Access to Marine Data Sets Over the Web

Requirements to Support Research Users

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Outline

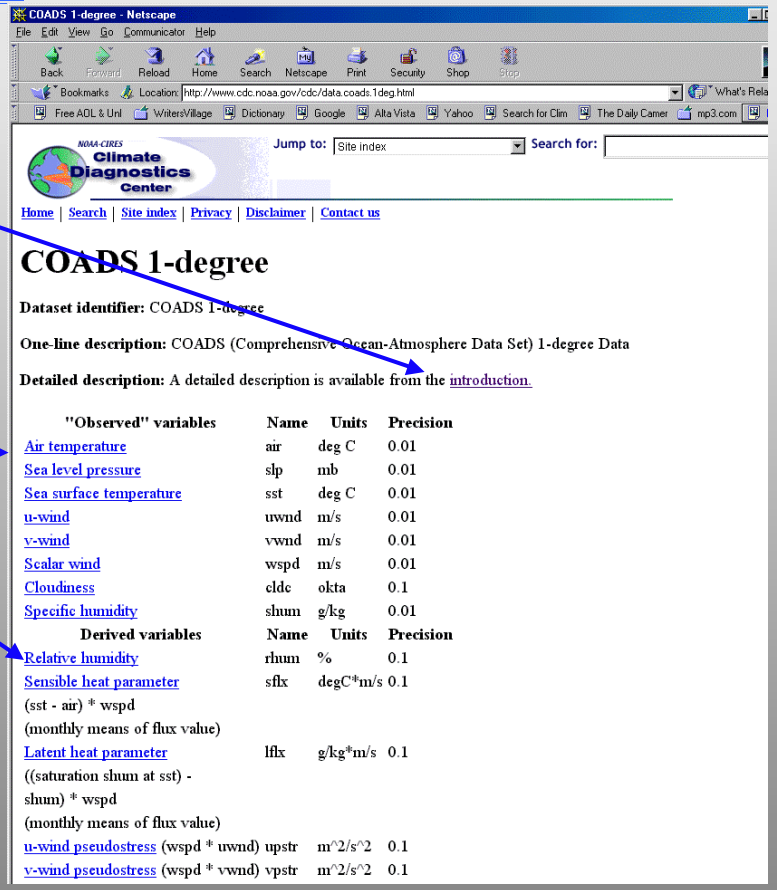
- **Current web interfaces for data access**
  - **CDC's Data Pages**
  - **COADS Live Access Server**
- **The big picture**
  - **NVODS**
- **Discussion of future directions**
  - **Feedback from research users**

CDC Data Pages

- **Detailed documentation with live links to basic analysis, plotting and data retrieval**
- **Data set and variable based searching**
- **Analysis (e.g. composites and correlations) for selected data sets**

