Global Temperature and Salinity Profile Programme

A World Wide Network Providing Global Temperature and Salinity for Operational Forecasting and Climate Research

Marine Data Stewardship Division
NOAA, National Oceanographic Data Center
1315 East-West Highway, Silver Spring, Maryland, USA

1. Objectives

- To provide timely access to the highest quality, highest resolution temperature and salinity profiles data.
- To Implement data flow monitoring system for improving the capture and timeliness of real-time and delayed-mode data.
- To Improve and implement agreed and uniform quality control and duplicates management systems.
- To facilitate the development and provision of a wide variety of useful data analyses, data and information, products, and data sets.

2. Infrastructure

- **Global Telecommunication System (GTS)**: Carries real-time data from ships and buoys in support of the IOC/WMO Integrated Global Ocean Services System (IGOSS).
- **IODE Data Centres**: Contribute data, monitor the project, and distribute products. These are national oceanographic data centers which participate in the International Oceanographic Data & Information Exchange (IODE) System of the International Oceanographic Commission.
- **Continuously Managed Database (CMD)**: Maintains the up-to-date global temperature-salinity data, replaces near real-time records with higher quality delayed-mode records as they are received, and creates and distributes copies of the data on CD-ROM and other media.
- **Data Product Center (DPC)**: Perform analysis of all the GTSPP data in the region of interest to assess its data quality consistency, provide feedback to data collectors about the results of the analysis, and prepare and distribute data products on a regular basis.

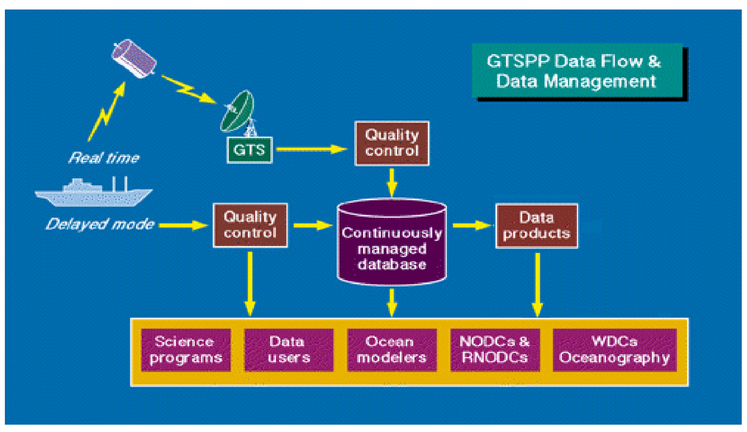

Figure 1. A schematic diagram shows the infrastructure of the GTSPP data flow and data management.

3. Assessing Data Quality

- Duplicate Elimination Check
- Platform Identification
- Location and Date Tests
- Profile Tests
- Climatology Tests
- Profile Consistency Tests
- Visual Inspection
- Unique Data Tagging System

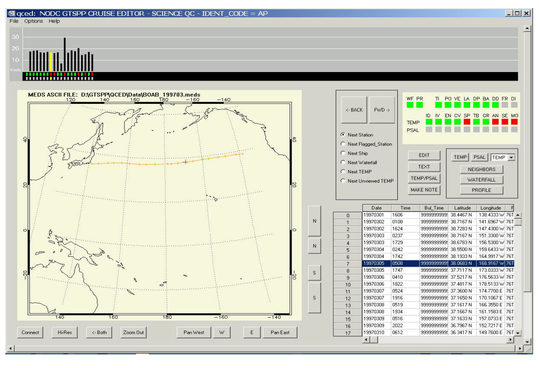

Figure 2. Main window of a data quality control editor develped by the US NODC.

