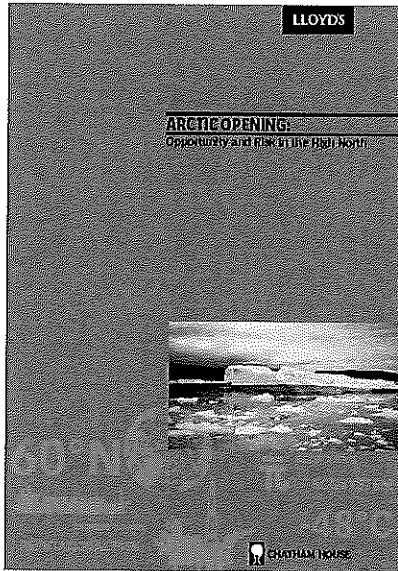


Insurance - Lloyd's of London



Underwriting syndicates in the Lloyd's market are major participants in both cover for hull and machinery and protection and indemnity (P&I) insurance

Ships operating in Arctic waters are very likely to be insured in the London market

Lloyd's recognise the special risks from Arctic operations but recognise development is inevitable.

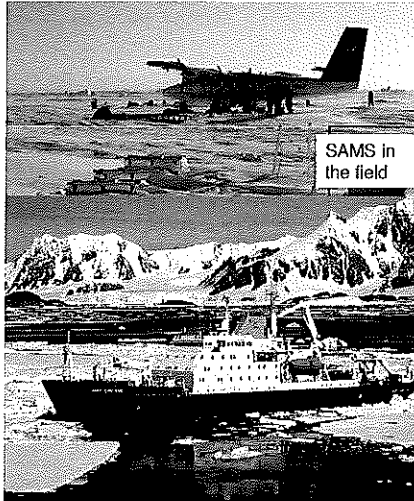
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Engineering, Environmental Consulting and Legal Advice

- Engineering design
 - HR Wallingford designing LNG terminals for Arctic Russia
- Environmental Impact Assessments
- Sea ice distribution forecasts and ice mechanical property studies
 - UEA, Cambridge, UCL
- Remote sensing products
 - Ship routing
- Legal advice
 - DWF – Michael Kingston

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UK Government Funded Research Services



British Antarctic Survey – Research Ships, Aircraft and Base in Svalbard

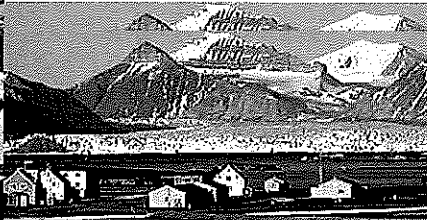
Scottish Association for Marine Science

National Oceanography Centre

British Geological Survey

Plymouth Marine Laboratory

CPOM, Scott Polar Research Institute and other university research groups

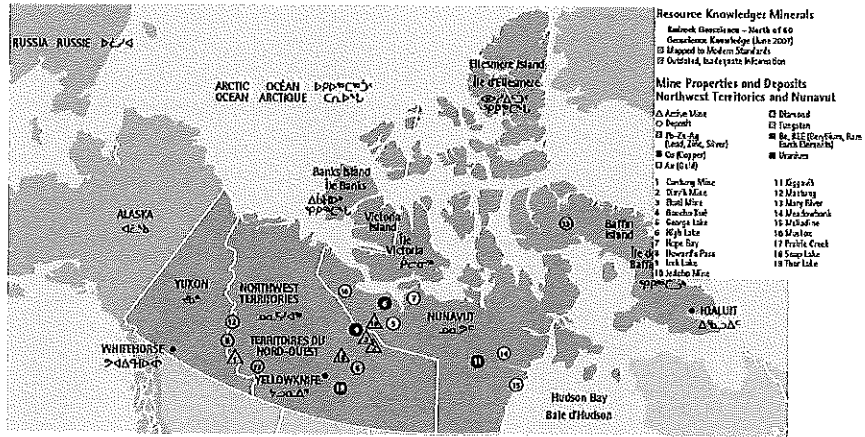


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Metals and Mining

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Canadian metals and mining opportunities

