

Present is key to the past...

Applied paleontology is being used to discover the paleoclimate of the NW Passage. We are looking for indicator microfossils to show us when past ice-free conditions existed in the passage (as part of subproject - 1.6 the NorthWest Passage).

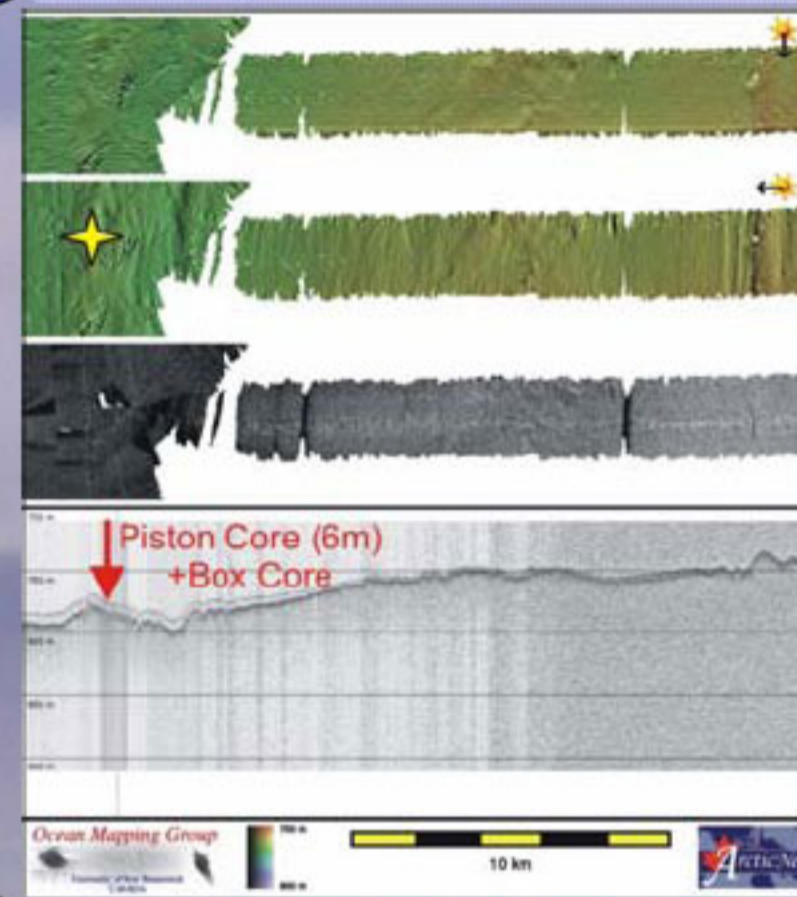
1



In August 2004 with the beginning of ArcticNet aboard the *NGCC Amundsen*, site 2004-804-009 (Lancaster Sound) was visited, and this ~6 m core was collected.

2

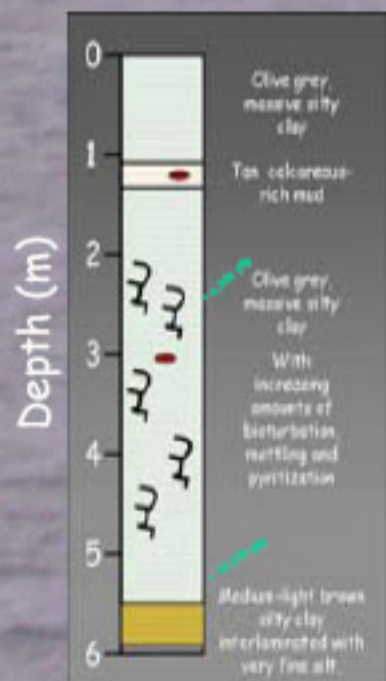
Based upon the records collected from ship tracks of CASES 2003, several sites for 2004 & 2005 ArcticNet missions were chosen.



