

## Global Temperature and Salinity Profile Programme

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### 1. Objectives

- Provide a timely and complete data and information base of ocean temperature and salinity profile data.
- Implement data flow monitoring system for improving the capture and timeliness of real-time and delayed-mode data.
- Improve and implement agreed and uniform quality control and duplicates management systems.
- Facilitate the development and provision of a wide variety of useful data analyses, data and information products, and data sets.

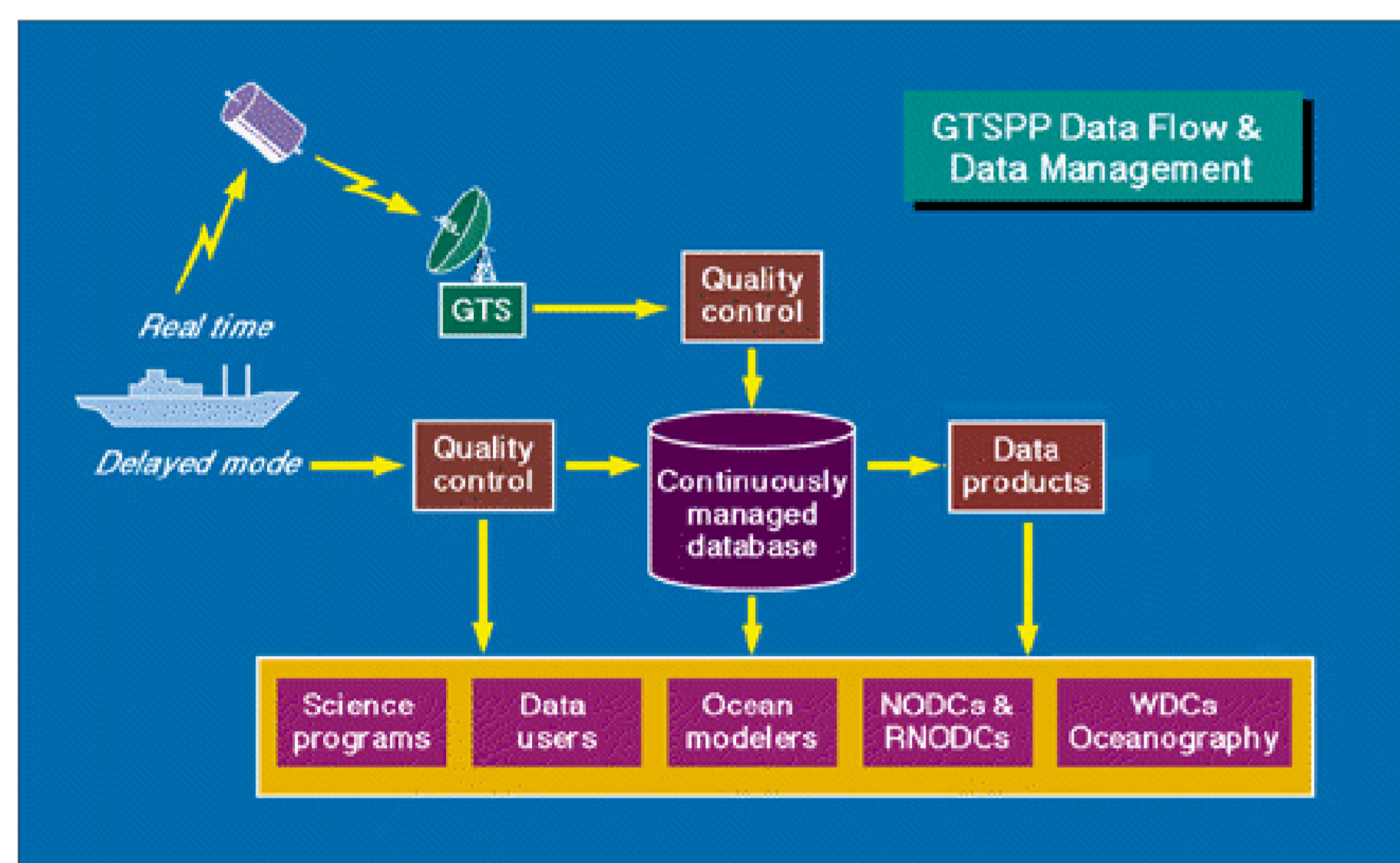


Figure 1. A schematic diagram shows the infrastructure of the GTSP data flow and data management.

