

Technology Products of the PHAIRS REASON Project – Year 1

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Paper presented at the
2005 Earth-Sun System Technology Conference
College Park, Maryland
June 29, 2005



Public Health Applications
in Remote Sensing



The primary goal of this project is to use NASA data and technology to improve public health decision support tools for forecasting dust events that could adversely affect people with known respiratory conditions. To realize this goal, the project team aims to regionalize a global dust forecasting model for application in the southwestern United States and to incorporate a customized module into an existing decision support tool, the Rapid Syndrome Validation Project (RSVP).

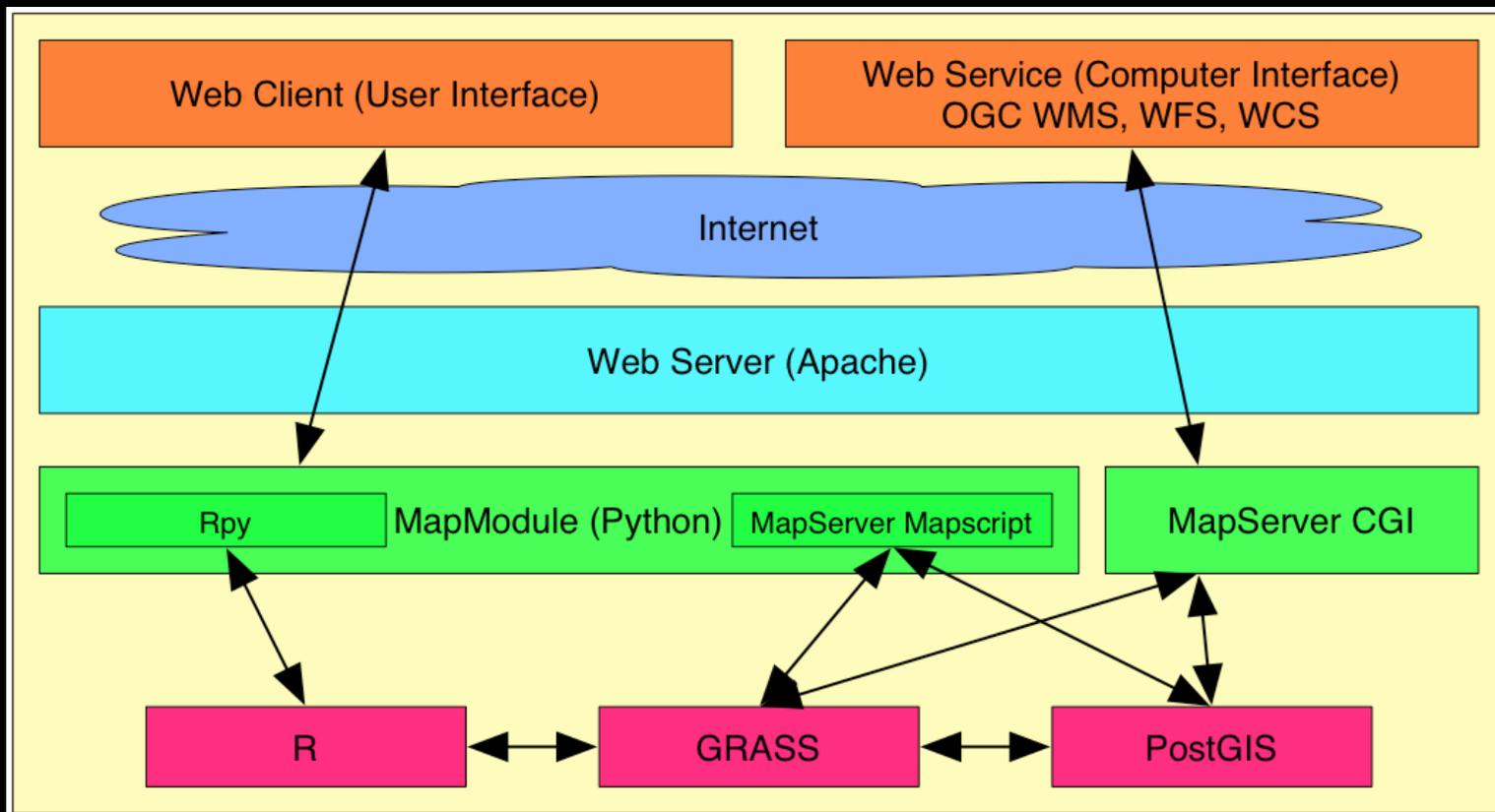
- First Annual Report of the PHAiRS Project

