



GLOBAL TEMPERATURE AND SALINITY PROFILE PROGRAMME (GTSP)

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USA

SOT – V
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International Oceanographic Data and Information Exchange
International Oceanographic Commission of IODE/IOC

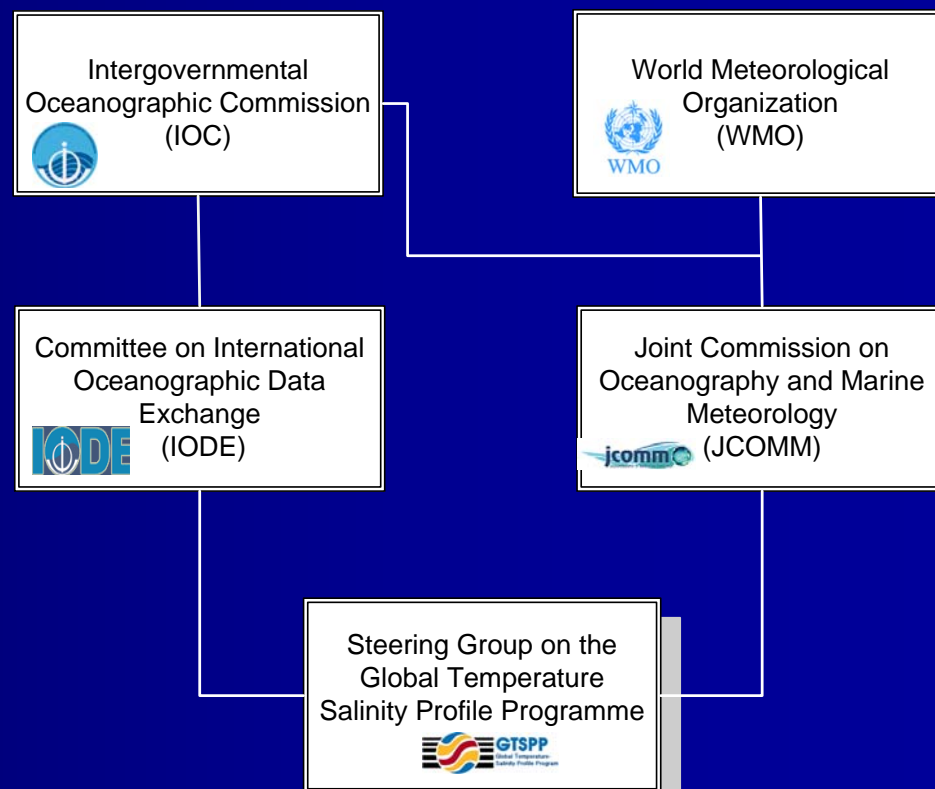




What's GTSP?

GTSP = Global Temperature Salinity Profile Programme

- GTSP is a joint WMO-IOC program designed to provide improved access to the highest resolution, highest quality data as quickly as possible.
- GTSP began as an official IODE pilot project in 1989.
- It went into operation in November 1990.





International Partners

■ Active Participants: Argentina, Australia, Canada, France, Japan, Germany, and USA

- Argentina: Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP); Delayed-Mode Data Assembly Center (DM-DAC) and QC
- Australia: AODC, BOM, CSIRO; DM-DAC and QC
- Canada: ISDM: Real-Time data assembly, QC and Duplicates Management
- France: SISMER, Delayed-Mode Data Assembly and QC
- Japan: Japan Meteorological Agency, Real-Time data assembly
- Germany: Federal Maritime and Hydrographic Agency (BSH)
- USA: AOML, Real-Time Data Center and QC; NODC, Continuously Managed Database (CMD)

■ 2007 Participants (DM-DAC)

- National Marine Data and Information Service (NMDIS) of China
- Federal Maritime and Hydrographic Agency (BSH) of Germany

■ 2008 Participants (DM-DAC)

- Japan Oceanographic Data Center (JODC)
- British Oceanographic Data Center (BODC)

■ 2009 Participants (DM-DAC)

- Indian National Institute of Oceanography (NIO)
- Italian National Agency for New Technologies, Energy and the Environment (ENEA)

