



MANAGING AND DISTRIBUTING OPERATIONAL OCEANOGRAPHY DATA AT THE U.S. NATIONAL OCEANOGRAPHIC DATA CENTER



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Providing Global Ocean Temperature & Salinity Data for Operations and Research

Acknowledgments

Many agencies¹ have played important roles in the development of the Argo and Global Temperature-Salinity Profile Programs data systems. Without their efforts, this compilation of data and information would not have been possible. Special thanks are extended to the Ship of Opportunity Program of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology for being a major data contributor.

Introduction

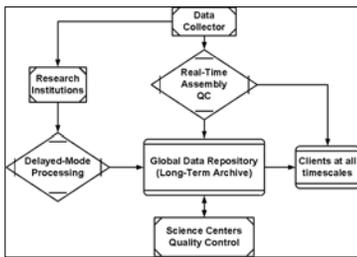
The U.S. National Oceanographic Data Center (NODC) participates in the Argo and Global Temperature-Salinity Profile Program (GTSP) projects, which are sponsored by the Climate Variability and Predictability program of the World Climate Research Programme.

The NODC operates the Global Argo Data Repository for Argo data and assembles both real-time and delayed-mode data into a continuously managed database for the GTSP data. The data stream of the two operational ocean observing systems contains upper ocean temperature and salinity data from Expendable Bathythermographs (XBTs), fixed buoys, profiling floats, Conductivity-Temperature-Depth (CTD) sensors and sampling bottles.

Objectives

- Improve oceanographic data management procedures.
- Maintain authoritative reference version of original operational oceanographic data and information.
- Provide high quality data to a wide variety of users in a timely and useful manner.

Generic Operational Data Flow



¹ These include the Australian Commonwealth Scientific and Industrial Research Organisation, Bureau of Meteorology, and Oceanographic Data Centre, the British Oceanographic Data Centre, the Bundesamt für Seeschifffahrt und Hydrographie, the Canadian Marine Environmental Data Service, the Indian National Center for Ocean Information Service, the Japanese Oceanographic Data Centre, the Japanese Meteorological Agency, the Korean Meteorological Agency, the French Surface and Subsurface Data Centre, the U.S. Fleet Numerical Oceanographic Center and NOAA's Atlantic Oceanographic and Meteorological Laboratory, and Scripps Institution of Oceanography.

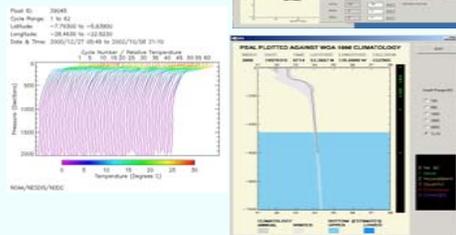
² World Ocean Atlas

System Functionality

- Implement international standards for data quality control.
- Manage parameters other than temperature and salinity.
- Audit trail and version control of data loaded into the database.
- Preserve data and information of the data in original forms.
- Store information about the type of XBT probe to assist users in determining whether or not to depth correct the XBT data.

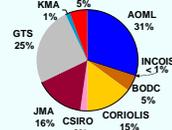
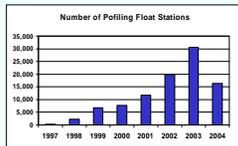
Assessing Data Quality

- Platform Identification
- Location and Date Tests
 - Impossible date and location
 - Position on land test
 - Impossible speed test
- Profile Tests
 - Global and regional parameters
 - Increasing depth/pressure
 - Top and bottom spikes
 - Gradient
 - Density and temperature inversion
- Climatologic Tests
 - WOA² 2001 Monthly Climatology
 - WOA 2001 Seasonal Climatology
 - WOA 2001 Yearly Climatology
- Profile Consistency Check
 - Waterfall plots

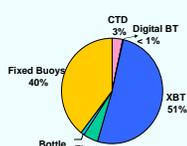
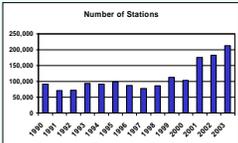


Data Volumes

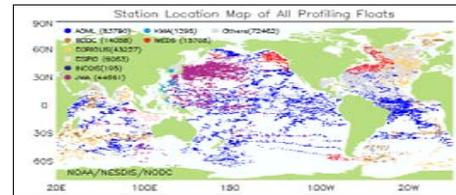
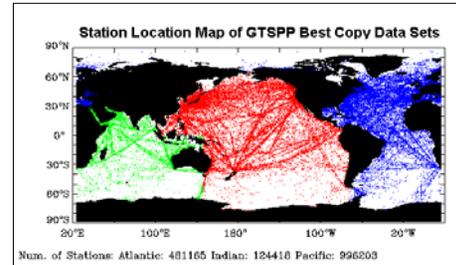
Global Argo Data Repository



GTSP Best Copy Data Sets



Station Distribution Maps



Data Distribution Formats

- Network Common Data Form (NetCDF) Format
 - Compatible with *ncBrowse* and *Ocean Data View*
- ASCII Text Format
 - Compatible with *Ocean Data View*
- Canadian Marine Environment Data Service Text Format

Data Display & Analysis Tools

- Argo Data Explorer
 - Java application being developed for sub-setting data on the Argo CD.



- Ocean Data View:
 - Software package for the interactive exploration and visualization of oceanographic geo-referenced profile or sequence data.



- ncBrowse:
 - Java application that provides interactive graphical displays of data.



Online Data Access



Access Argo data served by NODC at <http://www.nodc.noaa.gov/argo/>



Access GTSP data served by NODC at <http://www.nodc.noaa.gov/GTSP/>

Current Status: Operational

- Global Argo Data Repository
 - Serve daily data from the US Global Ocean Data Assimilation Experiment (GODAE) Server (http://www.nodc.noaa.gov/argo/latest_data.html).
 - Serve monthly updates of the floats handled by Argo Australian, British, Canadian, Indian, Japanese, Korean, and US Data Assembly Centers (http://www.nodc.noaa.gov/argo/dac/retro_data.html).
- GTSP Continuously Managed Database
 - Publish the real-time data sets three times a week (http://www.nodc.noaa.gov/GTSP/access_data/gtsp-rt.html).
 - Update the best copy data sets once a year (http://www.nodc.noaa.gov/GTSP/access_data/gtsp-bc.html).

Contact Us

If you have any questions or suggestions, wish to provide data to the archive, or to obtain data in either real-time or delayed mode, please contact:

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