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## **Acquiring Climate Data through GIS at the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC)**

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Users access climate data from the NOAA NCDC archive in multiple GIS formats and data types. NCDC provides GIS products in three classifications of services – traditional map viewers, Open Geospatial Consortium (OGC), and web services. Traditional map viewers have advanced from simple javascript map clients to more interactive applications which integrate AJAX and JSF technologies. OGC compliant services provide access to GIS data in the form of images (WMS), features (WFS), and coverages (WCS). These services vary in their level of maturity. Web services in combination with traditional and OGC services have the potential to demonstrate many unique access/display advances. Recent work with NCDC customer industries (e.g., insurance, energy, and agriculture) aim to improve support for these and global partners.

NCDC offers traditional map services for global in-situ products (marine, surface monthly, surface daily, surface hourly, summary of the day, 15 minute precipitation, US Climate Reference Network, radar, and local climatological data). The maps

provide access to datasets and additional functions such as time series, wind rose, and histogram plots. Drought-related products associated with the National Integrated Drought Information System (NIDIS) provide 15 indices for the United States, along with its climate divisions, individual states and regions. Plans are to expand these indices to regions globally. These drought-related maps provide access to historical data and provide interactive and dynamic graphing functions. OGC services (WMS, WFS) for drought and in-situ products are available.

With the implementation of filtering and using style-layer descriptors (SLDs), the complete archive of datasets will be available through OGC services. WCS services are made available through the THREDDS (Thematic Realtime Environmental Distributed Data Services) Data Server (TDS). The ability of WCS clients to consistently present coverage data varies. Datum, projection, and WCS version are a few factors contributing to this. NCDC is currently developing applications which sample information from WFS services using XPath for limited client side queries. These XML tools will allow several types of analysis on multiple layers for unique polygons. Server-side geoprocessing is being developed for NetCDF formatted data and layers where unique extents do not exist.