### 2. Infrastructure

- Global Telecommunication System (GTS): The GTSP uses the GTS to acquire near real-time data, handled by the Integrated Scientific Data Management (ISDM) of Canada.
- IODE Data Centres: Historical data are acquired either from other national oceanographic data centres (NODCs) or from cooperation with projects such as Climate Variability and Predictability (CLIVAR) & World Ocean Database (WOD).
- Continuously Managed Database (CMD): The US NODC provides data processing services for historical data and maintenance of the CMD. GTSP clients receive data from both ISDM and NODC anytime between three times per week, monthly or on request.

### 3. Assessing Data Quality

GTSP utilizes the existing IODE data network and processing system to acquire and process real-time and delayed mode data and coordinates the scientific quality control (QC) activities. The QC procedures are:

- Duplicate Elimination Check
- Platform Identification
- Location and Date Tests
- Profile Tests
- Climatology Tests
- Profile Consistency Tests
- Visual Inspection
- Cyclic Redundancy Check

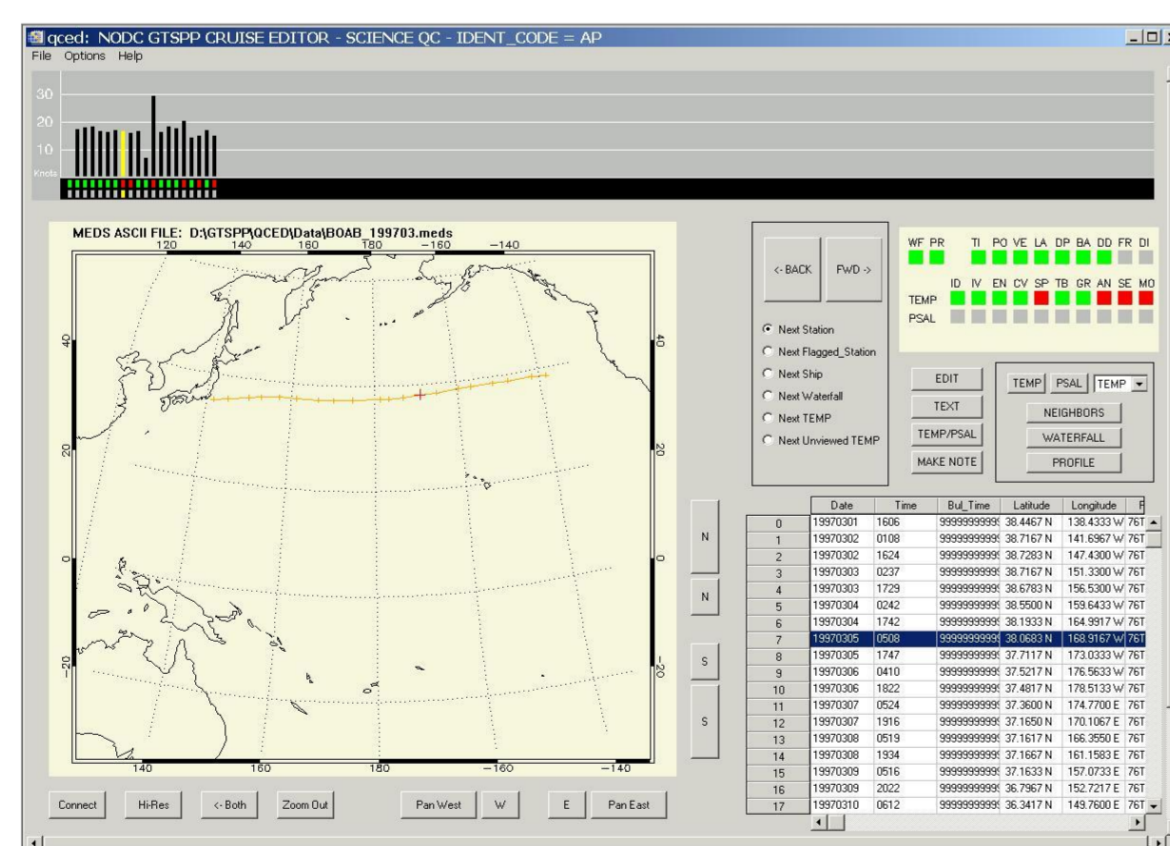


Figure 2. Main window of a data quality control editor developed by the US NODC.

### 4. Feature Data Type: Marine Mammals-derived CTD

In July 2008, GTSP 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.

