Web-based Educational Tools for Understanding Climate Variability

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Initial Progress Report
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Expenditures

$4200 – Keon salary

Positions filled

No additional positions have been filled. All work completed to date has been performed by Keon.

Work accomplished

Assembling the time-series climate data into a suitable spatiotemporal database structure has taken longer than expected. However, a smaller spatiotemporal database of tsunami runup data stored in PostgreSQL/PostGIS has successfully been modified and used in its place for development purposes, enabling progress to be made on the development of the web-based mapping interface. Work on the spatiotemporal climate database will continue.

A beta version of the web interface that allows the user to view GIS layers from multiple sources has been created. The technologies described in the initial proposal were used to accomplish this portion of the project, with the addition of an important client-side software component (OpenLayers). OpenLayers enables the overlay and navigation of GIS layers from multiple sources such as the Google Maps API, Yahoo Maps API, WMS, and our local MapServer instance that dynamically builds GIS layers from content stored in the spatial database. This particular combination of server-side and client-side technologies has proven beneficial to this project.

The beta version of the web-based mapping interface includes tools that allow the user to step through time-series data. As indicated in the timeline below, work will continue on these tools and the querying and visualization tools.

Timeline for completion of grant-funded activities

Q2 = Aug 2008 - Oct 2008   Q3 = Nov 2008 - Jan 2009   Q4 = Feb 2009 - Apr 2009

Q2: Develop prototype web interface that incorporates climate data (completed)
Q2: Refine spatiotemporal climate database structure, insert additional data
Q2: Add temporal functionality to web interface

Q3: Complete addition and testing of temporal functionality to web interface
Q3: Add time-series data querying capabilities to web interface
Q3: Add visualization capabilities to web interface and conduct testing

Q4: Conduct usability testing
Q4: Complete interface
Q4: Submit final progress report to NWACC