4. Data Processing Flows

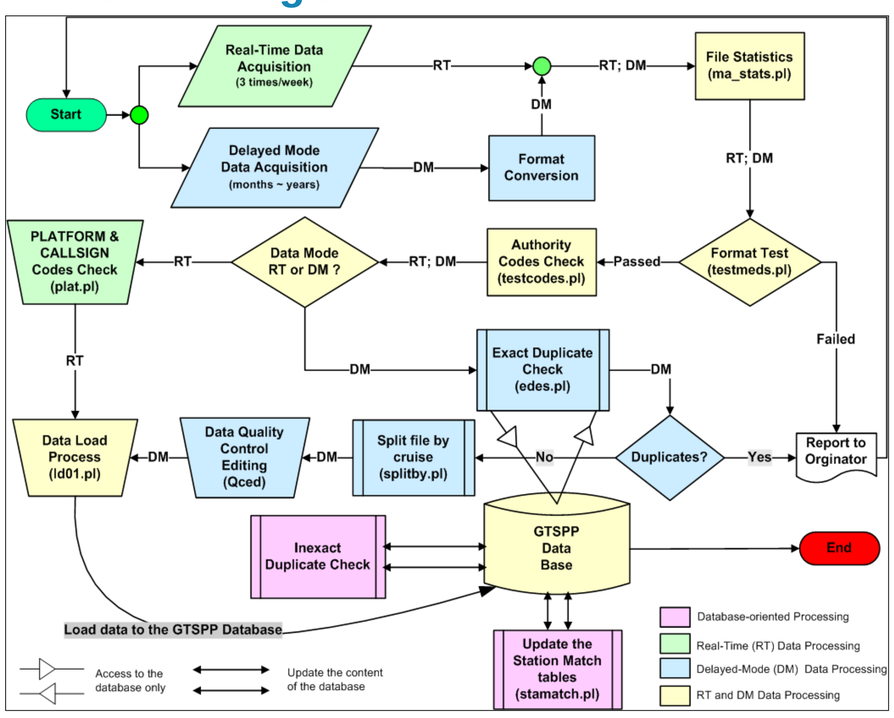

Figure 3. GTSPP data processing diagram

5. Data Volume Evolution: 1990 – 2011

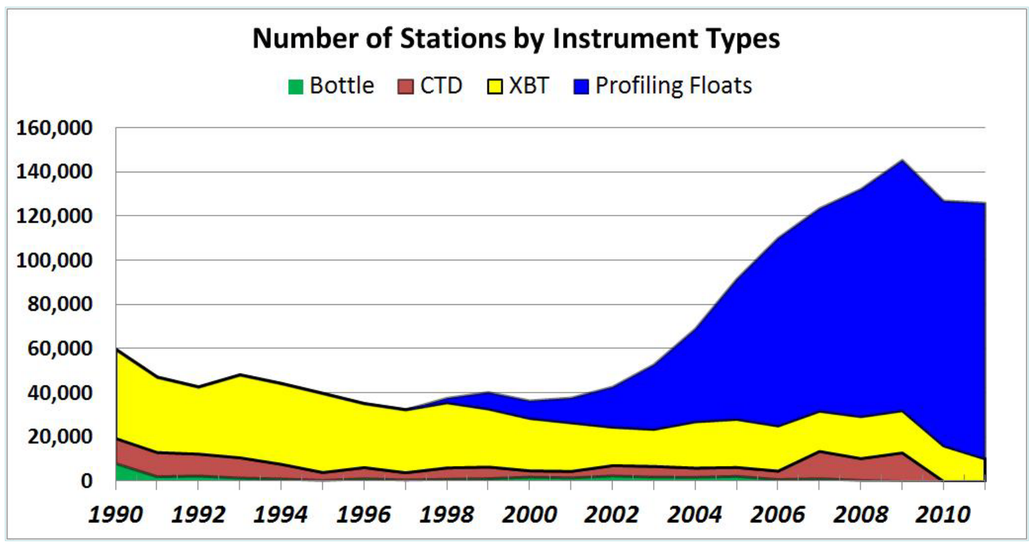

Figure 4. Evolution of GTSPP data volume from 1990 to 2011. The numbers of drifting and fixed buoy stations are not shown. (CTD = Conductivity, Temperature and Depth; XB = Expendable Bathythermograph; and PF = Profiling Float)

6. Feature Data Type: Marine Mammals-derived CTD

In July 2008, GTSPP started to manage the data set of CTD (Conductivity, Temperature and Depth) profiles derived from marine mammals. The animal-borne CTD data are strategically important because they get high data return from logistically difficult areas of oceans.

