

Arctic Oceanography Timeline and Data Recovery Since 1860

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OUTLINE

- Database: the basic concept
- Expeditions in Arctic 1860-present
- Tools for data rescue
- Database for the International Polar Year: current status and outlook
- New data products for the IPY

BASIC CONCEPT

NODC is in charge of the development of the multipurpose oceanographic database

CONSEQUENCES

NODC is in charge of providing metadata which allows users to chose oceanographic data suitable for the solution of his/her specific problem

USER is in charge of choosing data suitable for the solution of his/her specific problem

EXPEDITIONS IN THE EASTERN ARCTIC

1812-1915

- 1812-1825 First deep-sea observations in the Arctic
- 1876 First oceanographic data center (J. Prestwich)

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PHILOSOPHICAL TRANSACTIONS

OF THE

ROYAL SOCIETY

OF

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[587]

XXI. *Tables of Temperatures of the Sea at different Depths beneath the Surface, reduced and collated from the various observations made between the years 1749 and 1868, discussed. With Map and Sections.* By JOSEPH PRESTWICH, M.A., F.R.S., F.G.S.

Received May 14,—Read June 18, 1874.

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§ I. Introduction.

THIS communication, the result of an inquiry having originally reference to the bearing of the subject on certain geological questions, was commenced more than twenty years ago, but abandoned for a time, partly owing to the pressure of other engagements, and partly waiting more accurate information of the range of life at depths*. The great impulse given to these questions by the more recent expeditions of the 'Lightning'

* A few of the geological questions were, however, noticed, and some of the early deep-sea temperature-observations given, in the author's Anniversary Address to the Geological Society of February 1871, Quart. Journ. Geol. Soc. vol. xxvii. pp. xliii–lxxv.

EXPEDITIONS IN THE EASTERN ARCTIC 1812-1915

1812-1825	First deep-sea observations in the Arctic
1876	First oceanographic data center (J. Prestwich)
1878-1884	Dutch vessel <i>William Barents</i> , 7 cruises
1878-1879	<i>Vega</i> expedition. A. E. Nordenskiöld
1882-1883	IPY I, 2 cruises in the Kara Sea
1893-1896	<i>Fram</i> expedition. F. Nansen
1898-1906	Cruises in Barents, White Seas (Russia)
1899-1914	Cruises in Barents, White and Kara Seas (Russian Navy)
1910-1915	<i>Taymir</i> and <i>Voygach</i> , all Eastern Arctic Seas (Russian Navy)

Total..... 4,000+ profiles

RUSSIAN EXPEDITIONS IN THE EASTERN ARCTIC 1918-1945

- | | |
|-----------|--|
| 1918-1941 | Exploration of the biological resources of Barents and White Seas (300+ cruises) |
| 1918-1938 | Expeditions across all Eastern Arctic Seas (~100 cruises) |
| 1932-1933 | International Polar Year II
12 cruises across all Eastern Arctic Seas |
| 1941-1945 | White Sea. World War II (30+ cruises) |

Total....20,000+ profiles

RUSSIAN EXPEDITIONS IN THE EASTERN ARCTIC 1946-1990

Cruises by HYDROMET Thousands

Cruises by FISHERIES..... Thousands

Total..... **500,000+**profiles

ARCTIC DATABASE

CURRENT STATUS AND OUTLOOK

World Ocean Database 1994 30,000+ st.

World Ocean Database 2005 240,000+ st.

Outlook

World Ocean Database 2009 310,000+ st.

NEW PRODUCTS

- 80-Year time-series of temperature and salinity for the Barents Sea
- 40-Year time series of temperature and salinity for Kara and White Seas
- Update the Arctic bibliography
- Instruments-Methods vs. Years