■ Contributing countries include those making at sea profile observations

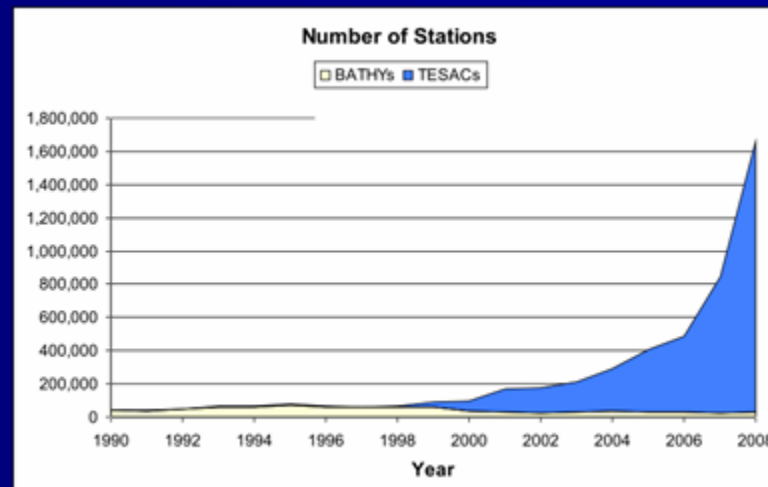




Data Volume as of December 2008

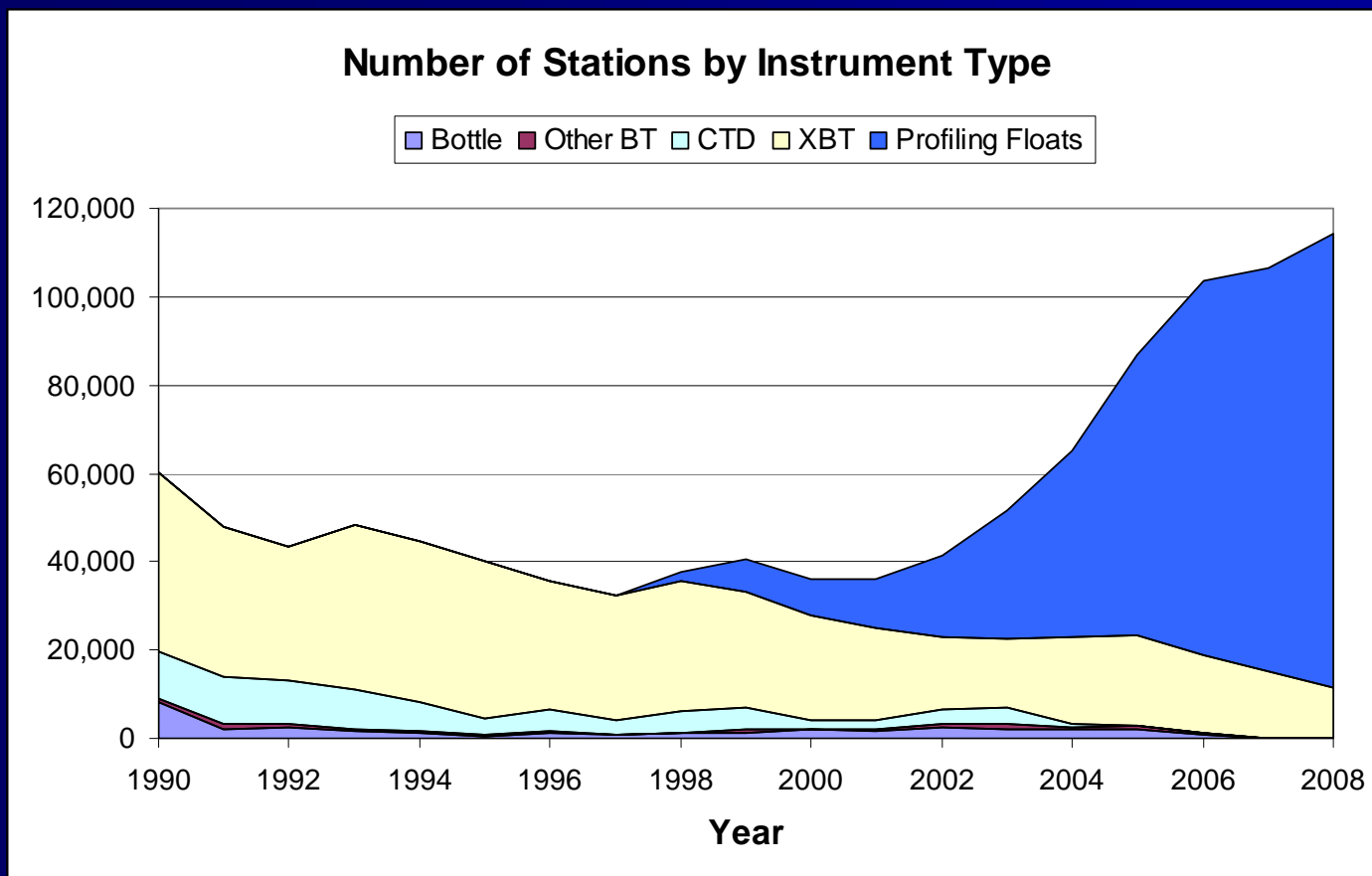
More than 80% of ship reports get into the archives within 3 days and nearly 90% of Argo arrive within 24 hours. These are significant improvements from the start of GTSP.