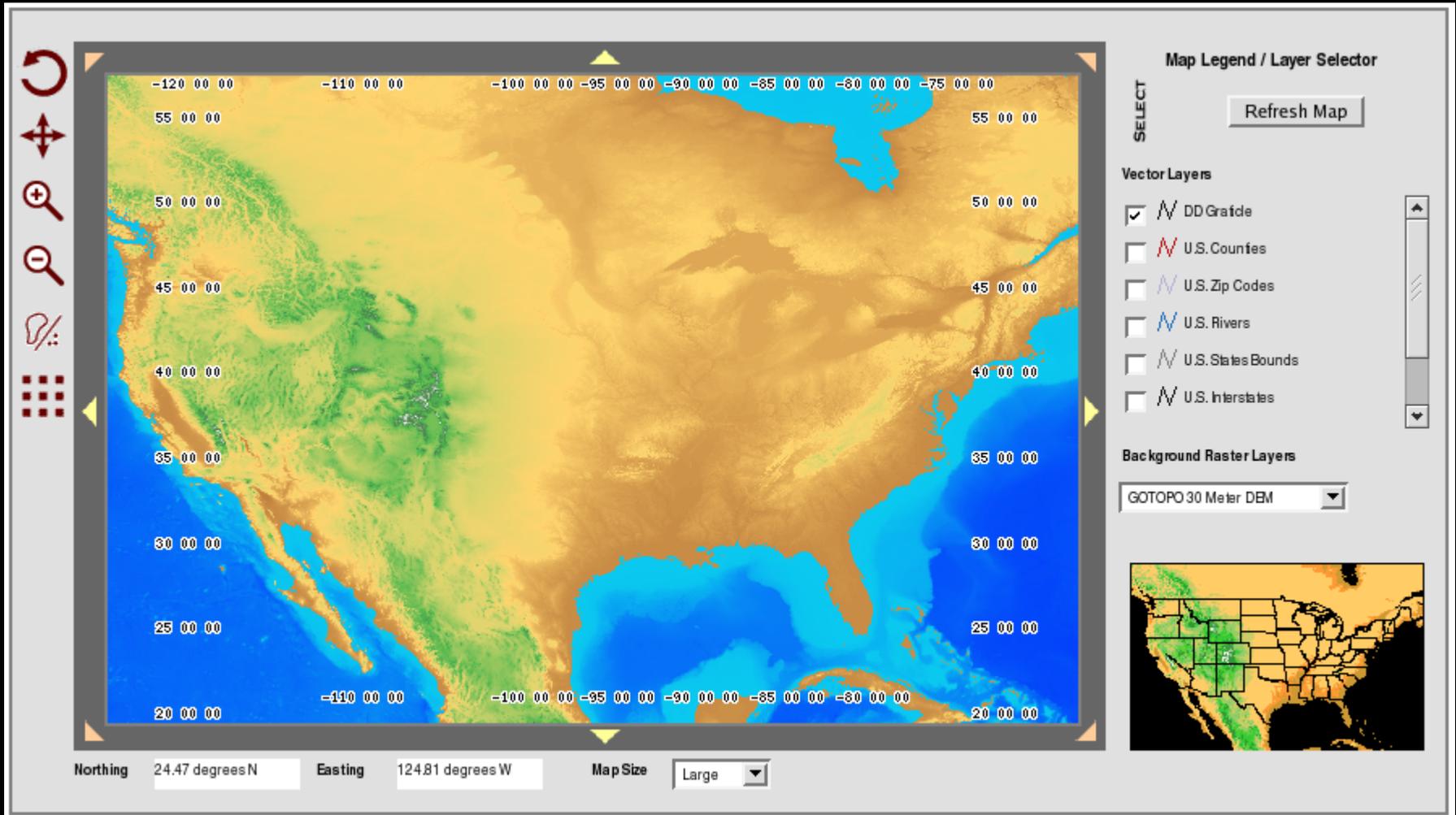
- Image and data services for direct integration into RSVP (Year 2)
 - Free-standing web client interface development
 - Streamlined data ingestion and processing of Earth Science data
 - For integration into the DREAM model
 - For presentation and delivery to Public Health officials



