

Stratigraphic sequence representative North Sea basin

Illustrates

- ▶ how a deeper CO₂ storage target formation overlain by a mudstone sequence could constitute a CO₂ storage system.
- ▶ The actual properties of sealing units should be determined via site investigation and appraisal studies.
- ▶ Having established the basic concepts defining the storage target—deep and porous rock formations with sealing potential—we can begin to address the specific questions for identifying suitable storage sites.

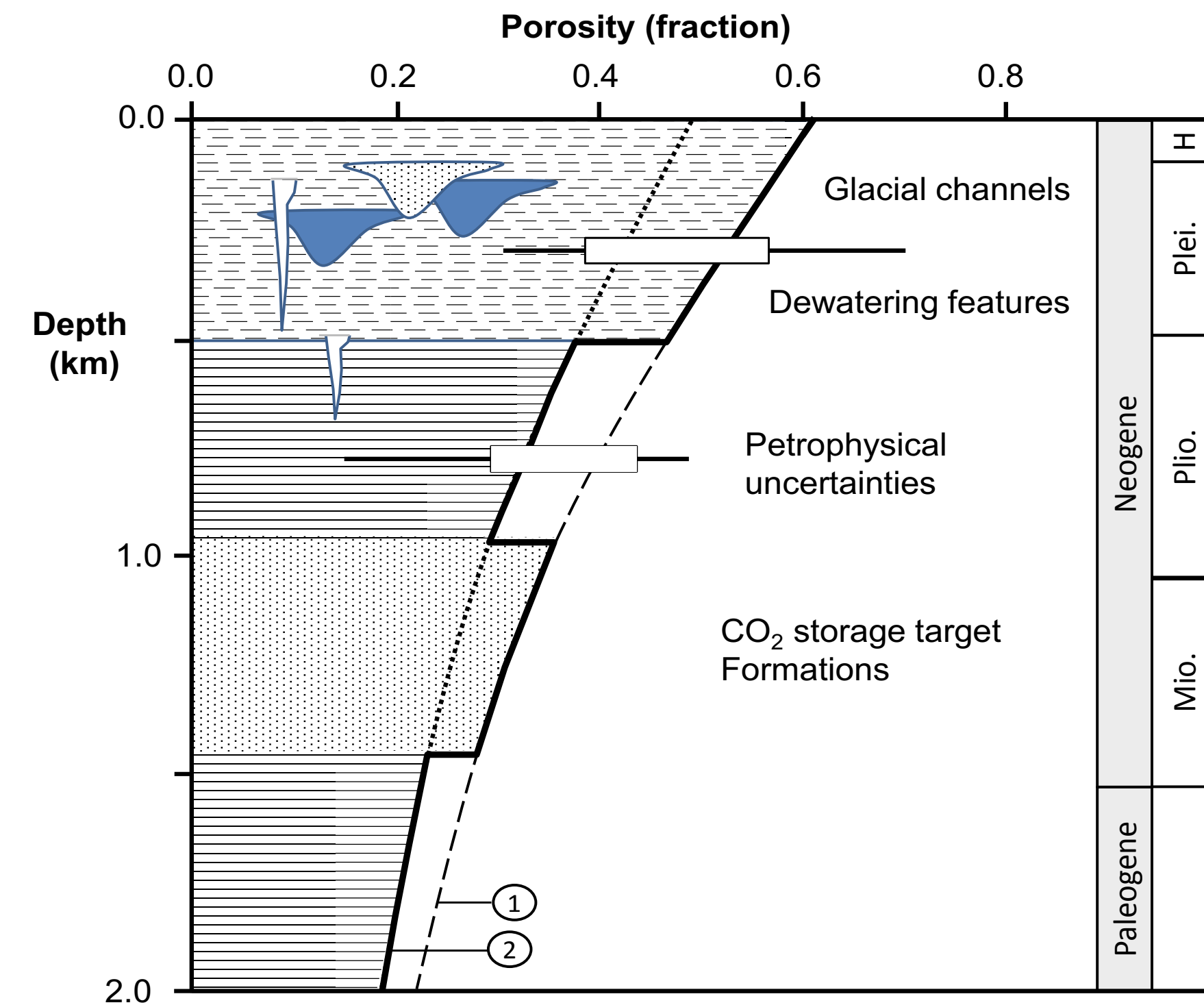


Fig. 2.2 Conceptual sketch showing a shallow stratigraphic sequence representative of the North Sea basin. Typically, a Miocene CO₂ storage target formation would be capped by Pliocene mudstone sequences forming the main containment system. The role of shallow glacial channel and dewatering features in the overlying Pleistocene sequence may be a key issue for assuring storage containment. Reference porosity curves are shown based on (1) Sclater and Christie (1980), and (2) Marcussen et al. (2010). The actual porosity and permeability of the shallow basin sequence (<1000 m) is variable and uncertain and would need to be determined via site investigation studies

from Philip Ringrose

Geological Storage of CO₂

1. The basic concept is to **store captured CO₂ underground** in reservoirs that would otherwise contain water, oil or gas
2. We need to be deep (greater than 800m) to ensure CO₂ is in a dense form – the **super-critical phase**
3. These are also the depths where we are confident that natural gas has been trapped **for millions of years**
4. But the big questions are:
 - Where do we store it?
 - How much CO₂ can we inject?
 - Can we store it safely?
 - Can we store it cost-effectively?

