The GLIMS Geospatial Glacier Database
http://glims.colorado.edu/glacierdata/

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Project Goal

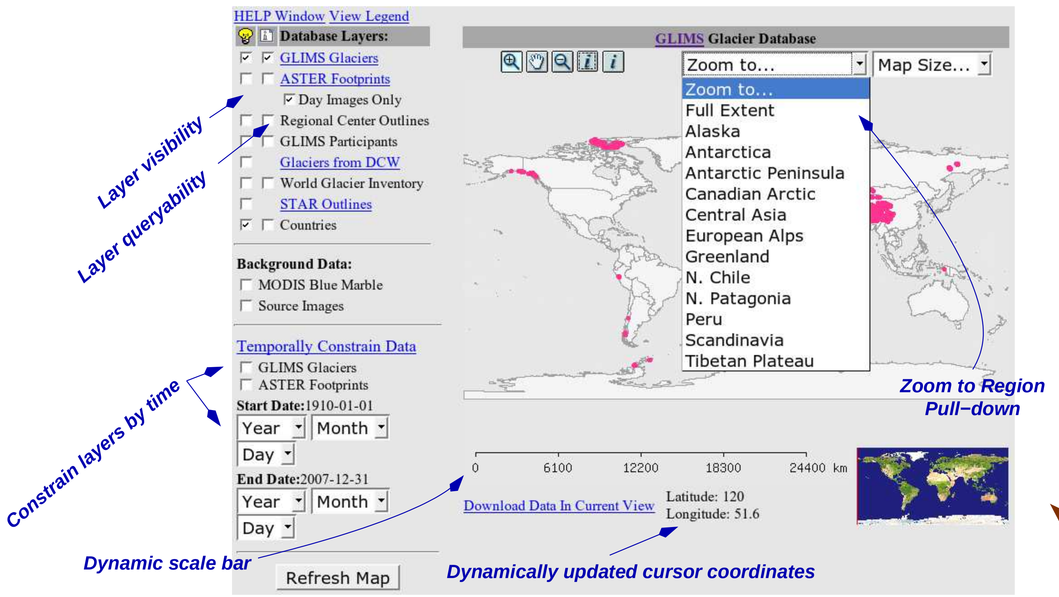
To construct a repository of geospatial information about the world's glaciers and to provide users with spatial query, access, and analysis operations on this information using Open Web Services. The GLIMS database is being used by the earth science community for monitoring changes in glacier systems, as well as for understanding the cause and impacts of these changes as they relate to regional and global climate change.

