

Weather Based Internet Map Services: Bringing NOAA's Weather Data to your Desktop

earth and environmental systems institute



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What are Weather Based Internet Map Services?

Penn State Earth and Environmental Systems Institute and Penn State Institutes of Energy and the Environment have collaborated to create webbased Internet Map Services utilizing NWS/NOAA weather data which are O "Climate change is likely to lead to increased intensity of tropical storms" GIS ready.

National Weather Service

The IMS services developed through this collaboration allow any user with an about their conclusions as Internet connection and GIS software to add real-time weather data to their the IPCC report definitions GIS application with the click of a button. All services are made available free of probability of occurrence of charge through several GIS data portals including Pennsylvania Spatial are defined as follows: 'very Data Access (PASDA http://www.pasda.psu.edu) and the Mid Atlantic likely' - more than 90 Information Node (MAIN http://main.nbii.gov). Both portals offer percent and 'likely – more significant amounts of framework, biological, and habitat based geospatial than 60%. data. Real-time weather data enhances these existing data by providing insight into changing habitats, patterns of flooding and drought, and influences on land use.

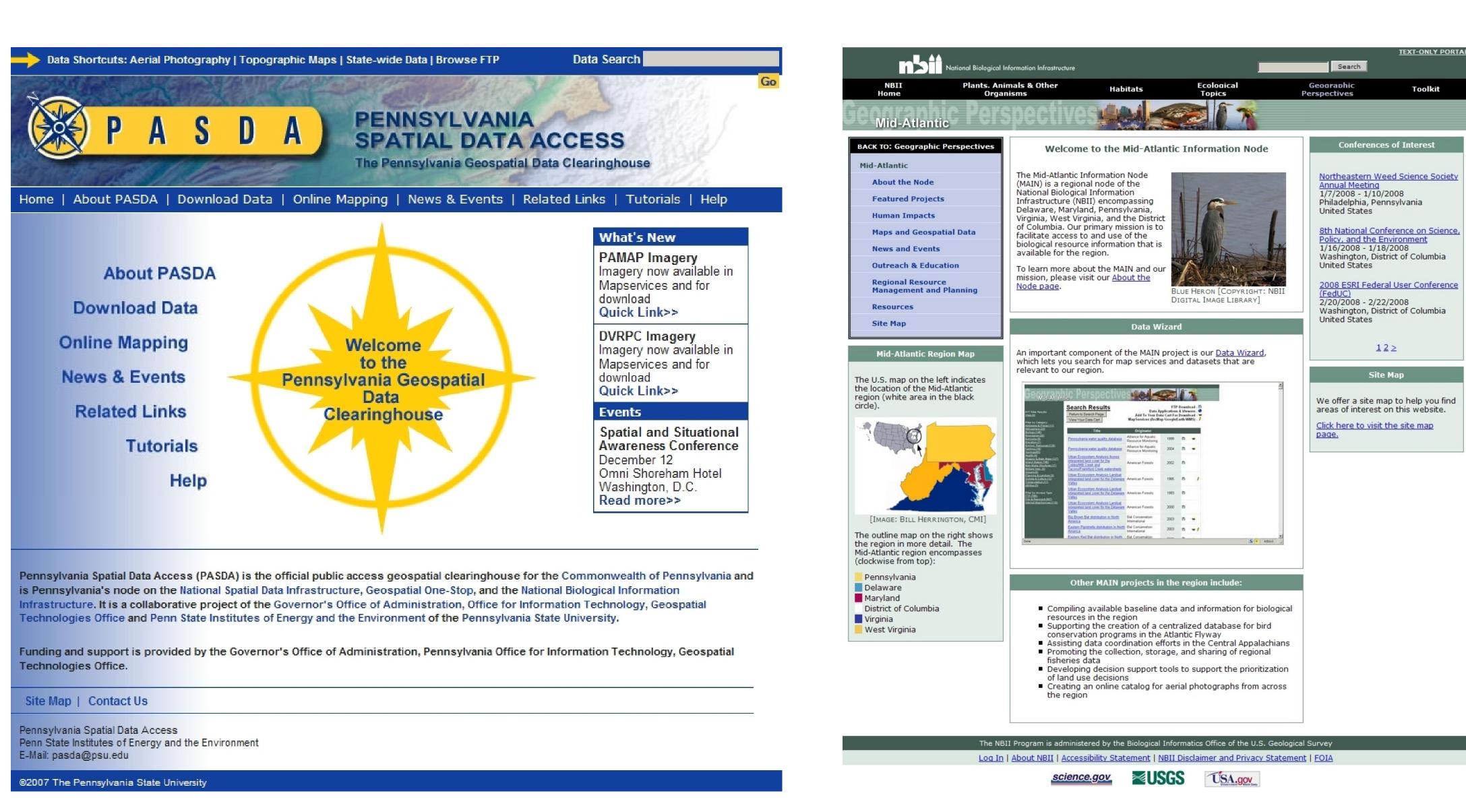


Figure 1: The two data portals used to provide free GIS ready access to NDFD and NDGD weather data.

Why do we need it?

Extreme weather often results in emergency situations and can have long term impact on humans and their environment. Some of the conclusions of the Intergovernmental Panel on Climate Change (IPCC; 4th IPCC report) say:

- O "Global climate change is very likely to have been human-induced"
- O "It is very likely that human activities are causing global warming"
- O "Probable temperature rise by the end of the century will be between 1.8 and 4°C (3.2-7.2°F)"
- O "Sea levels are likely to rise by 28-43 cm"

Why do we need it? (Contd.)