- Client development consists of two functional categories
 - Interactive, map-based, visualization
 - Analysis of geospatial data
- Moving towards the development of web-based GIS capabilities in contrast to basic interactive mapping.
 - Users are allowed to interact with the underlying data in addition to viewing those data
- Thin web client
 - Standards compliant HTML and Javascript

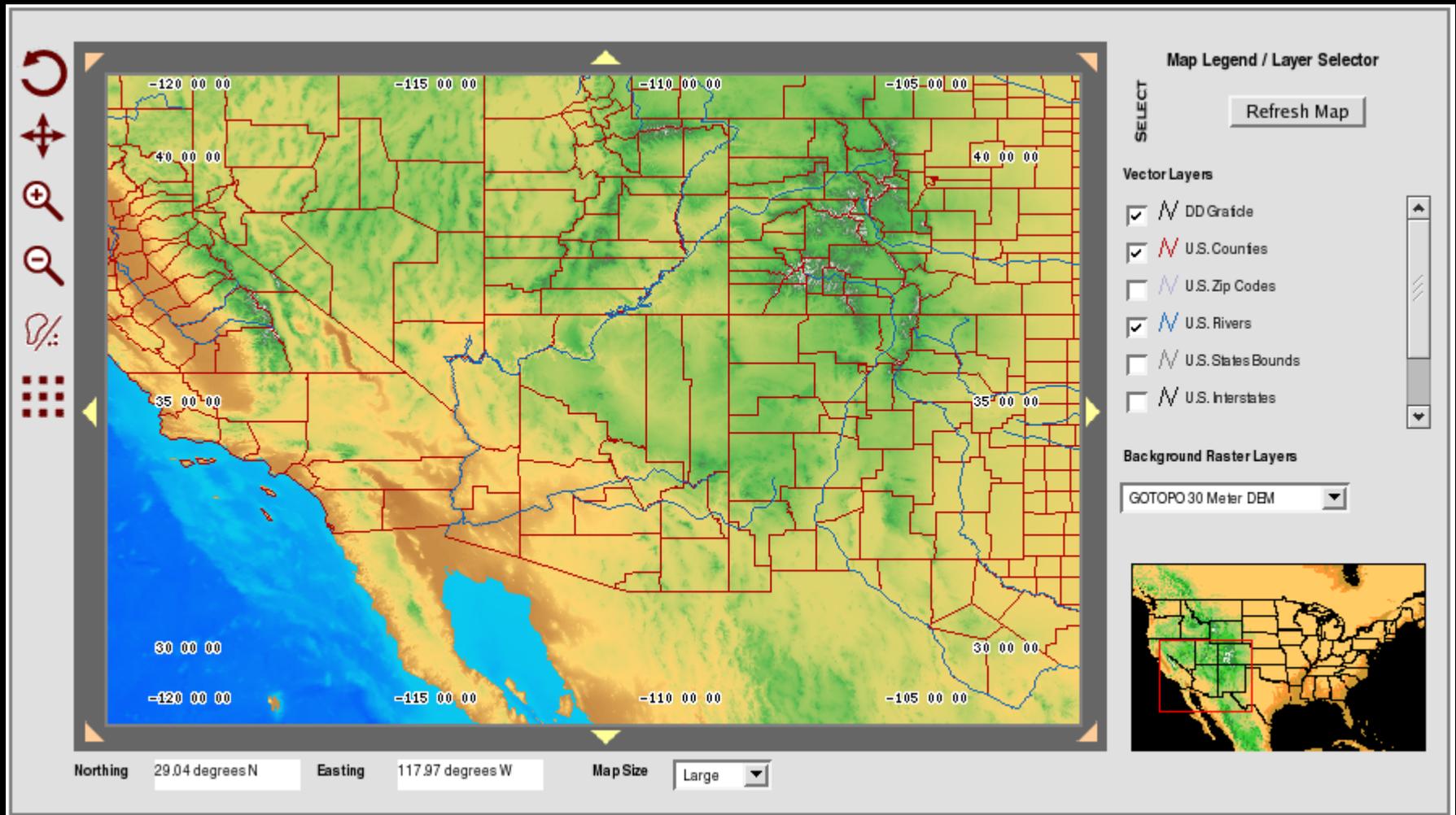