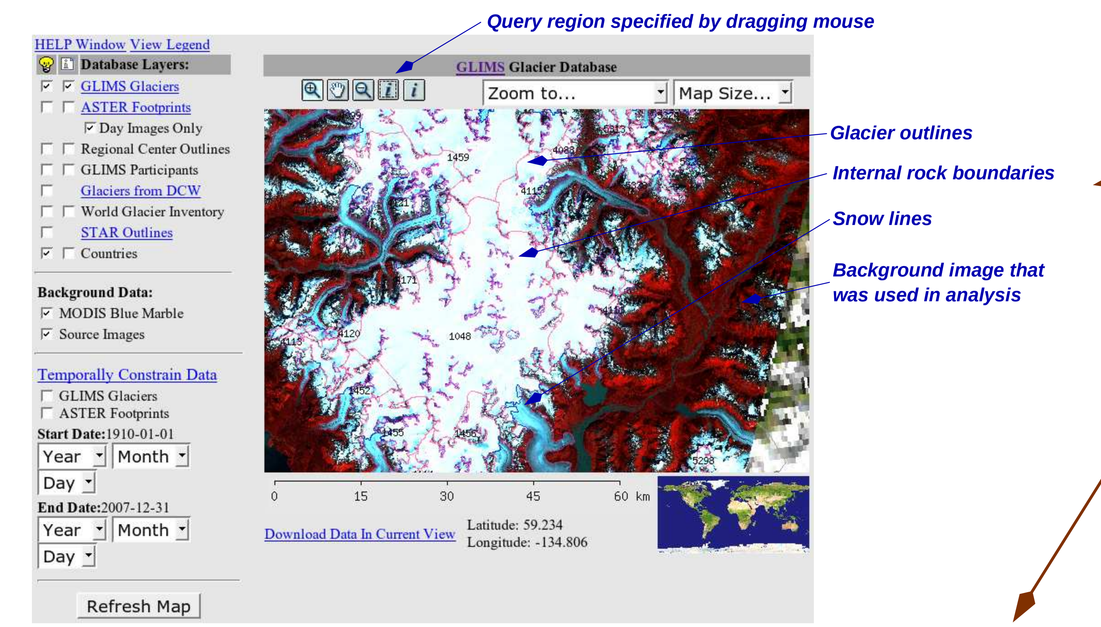
Summary

The Global Land Ice Measurement from Space (GLIMS) project is a cooperative effort of over sixty institutions world-wide with the goal of inventorying a majority of the world's estimated 160 000 glaciers. Each institution (called a Regional Center, or RC) oversees the analysis of data for a particular region containing glacier ice.

Main Features

- RCs are provided with "GLIMSView," a cross-platform computer application specifically developed to analyze satellite imagery such as from ASTER and Landsat, digitize glacier outlines, attach GLIMS-specific metadata, and package the data for import into the GLIMS database.
- Data received by the GLIMS team at the National Snow and Ice Data Center (NSIDC) in Boulder, Colorado are ingested into a spatially-enabled database (PostGIS) and made available via a Web-Mapping Service (WMS) and text-based interface. The WMS can serve maps and data to browsers, desktop GIS applications, and other servers.
- Clip-and-ship feature: Users can query the glacier data in the interactive map to view attributes, and can download the glacier outlines and metadata for only glaciers they are interested in. Data can be downloaded in a choice of formats, including Shapefiles, GMT, GML, and KML.
- The glaciers that satisfy text-based queries (for example, searching for all glaciers larger than 100 km^2 in area) can be downloaded. Data can be downloaded in the same choice of formats as above.
- Metadata on ASTER images acquired over glaciers are ingested into the GLIMS Glacier Database shortly after they are archived at USGS/EROS (LPDAAC), providing RCs and others an easy way to find ASTER imagery by querying an interactive map.
- The database now contains GLIMS outlines and metadata on approximately 56000 glaciers, contributed from 16 GLIMS institutions.