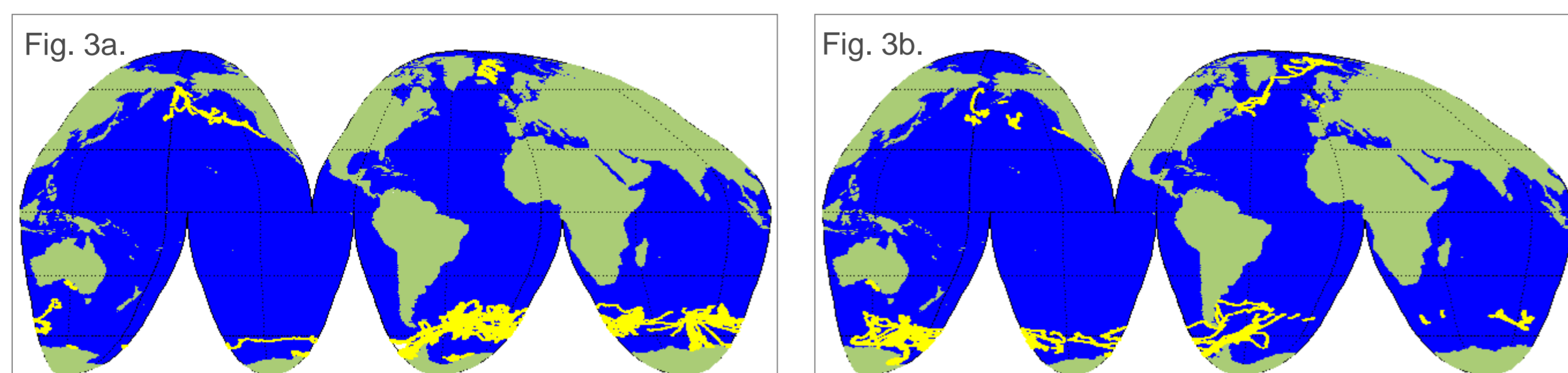


Figure 3. Station locations plots of the animal-borne CTD data for 2009 (Fig. 3a) and 2010 (Fig. 3b)..