- Volumes of real-time BATHY reported steadily increased from 24,855 in 2007 to 27,775 in 2008.
- TESACs have increased due to Argo and moorings that report hourly observations. Almost 1.6 million profiles in 2008.





GTSP Data Sorted by Instrument Type





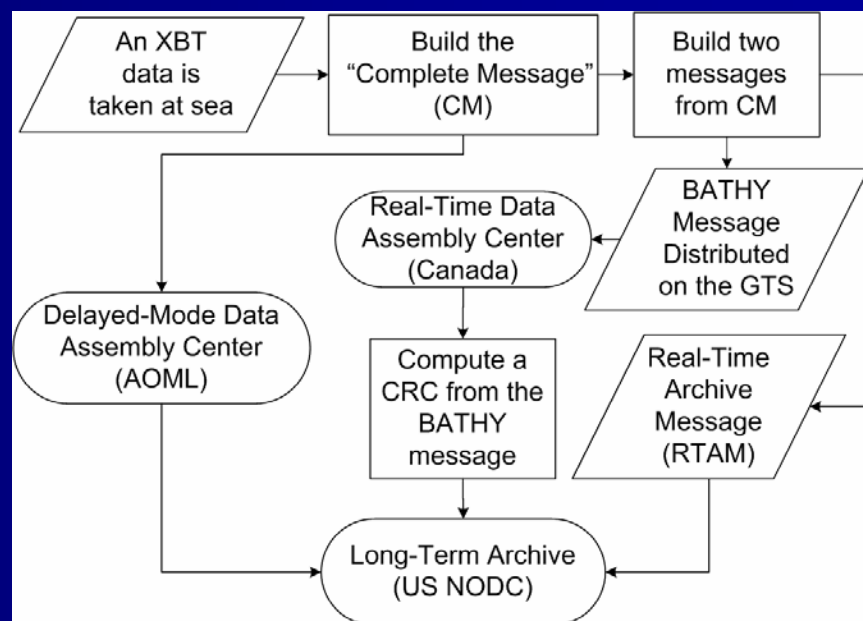
Highlights of GTSP Activities

1. XBT Data Management

- Preserve original XBT data.
- Corrections to the depth would be applied only to the data that were placed on the final WOCE DVDs.