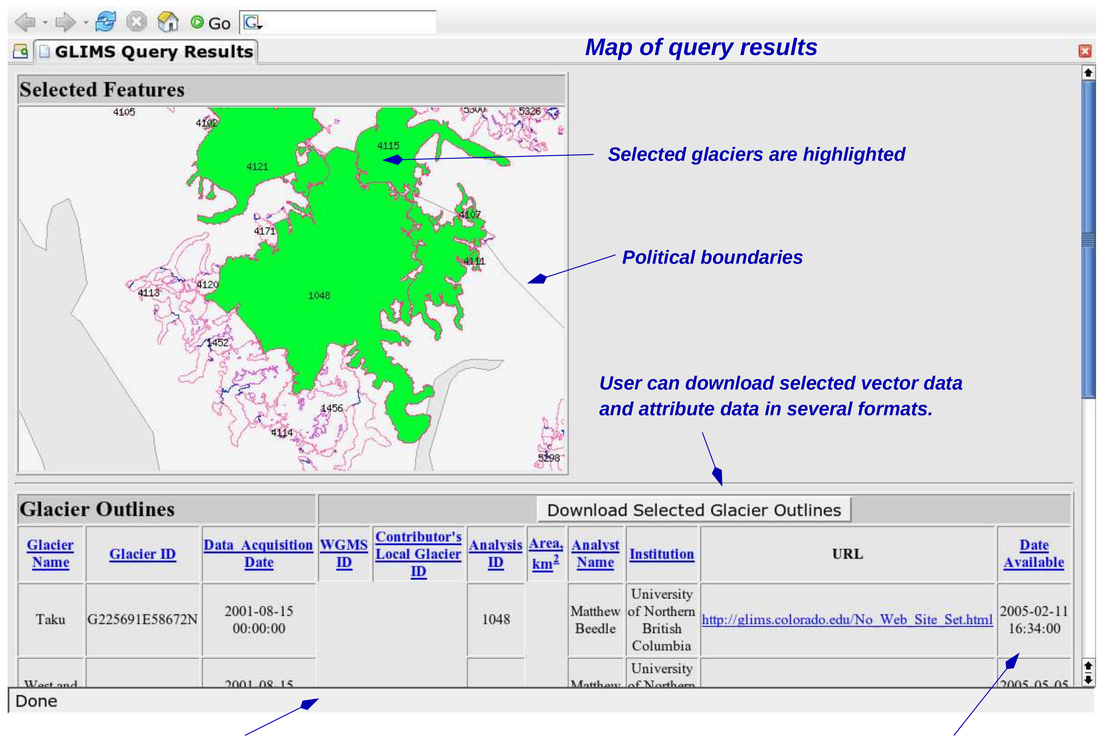




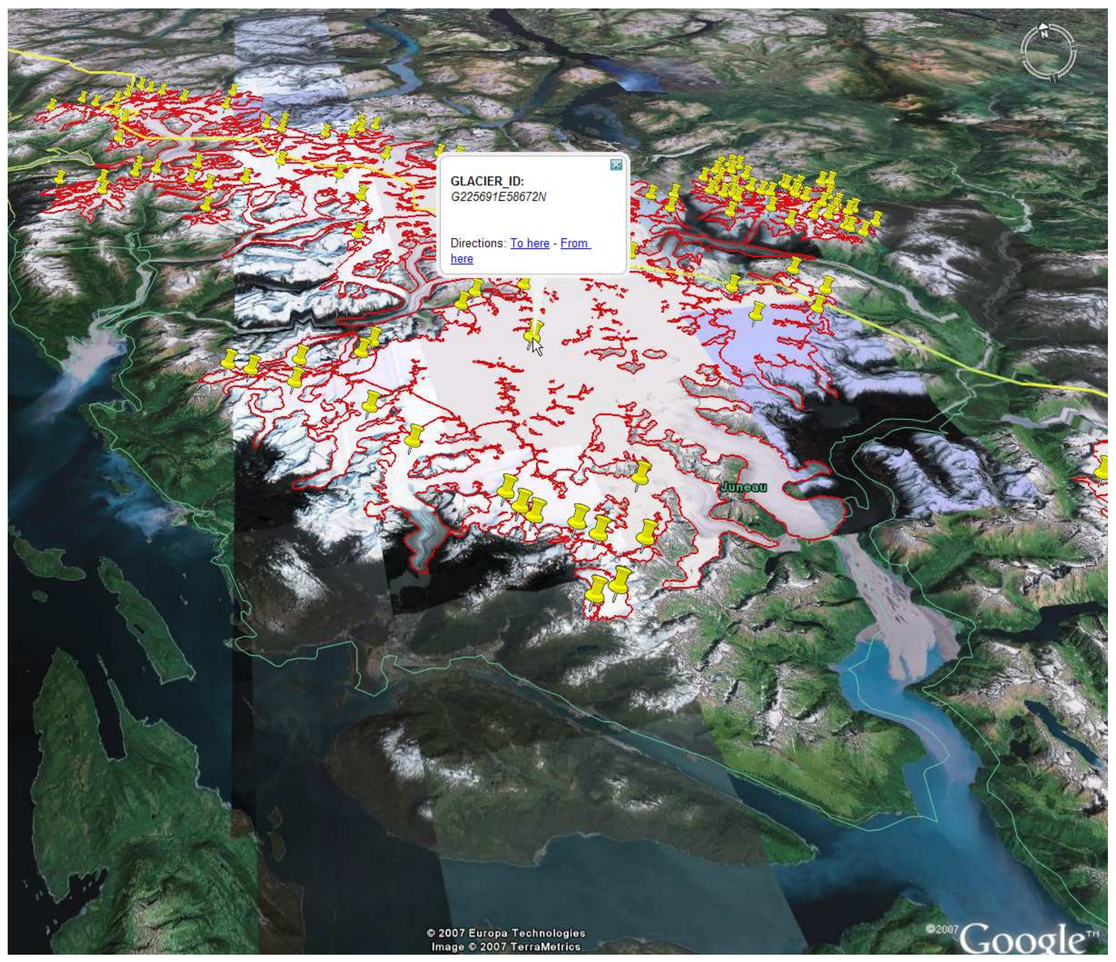
MapServer site entry page

Zoomed in to Alaska (automatic change of projection)

