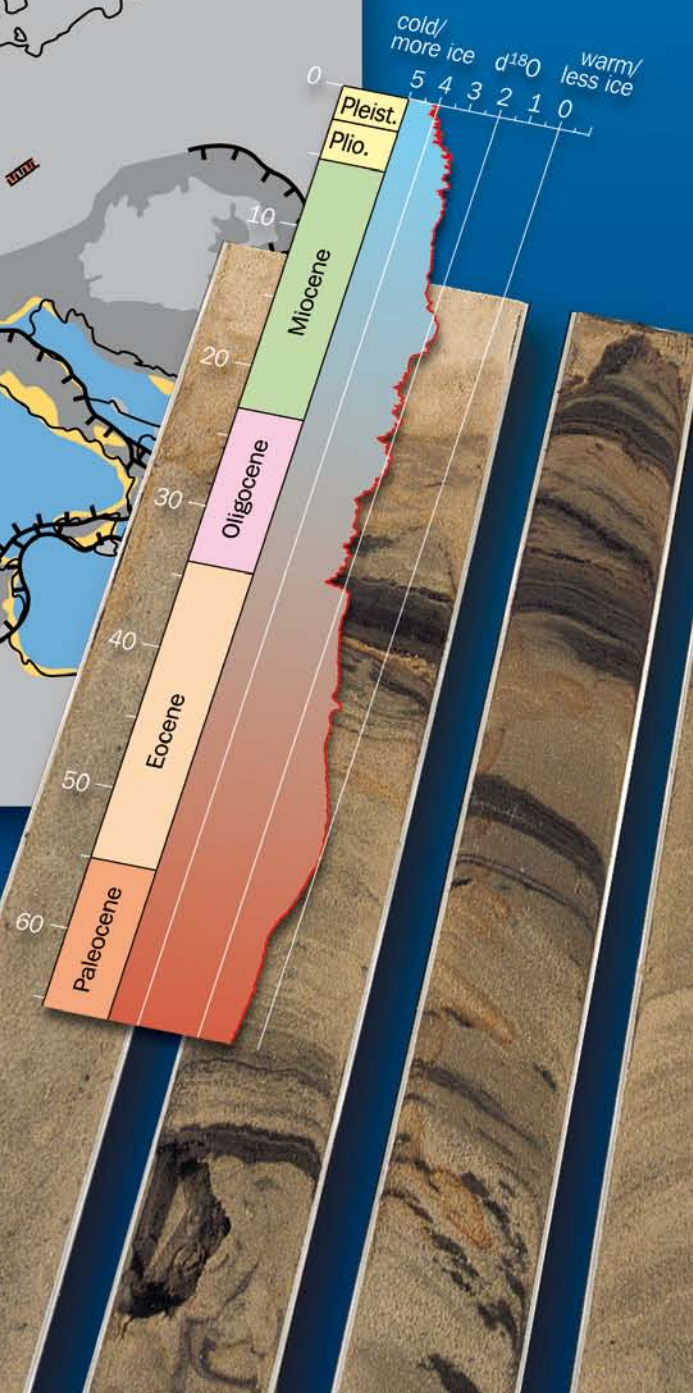
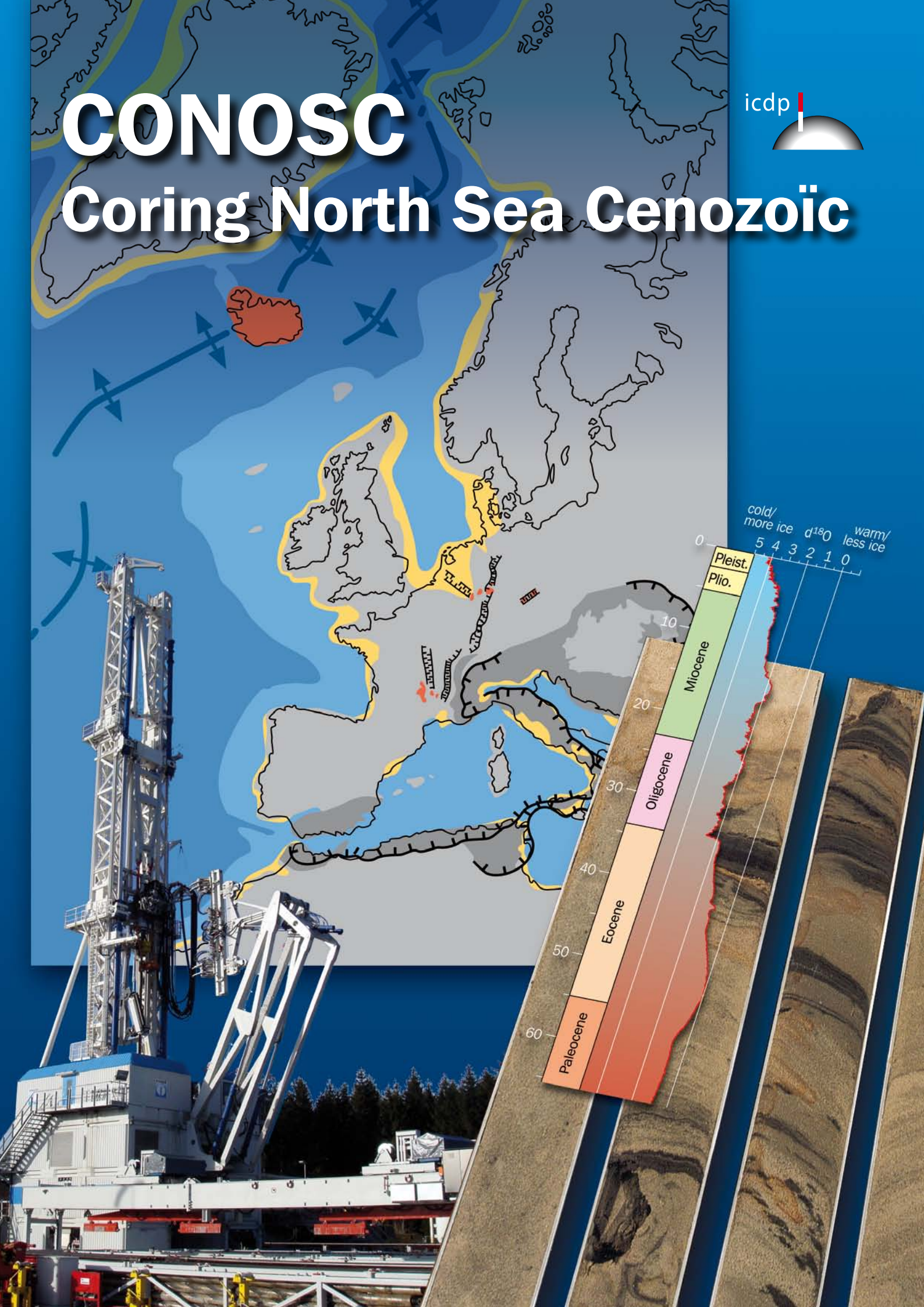
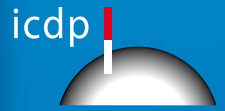