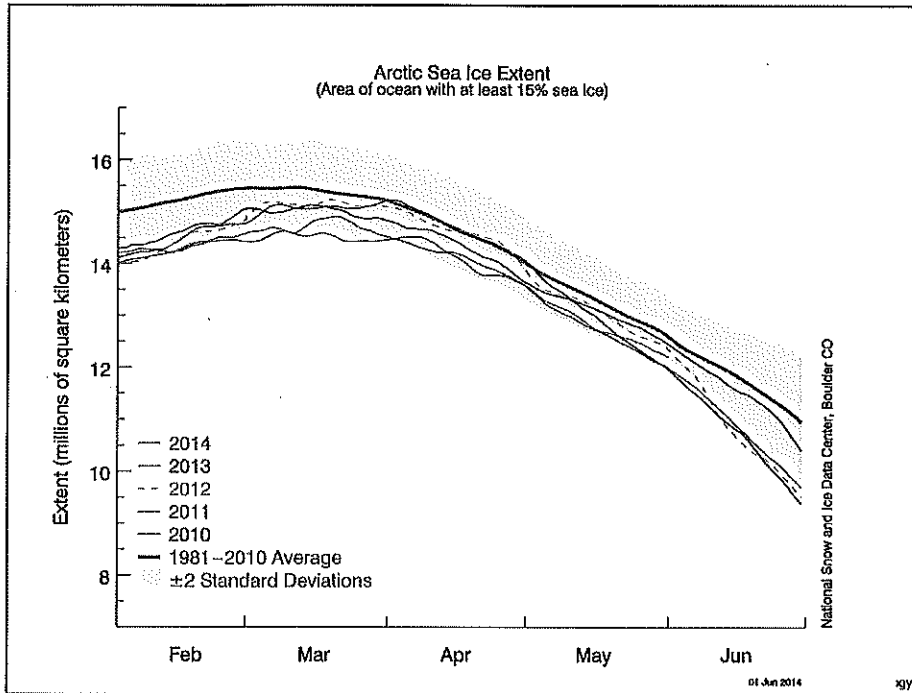


Alan Kessel, Deputy High Commissioner for Canada in London

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Shipping

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Norilsk Nickel and Copper Transport

Year round operation Dudinka to Murmansk of containerised nickel ore

Extreme ice, current, wind and wave conditions

Water depth constraints

Vessels built in Aker Yard



[Video of ice-breaker design for nickel ore transport](#)

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Tourism



Uncharted waters

Limited search
and rescue
facilities

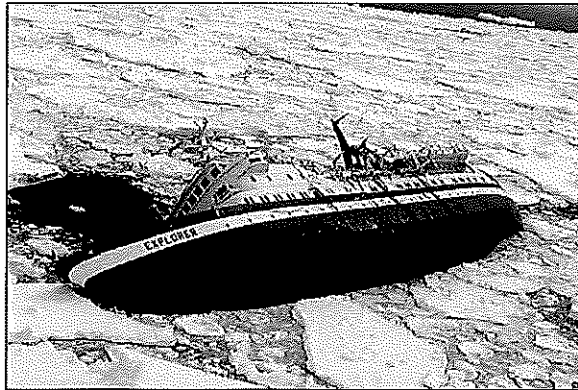
Ocean going tugs
limited

Ships may not be
rated for
navigation in area

Yachts – many
British travelling
North

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Loss of MS Explorer in the Antarctic



In 1984, the MS Explorer was the first cruise ship to navigate the Northwest Passage. She was lost on 23rd November 2007 off the South Sandwich Islands, Antarctica. The third party liability exposure was insured by a P&I Club in London.

AP Image

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Summary

- The Arctic is not a homogeneous region – development challenges in Alaska, Canada, Norway and Russia are quite different environmentally and politically
- Arctic development options need to be assessed in a global context
- Arctic development is inevitable; the indigenous peoples want development
- Developers understand the Arctic environment is fragile; one mistake and the licence to operate will be lost
- The UK business community has a great deal to offer to support responsible development of resources and the growth of shipping in Arctic waters

Dr Dougal Goodman, The Foundation for Science and Technology