### 5. Data Volume Evolution: 1990 – 2010

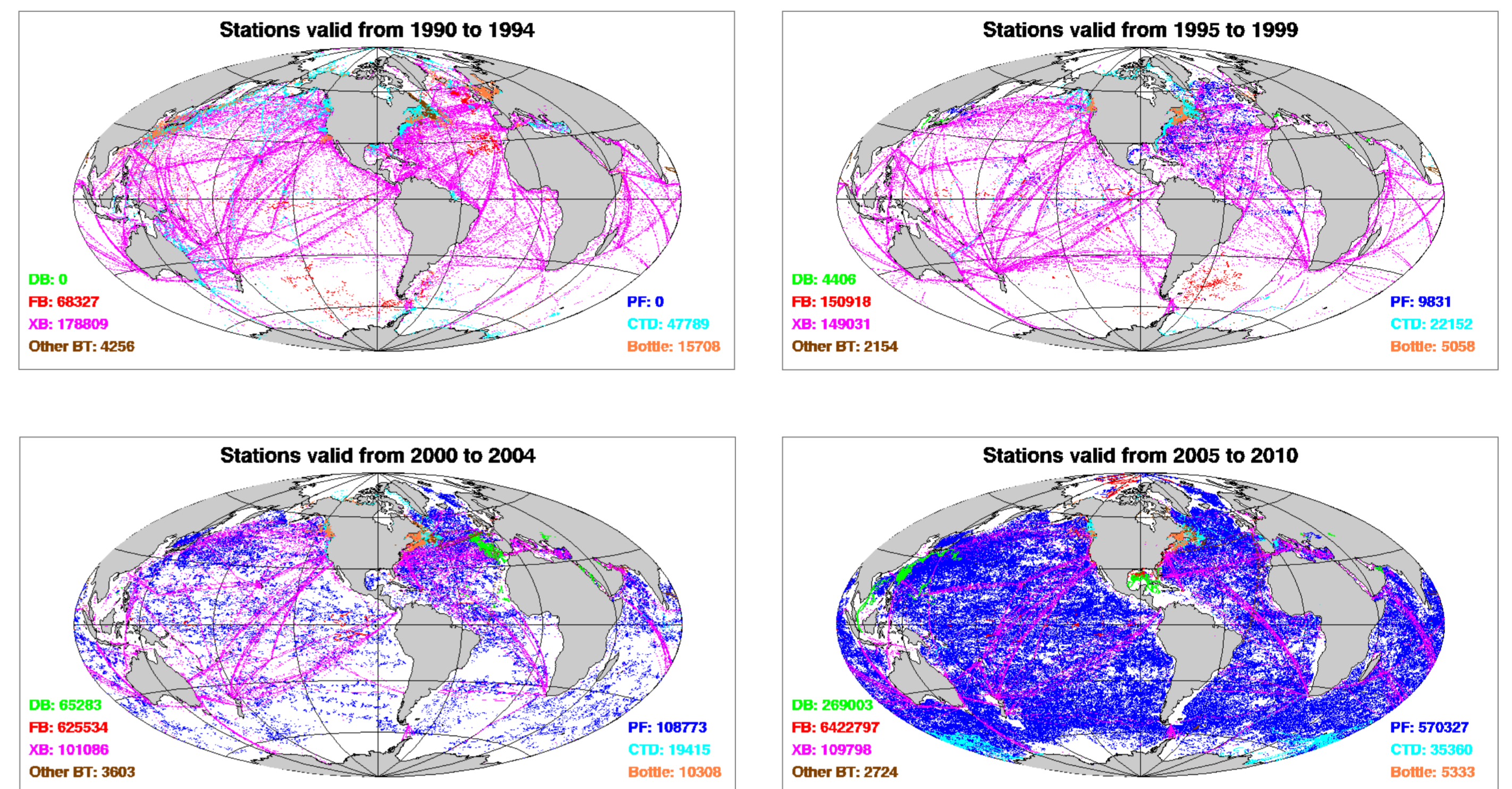


Figure 4. Evolution of GTSP data volume from 1990 to 2010. The legends are: 1.) BT = Bathythermograph; 2.) CTD = Conductivity, Temperature and Depth; 3.) DB = Drifting Buoy; 4.) FB = Fixed Buoy; 5.) PF = Profiling Float; and 6.) XB = Expendable Bathythermograph;

### 6. On-line Data Search Tool: GTSP Web Interface

Ability to search by:

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

Products:

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

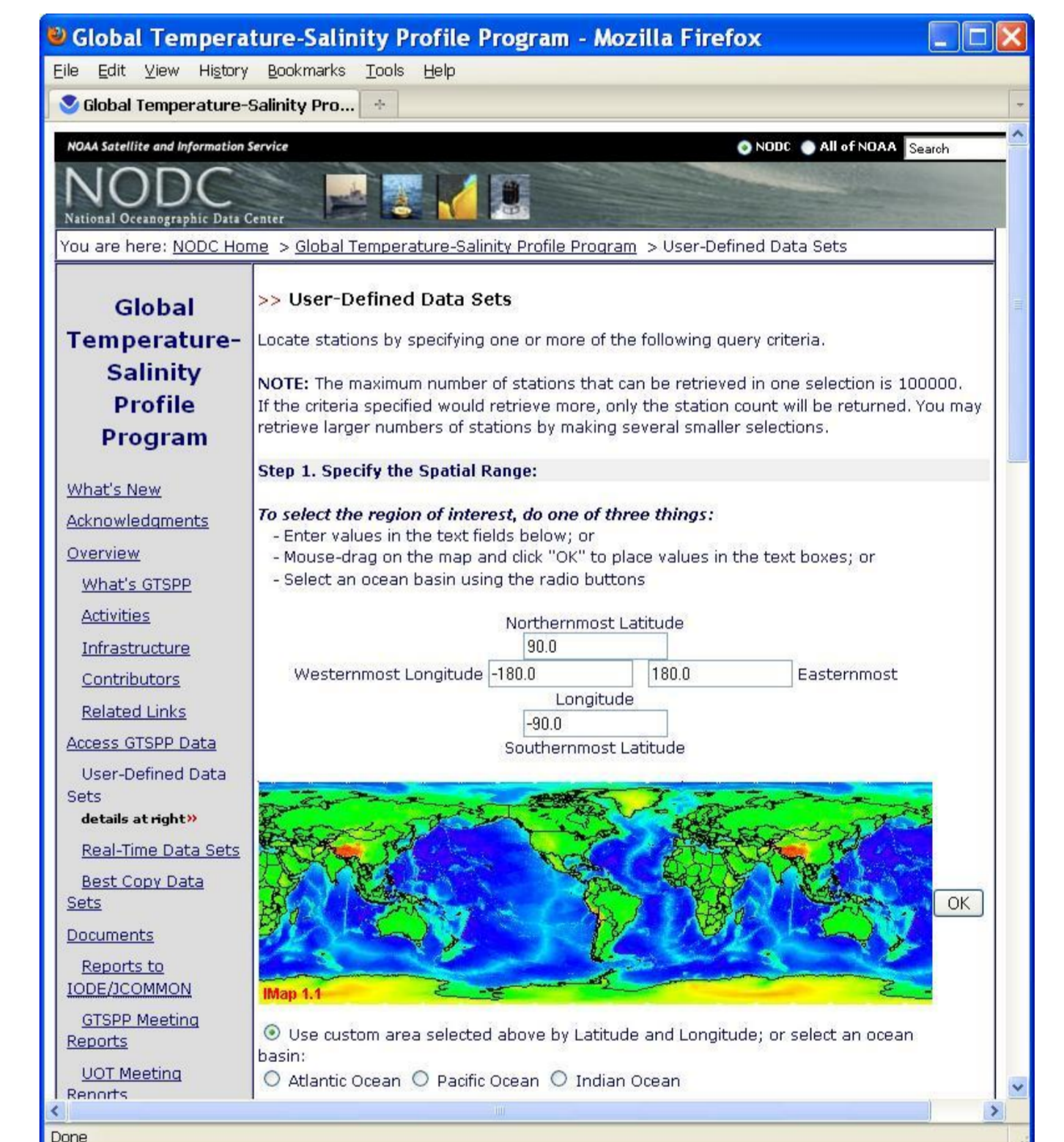


Figure 5. Screen shot of the GTSP Web Interface. (<http://www.nodc.noaa.gov/cgi-bin/gtsp/gtspform01.cgi>)

### 7. Offline Data Delivery: DVDs

DVDs 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 stored on DVDs:
  - Ocean Data Explorer (ODE):
    - "SQForm": Station Query Form
    - "ncConverter": Convert NetCDF files

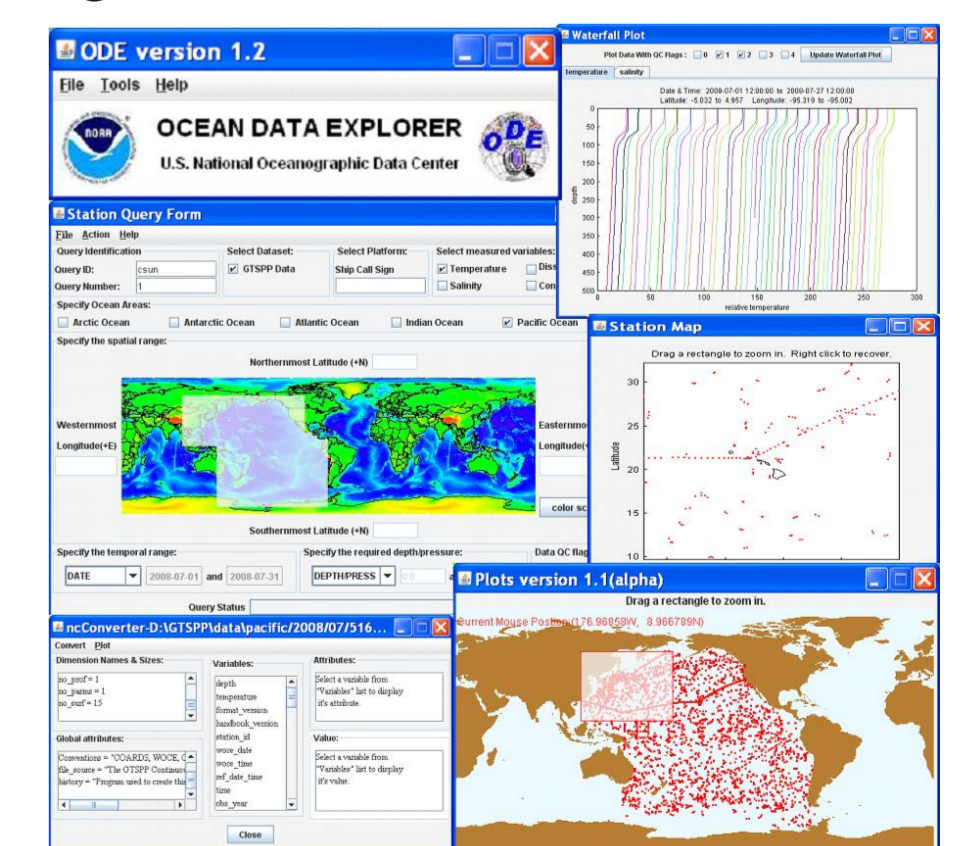


Figure 6. Composite screen shots of the ODE modules.

### 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 GTSP: E-Mail: [nodc.gtsp@noaa.gov](mailto:nodc.gtsp@noaa.gov)