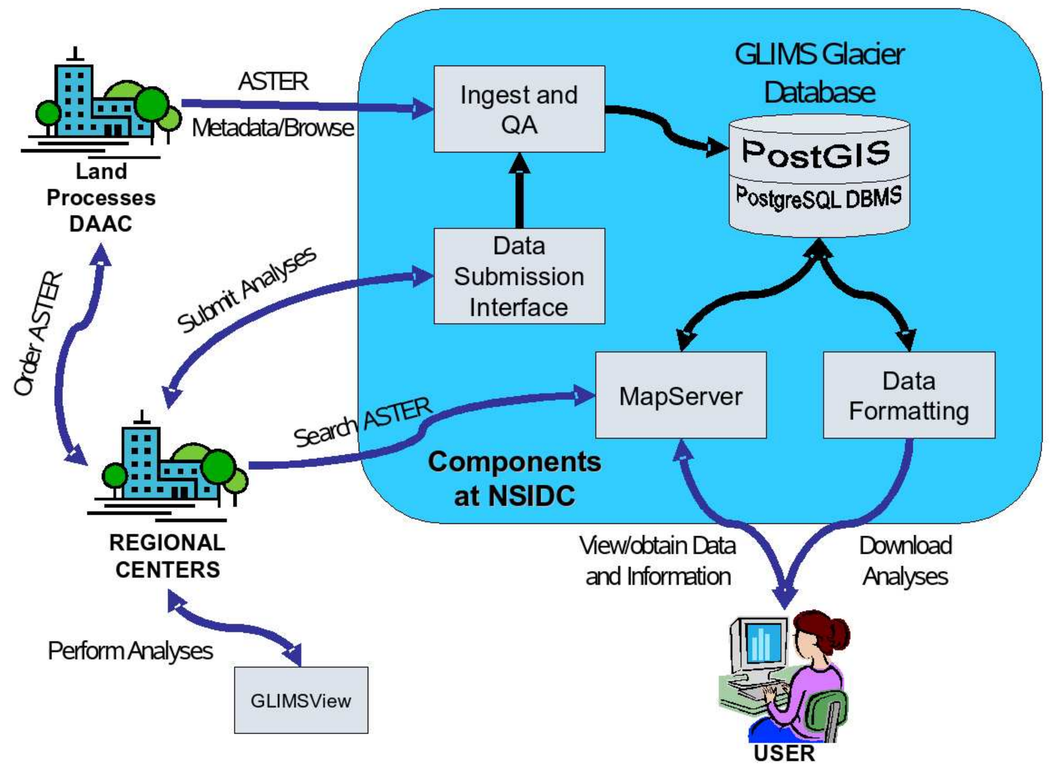
Glacier query results



Glacier outlines in Google Earth



GLIMS IT infrastructure



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