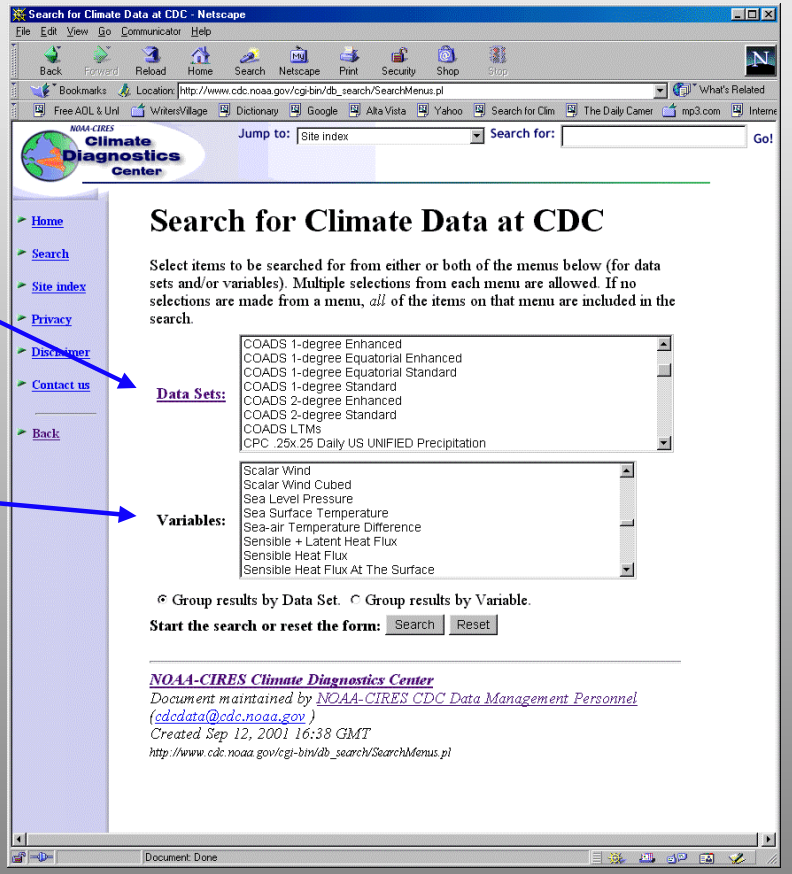
Detailed Documentation

- **Detailed descriptions**
- **Links to data plotting, analysis and retrieval**



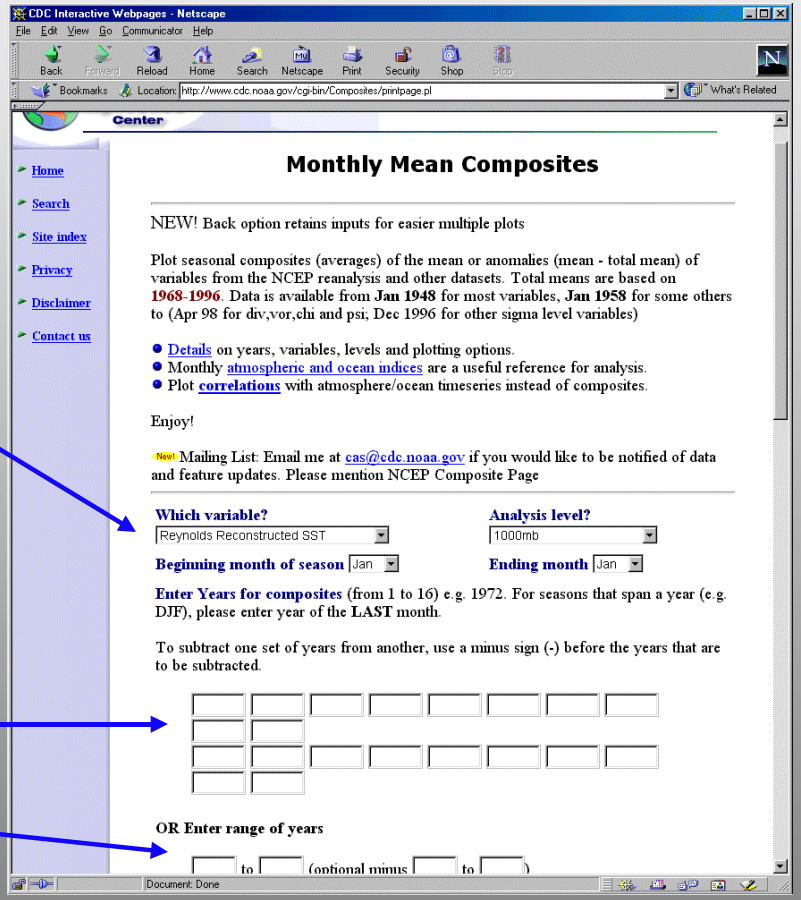
Search for Data

- **Select one or more data sets**
- **Select one or more variables**



Example analysis: Composites

- **Select from many data sets including the NCEP Reconstructed SST**
- **Create monthly mean composites of selected years or a range of years**



The Live Access Server (LAS)