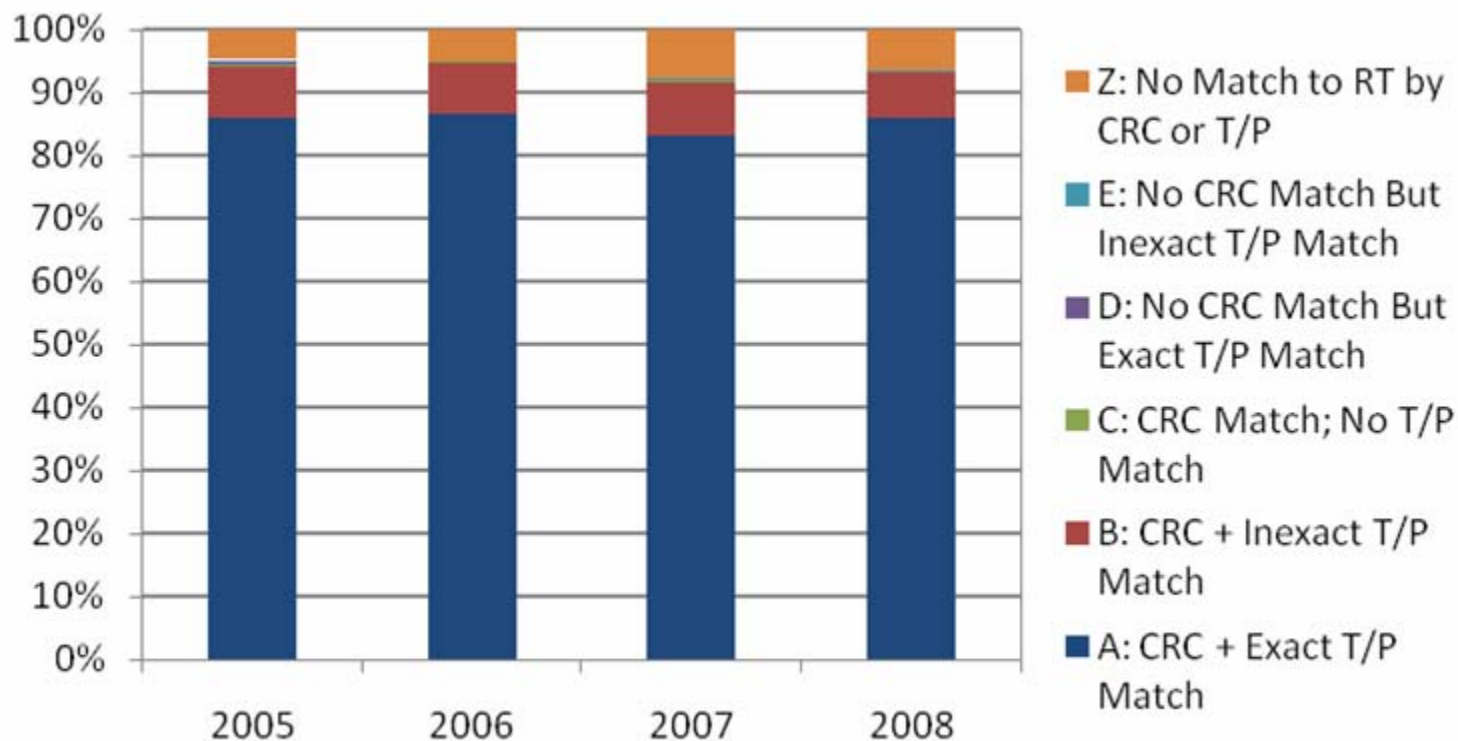


2. Unique Data Tag Identification





CRC Scheme Test Results





Online Data Delivery

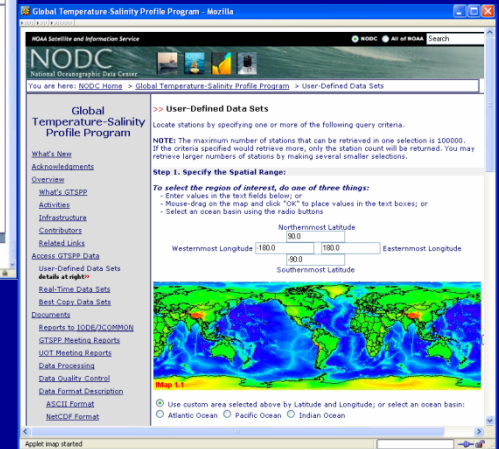
- Access Data
 - Real-Time data
 - Best Copy Data
 - User-Defined Data