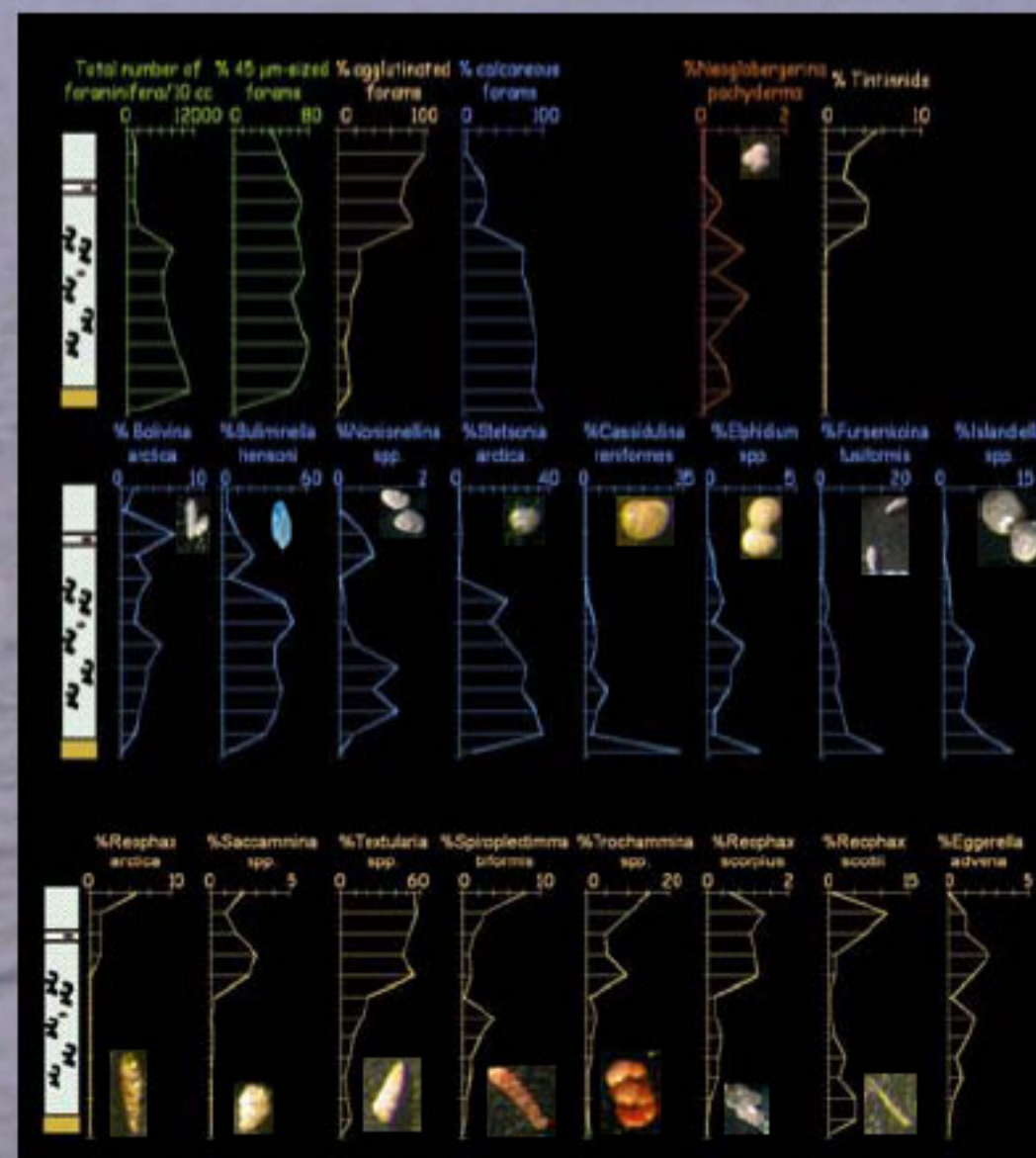
Site selection for piston coring is based upon relative location, suitable seafloor ('soft' sediments), and containing a layer of undisturbed sediment.

3

In the middle panels of the foraminifera - a striking change in the faunas also occurs with this change in sediment physical properties.



The simplified sediment core description shows a predominately olive grey silty clay, with intense bioturbation of the sediments from ~2 m until 5 m.



The change in dominance from **calcareous** faunas at depth, to **agglutinated** faunas indicate a change in the composition of the waters bathing this site over time...

Calcareous forams tend to be abundant under conditions of more saline and stable waters, such as underneath ice-cover. *N. pachyderma* - the only planktic foram tends to be particularly abundant in areas of upwelling, and thus high productivity.

Agglutinated forams dominate under conditions of increased productivity and organic matter content, and lesser carbonate preservation.

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