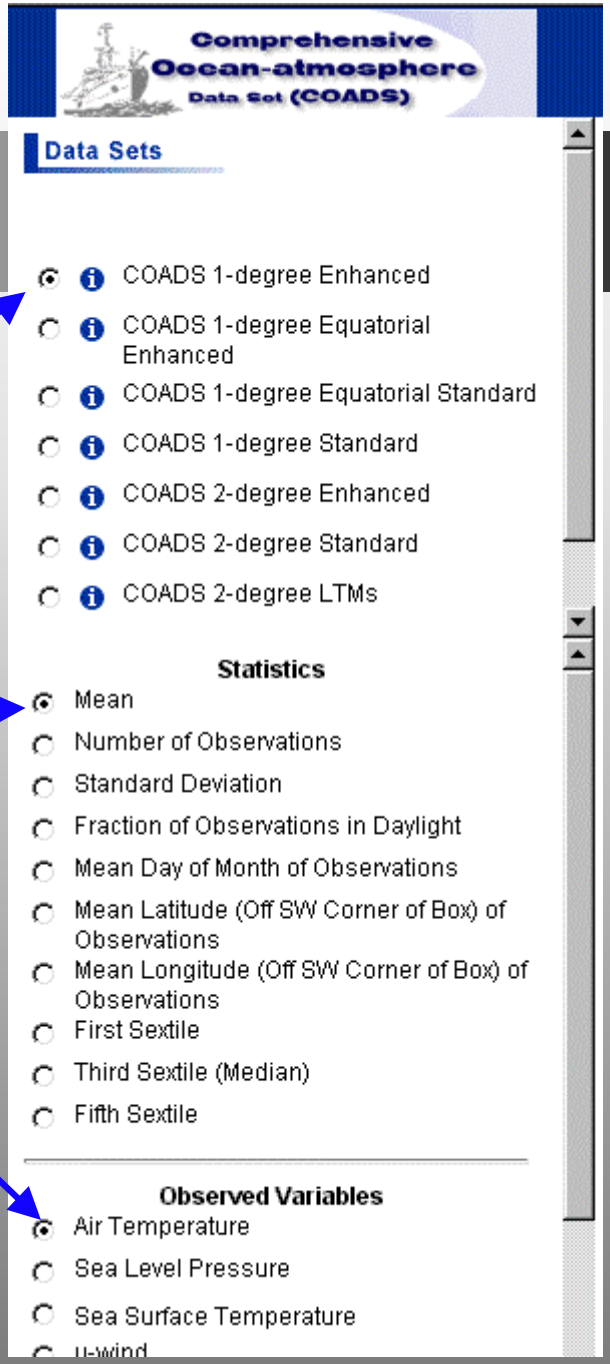
- **Software framework that provides a single entry point to plotting, subset creation (with many output formats) and data comparison**
- **Interface can point to both local and remote data via DODS (a.k.a. OPeNDAP).**
- **Whatever documentation is available from the data provider is linked to the interface**

More Details About LAS

- **Select a view**
- **Compute a difference**
- **Multiple output formats including plots, ASCII files and spreadsheet input.**

COADS LAS at CDC

- **Radio buttons are used to select:**
  - **Dataset**
  - **Statistic**
  - **Variable**



Demonstration of COADS LAS

- **The COADS LAS Server.**
- **Create a plot.**
  - **XY**
  - **XY comparison plot**
  - **Time series**
  - **Hovmuller**
- **Download XYT-slice into a spreadsheet.**

NVODS Vision

- An end-to-end ocean observing system.
- For science users:
  - Catalog-level search (topic, keywords, region).
  - Evaluate in your browser.
  - Use it immediately in your preferred application.

NVODS Vision

- For value-added product producers:
  - Reliable data access directly from software
- For suppliers:
  - Minimal effort to contribute data to the system

NVODS Partners

- **Federal, state, academic, commercial, and non-profit institutions involved in NVODS project or technical development**

NVODS Partners

- Climate Diagnostics Laboratory, NOAA
- Coastal Services Center, NOAA
- COLA
- BMRC, Australia
- DMEFS
- DODS
- ESRI (GIS)
- GCMD, NASA
- George Mason University
- Goddard DAAC, NASA
- IPSL (France)
- JPL, NASA
- LabNet
- Lamont Doherty (Columbia U.)
- Maine, State of
- MIT
- NCAR/HAO (*not ocean data)
- NGDC, NOAA
- NRL & GODAE , Navy
- OPeNDAP
- Oregon State University
- PMEL, NOAA
- SAIC
- Texas A&M University
- UNIDATA
- USGS Coastal and Marine Programs

NVODS Components

Existing technology for Data Access

- **DODS -- the foundation**
- **Live access server (LAS) -- web-based browse**
- **Searching partnerships -- GCMD, THREDDS**

- **"Enabling technologies" for metadata**
  - **Allow users and third parties to improve metadata**
    - **Ancillary information service (AIS)**
  - **Stitch multiple files into single data sets**
    - **Aggregation servers (AS)**

DODS

- **Distributed Oceanographic Data System**
- **Server software and client API libraries that allow programs to read data via standard interfaces across the network.**
- **http://www.unidata.ucar.edu/packages/dods/index.html**

NVODS Demonstration

- **Top map show traffic between LAS server and DODS data servers.**
- **Bottom map show Web traffic between LAS user interface and scientists browser.**

NVODS Demonstration

- **NVODS LAS Site**
- **Begin search at GCMD DODS Portal**
  - **http://ferret.wrc.noaa.gov/nopp/**
  - **Plot FSU pseudo stress climatology.**
  - **Plot of COADS 2-degree pseudo stress.**
  - **Plot difference.**

Data Service Evolution

- **Local data descriptions and services.**
- **Live Access Server as local service.**
- **Distributed and cooperative efforts using search systems and Live Access Server.**

Final Thoughts

- **Provide feedback to each of these efforts so the evolution occurs in the light.**
- **Consider participating by sharing data when appropriate.**