■ HTTP Server

<http://data.nodc.noaa.gov/gtsp/>

■ FTP Server

<ftp://ftp.nodc.noaa.gov/pub/data.nodc/gtsp>





Online Data Delivery: GTSPSP Web Interface (GWI)



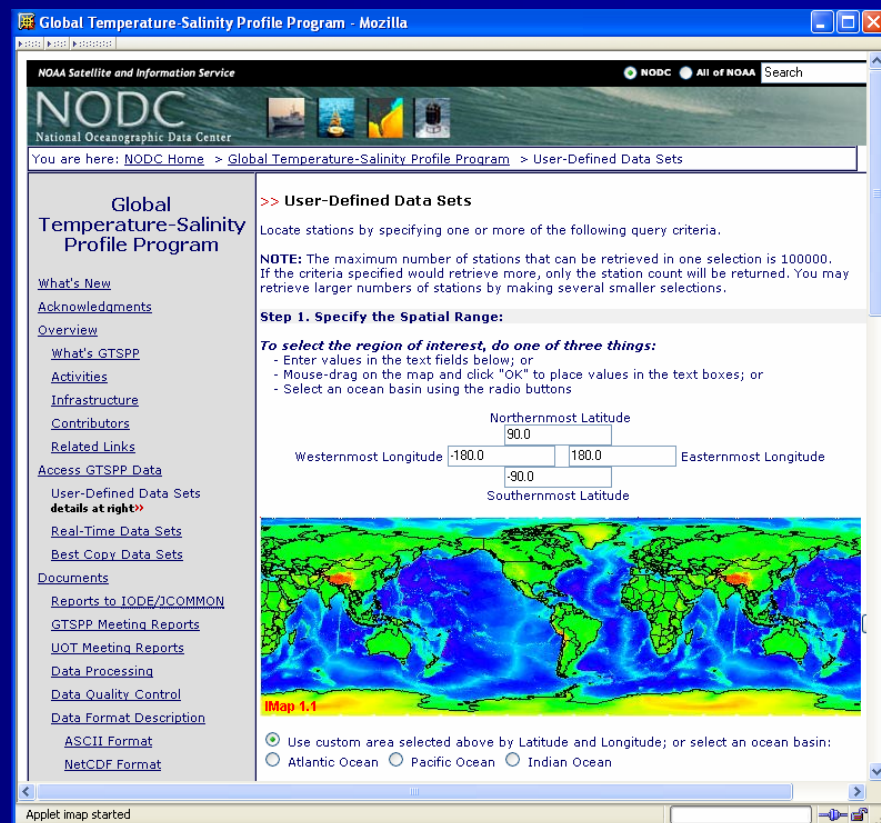
<http://www.nodc.noaa.gov/cgi-bin/gtspp/gtsppform01.cgi>

Ability to search by:

- Spatial Range (including 3 options)
 - Latitude-longitude text boxes
 - Rubber-band dragging on the map
 - An ocean basin using the radio button
- Date Range (1990 – Present)
- Season Filter
- Data Mode
(Real Time, Delayed-Mode, or Best Copy)
- Data Type
(Argo Profiling Floats,
TAO/TRITON/PIRATA Fixed Buoys,
BOT, CTD, MBT, XBT)

Products:

- List of Station numbers
- Retrieve data and/or display in HTML





Offline Data Delivery

DVD Features

- Written to the ISO9660 format with the RockRidge extension.
- Data stored in the netCDF format, sorted by years and months, then compressed.
- All documents including meeting reports.
- Tools for exploring the data.
- Data size of about 14 GB written to three single layer DVD5±R discs or two double layer DVD9±R discs.