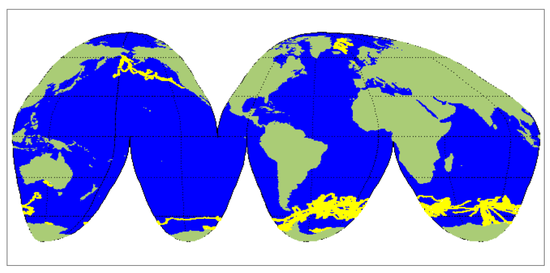

Fig. 5a.

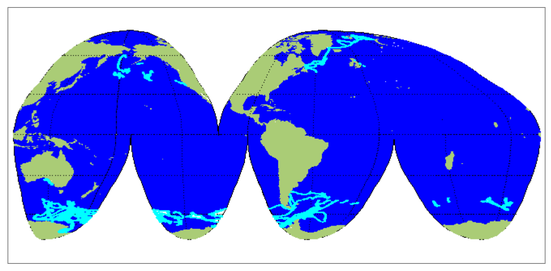

Fig. 5b.

Figure 5. Station locations plots of the animal-borne CTD data for 2009 (Fig. 5a) and 2010 (Fig. 5b).

7. On-line Data Search Tool: GTSPP Web Interface

Ability to search by:

- Spatial Range
- Date Range (1990 – Present)
- Season Filter
- Data Mode:
  - Real Time,
  - Delayed-Mode, or
  - Best Copy
- Instrument Type:
  - Profiling Floats,
  - TAO/TRITON/PIRATA
  - Fixed Buoys, CTD, MBT, XBT

Products:

- List of station numbers
- Retrieve data and/or
- Display in HTML

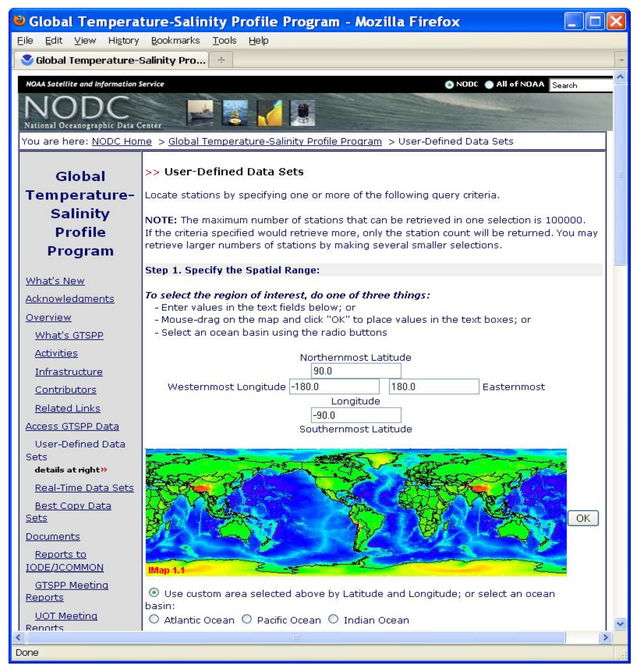

Figure 6. Screen shot of the GTSPP Web Interface. (http://www.nodc.noaa.gov/cgi-bin/gtspp/gtsppform01.cgi)

8. Current Status: Operational

- Publish near real-time data sets three times a week.
- Update the best copy data sets once a month.
- Distribute data in response to emergencies, if needed.

9. Contact GTSPP:

E-Mail: nodc.gtspp@noaa.gov

Acknowledgements: Many agencies play important roles in the Global Temperature and Salinity Profile Programme (GTSPP) data system. Without their efforts, this compilation of data and information would not have been possible. Countries include Argentina, Australia, Canada, China, France, Germany, India, Italy, Japan, UK, and USA. For détails \information about GTSPP, visit the GTSPP Web site at http://www.nodc.noaa.gov/GTSPP/index.html.

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