Web-accessible Biological and Chemical Oceanographic Data

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Abstract

In response to the recent announcement of opportunity from the San Diego Supercomputer Center (SDSC), we are requesting to serve biological and chemical oceanographic data via the SDSC DataCentral web site, with an initial allocation of 1TB. These data will be made available on-line, via any standard web browser, to researchers, educators, students, managers, and the public.

Background

We recently were awarded an NSF grant to manage the biological and chemical oceanographic data acquired by researchers funded by the National Science Foundation (NSF) Ocean Sciences (OCE) Biological and Chemical Oceanography Sections. Our experience managing the data from the U.S. JGOFS (http://usjgofs.whoi.edu) and U.S. GLOBEC (http://globec.whoi.edu) programs, as well as data from several other NSF and NOAA funded programs, gives us a strong background in metadata and data management. A key feature of our data managing efforts includes serving data and information to a very wide audience, including researchers; educators and students; fisheries managers; and the public; via the Internet, using standard Web browsers.

Request

Data are contributed to our system from well over 200 investigators mainly from the United States and Canada, although these data are used by many more researchers and students from around the world. We plan on using the same methodology and approach as used by the U.S JGOFS and U.S. GLOBEC programs for the recently awarded NSF grant to support the data managing and serving needs of the Biological and Chemical Oceanographic Data Management Office (BCO-DMO). This approach uses the JGOFS/GLOBEC data management system to manage the data and provide web access to field and laboratory data, model results, and information, such as cruise synopses and other reports, images, etc.

Our data storage demands will be relatively modest. We anticipate that we will need less than 1 TB initially. We will also need to install the JGOFS/GLOBEC software on the SDSC system. This open source, and freely available, software does not require privileges to install or run, but it does include the installation of several CGI applications. Also, we are in the process of implementing a MapServer (http://mapserver.gis.umn.edu/) interface to the data sets we manage, and we plan to use the MapServer software on the SDSC site as well. The JGOFS/GLOBEC software places relatively modest computational demands on the web server. These demands are higher when using the MapServer software as the Open Geospatial Consortium's Web Mapping Service images are created on demand. We also plan to investigate the feasibility of using SDSC web

computing resources for the applications services (including data downloads, data statistics, and data object joins) component of the JGOFS/GLOBEC data management system.

One can access the U.S. GLOBEC data on-line at our web site at http://globec.whoi.edu/ and can view our initial efforts to implement geospatial access at http://globec.whoi.edu/map/. The U.S. JGOFS data collection is available on-line at http://usjgofs.whoi.edu/jg/dir/jgofs/. Our newly established BCO-DMO web site is http://www.bco-dmo.org The BCO-DMO data system will be designed to be interoperable with other data systems to facilitate discovery of and access to ocean science data and supporting documentation (See separate figure).

We believe that the resources available at the SCSD will complement our existing data application server and provide the enhanced resources needed to manage and make available the large number of data sets expected from the NSF investigators.