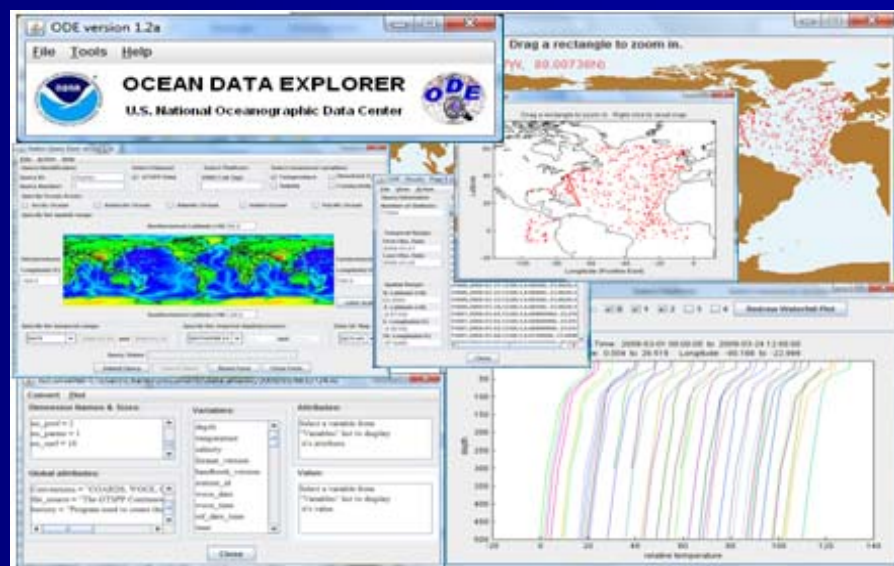




Ocean Data Explorer (ODE)

The ODE application is a software package that provides graphic exploration tools to examine oceanographic data stored on optical disc media. It contains:

- SQForm: Station Query Form
- ncConverter: Convert NetCDF files



Snap Shoots of the ODE features

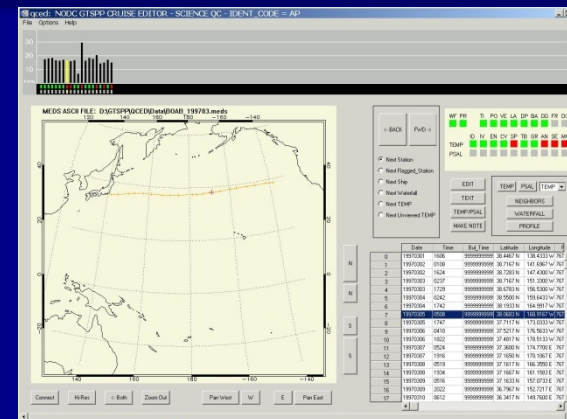




Data Quality Cruise Editor: QCED

Features:

- Map of ship position for visual inspection of the cruise.
- Bar graph of the ship speeds between stations in the cruise.
- Waterfall plot of neighboring profiles.
- Profile plot overlaid on the World Ocean Atlas 2001 climatology and ETOPO5 Bathymetry plots
- Temperature/Salinity plot when both are available.
- Formatted text display of all fields from the data file.
- Key metadata displayed in a scrolling list.
- Performs a suite of automated data quality tests and displays "trouble lights" to draw operator attention to questionable data.
- Operator may edit
 - Time and Position.
 - QC flags for temperature or salinity values.






Highlights of Work Plans

■ 2009

- Update the GTSPP RT QC Manual.
- Document the CRC scheme.
- Submit the RT QC and CRC proposals for IODE/JCOMM Standards Process per IODE committee's request.
- Complete bi-annual report for 2007–2008.
- Present the GTSPP community white paper at the upcoming OceanObs'09 Conference.

■ 2010 – 2011

- Convene a two-day workshop at the IODE Program Office in May 2010.
- Design and Publish GTSPP data on DVD for using in the IODE training/outreach program in 2011.





Acknowledgments



- US NODC Management
- NOAA PRIDE Program
- Ship Of Opportunity Programme (SOOP)
- IODE Data Centres
- IODE GODAR Project
- Staff at AODC, BOM, CSIRO, ISDM and SISMER for processing delayed-mode data
- Mr. Robert Keeley for his leadership of the GTSPP till 2007
- Dr. Ann Thresher for her assistance in managing the GTSPP since May 2007
- Dr. Norm Hall for managing the GTSPP database (CMD)
- Ms. Melanie Hamilton for processing the GTSPP data





THANK YOU ALL!

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