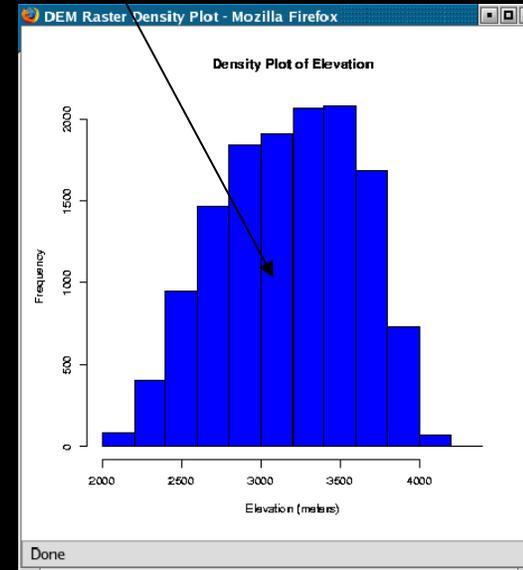
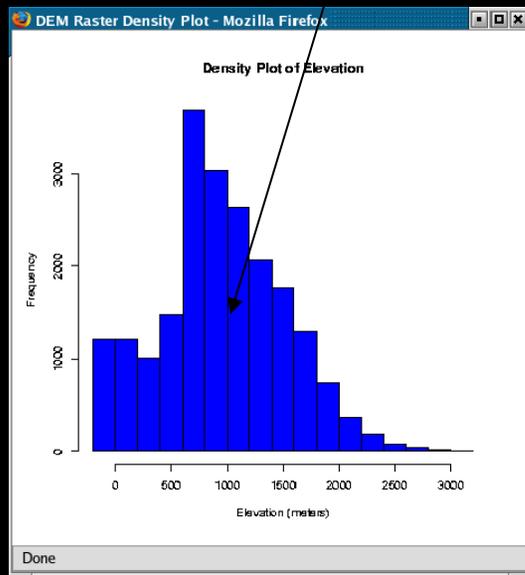
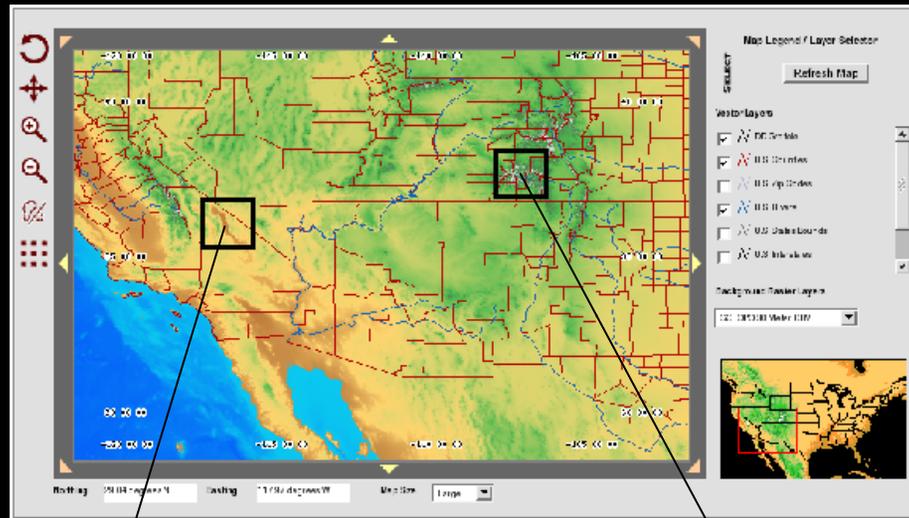
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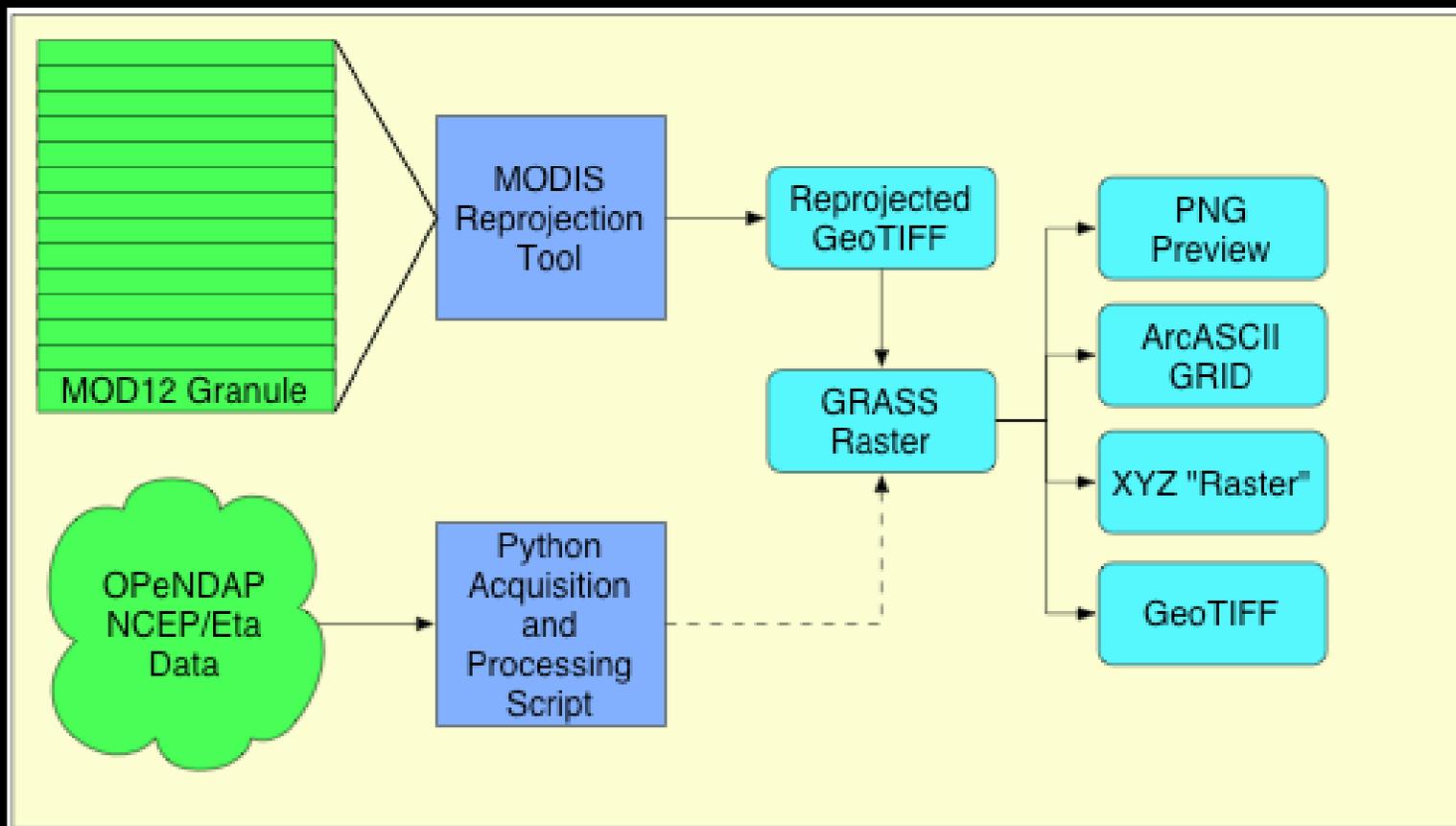