CONOSC

Coring North Sea Cenozoic



CORING NORTH SEA CENOZOIC (CONOSC)

RATIONALE

Accurate age control is a prerequisite for interpreting climate records, constraining regional sediment budgets, correlating marine and terrestrial archives, and studying the effect of geographic isolation on biota. In particular, long sedimentary records capable of recording the catchment-scale developments in sedimentary evolution as a response to climate change and orogeny are a much-needed constraint on sedimentation and carbon burial rates. Available evidence in the present-day onshore areas show near-continuous marine sedimentation with abundant terrestrial geochemical tracers and microfossils. However, a high-resolution continuous record of a near-shore Cenozoic setting from the North Sea Basin is not yet available. Retrieving that sequence from the North Sea Basin would unlock the full potential of this area for reconstructing Cenozoic climate and biotic changes, and targets sediments derived from the surrounding landmasses supplied by major fluvial systems draining the Baltic (Eridanos) and the Rhenish Massif and Alps (Rhine-Meuse fluvial systems).

PROPOSAL OBJECTIVES

The Coring North Sea Cenozoic (CONOSC) project will focus on two main research questions:

- *What is the long-term interaction between sediment accumulation and climate change?* Investigate source-sink interrelationships, carbon burial and river development in relation to changing Cenozoic climate gradients and Alpine tectonics.
- *How does geographic isolation impact ecosystem divergence?* Investigate Cenozoic extinctions rates, speciation and migration patterns, and respective impacts on geological timescale calibration in NW Europe.

Although the North Sea Basin is extensively drilled for hydrocarbons the Cenozoic part of the infill is generally not targeted and high-quality cores as well as a high resolution stratigraphical framework for this Era are lacking. Therefore, CONOSC aims to drill the Cenozoic sedimentary record at two onshore situated sites in the Netherlands that collectively span the larger part of the Cenozoic in a marginal marine geological setting. The Quaternary and Neogene record will be targeted in the Roer Valley Graben while the Paleogene will be retrieved from well-developed sequences in the Northern Part of the Netherlands. It is intended to core the full Cenozoic sequence at both sites, respectively c.1800 m and 1200 m.

Apart from recovering continuous sediment cores, a full suite of wire line logs (including paleomagnetic logging) will be applied. In addition, the sites allow direct geophysical monitoring of natural and human-induced seismicity.

The acquired set of data and samples will be analysed for a range of biological, physical and geochemical proxies. The result of that analysis will be employed to calibrate stratigraphy, produce records of terrestrial and regional palaeoclimate, and

regional vegetation development. Core scans (imaging, XRF, near-infrared) aim to deduce fluvial regimes, sediment provenance, and patterns of climate change in the river catchments.

WORKSHOP

A firm scientific base for the project will be developed at the ICDP-funded workshop, 18-20 March 2015, Utrecht, The Netherlands. The aim of the workshop is to narrow down the scientific objectives, to determine the best drilling and sampling techniques, and to extend the group of participating scientists. The workshop will be open to interested scientists from academia and industry.

CONTACT

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