A Web-Based Interactive Atmospheric Data Visualization Tool: Near-Real-Time Access to Data from the CMDL CCGG Observing Network

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The Carbon Cycle and Greenhouse Gases (CCGG) group of CMDL operates an extensive observational network for monitoring atmospheric trace gases important to the understanding of the global carbon cycle. CCGG continuous and discrete measurements of atmospheric CO_2, CH_4, CO, H_2, N_2O, SF_6, and the stable isotopes of CO_2 and CH_4 made from surface sites, towers, aircraft, and ships of opportunity, constitute the most extensive set of atmospheric greenhouse gas observations that are consistent with respect to calibration and methodology.

CCGG data are readily available for use from data archive centers and CMDL. However, the most-current-year's data, e.g., "preliminary" data, are not available because they have not yet been screened for sampling, analytical, or calibration errors. Further, users cannot easily manipulate the available data or create graphs to suit their needs. Increasing requests for more up-to-date data and for customized data plots suggest that the current CCGG data distribution strategy is not meeting the needs of current data users.

CCGG can better serve the scientific community, as well as the general public, educators, students, the press, business, and government policymakers, by providing CCGG data, including our most up-to-date measurements, in a format that is widely accessible and allows users to easily manipulate and graph the data.

Development of the CCGG Interactive Atmospheric Data Visualization (IADV) Web site will allow visitors to (1) view both published data and near-real-time preliminary CCGG data, (2) obtain details about each sampling location, (3) manipulate and compare CCGG data sets, (4) create custom graphs, and (5) save output in a variety of formats (Figure 1).

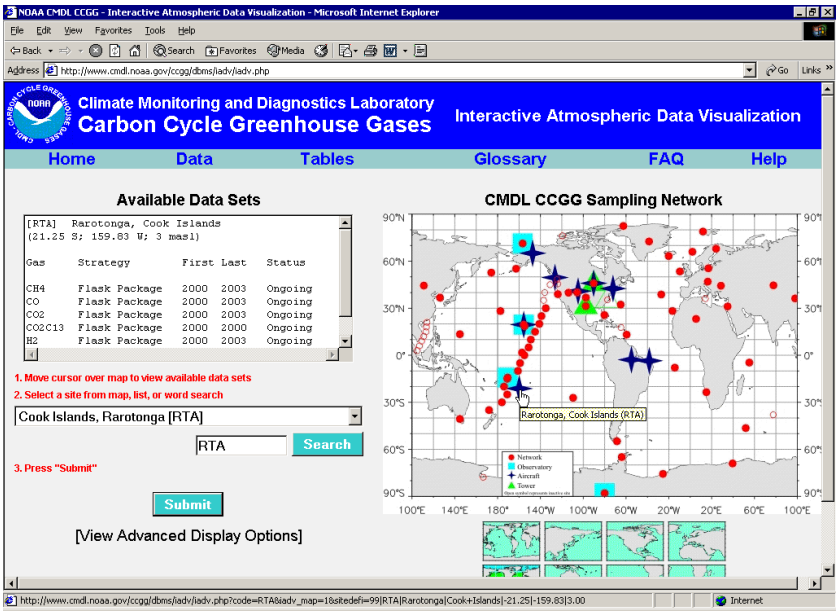

Figure 1. Interactive Atmospheric Data Visualization Web site being developed by the CCGG group.

When fully developed, the IADV Web site will be used by CCGG personnel as a measurement diagnostics tool. Because the Web site will centralize access to a library of powerful graphing routines and directly query the CCGG database, those responsible for the measurements will have at their disposal an efficient and comprehensive set of tools for assessing the quality of the CCGG observations.

This presentation demonstrates the current state of the IADV Web site.