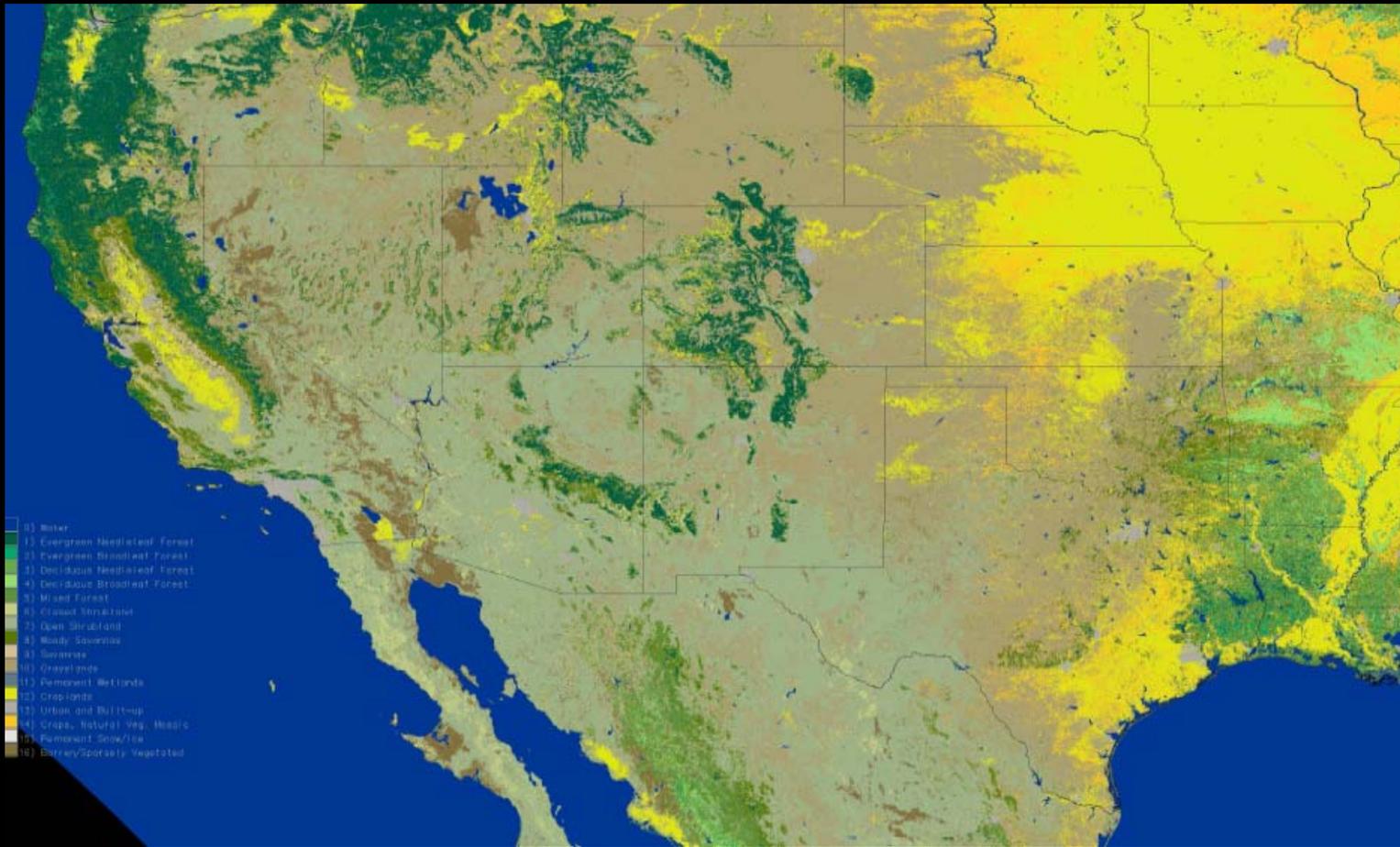
- Input Data for the DREAM Model
 - MOD12 Land Cover as a Replacement for the 10' Olson World Ecosystem Dataset (NGDC)
 - NCEP ETA Model Data (Humidity, Temperature, U- and V-Velocity)
- Source Data Format/Service
 - HDF
 - OpeNDAP
- Output Data Formats
 - GeoTIFF
 - GRASS Raster
 - ArcASCII Grid



- MOD12 Land Cover
 - Shell script automating mosaicking, reprojection, subsetting, format conversion, and preview image generation.
- NCEP/Eta Forecast Data
 - Python script that accesses OPeNDAP hosted forecast data and generates output data compatible with the DREAM model and for use in visualization and analysis







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- Integrated client interface that provides a web interface to geospatial processing tools, including
 - Visualization
 - Raster Analysis
- Automated processing and product generation from MODIS Land Products – MOD12 generated thus far
- Automated acquisition and processing of OPeNDAP-based NCEP/Eta model outputs – may be generalized to many other OPeNDAP data sources.



- This work has been funded by the NASA REASoN Program (CA# NNS04AA19A)
- Project Partners
 - University of Arizona
- Colaborating Organizations
 - Texas Tech Health Sciences Center
 - Sandia National Laboratories

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