- O "It is very likely that parts of the world will see an increase in the number of heat waves"

The IPCC is very confident

It seems only natural that extreme weather events of all kinds will strongly influence our future way of life, negatively.



positively as well as Figure 2: Compilation of weather-related

What do we offer?

Currently we provide three temporal satellite and radar images, fourteen NDFD (National Digital Forecast Database) and four NDGD (National Digital Guidance Database) datasets, all provided by NWS/NOAA. These services are updated 24/7 365 days a year at predetermined time intervals.

Who uses our services?

The IMS developed through this collaboration are used by a wide variety of stakeholders such as researchers, environmental agencies, farm and agricultural industries, and emergency response organizations. The services can help determine optimal planting timetables for individual farmers as well as major corporate agricultural organizations. Disaster management and recovery organizations utilize these data and services to help determine areas that will be impacted by severe weather and to organize effective relief efforts.

Send us your input!

Our services are improved through user feedback and we welcome comments, suggestions, and questions. Please feel free to send us an e-mail and let us know what you think. In addition, if there are additional data sets that you would like to see are part of these services, let us know.

How it works

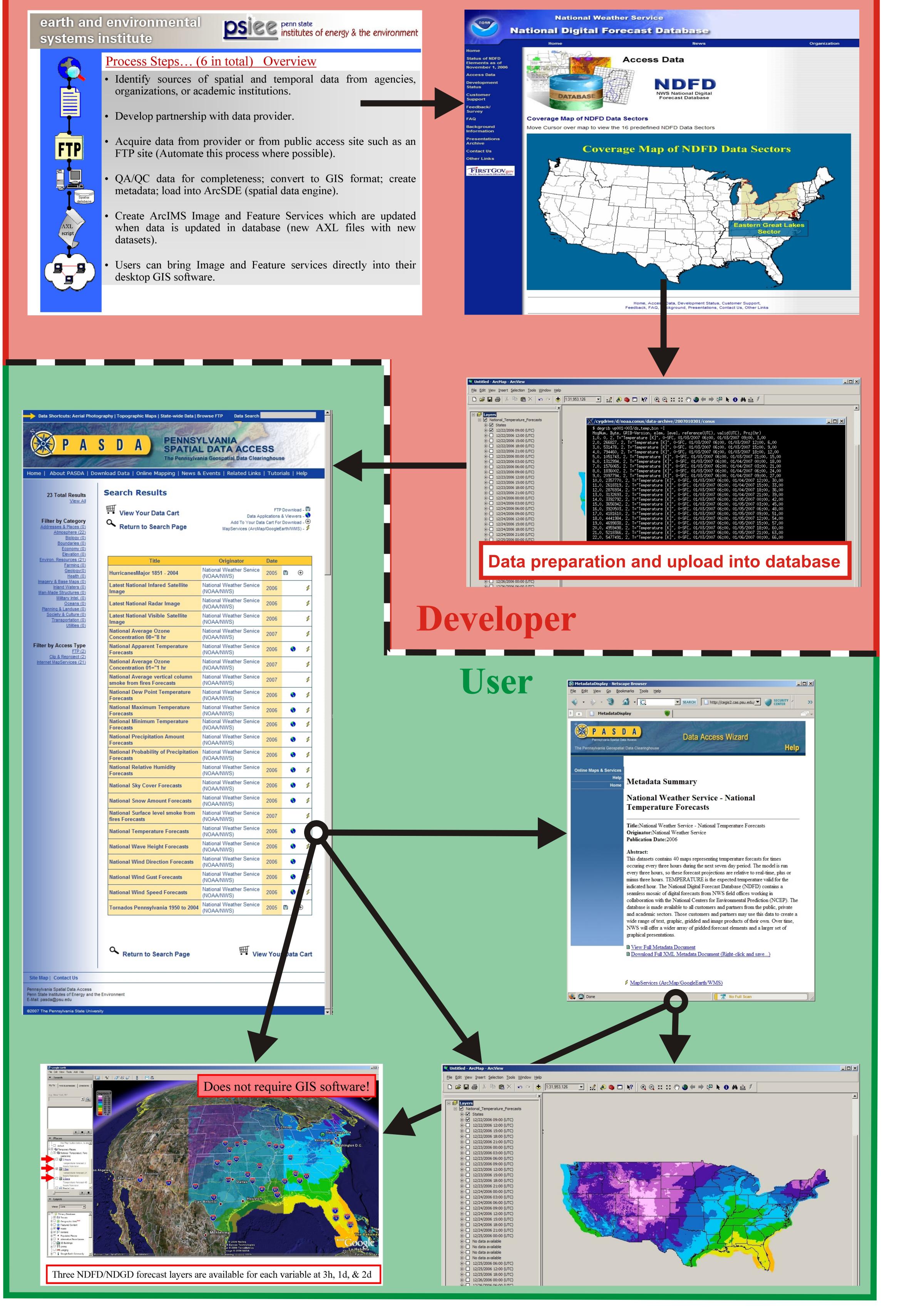


Figure 3: From the data provider NWS/NOAA to behind the scenes to a ready to Kelly, M. C., B. J. Haupt, and R. E. Baxter, Map services and weather data. in use GIS services usable for anyone with an Internet connection.

Examples

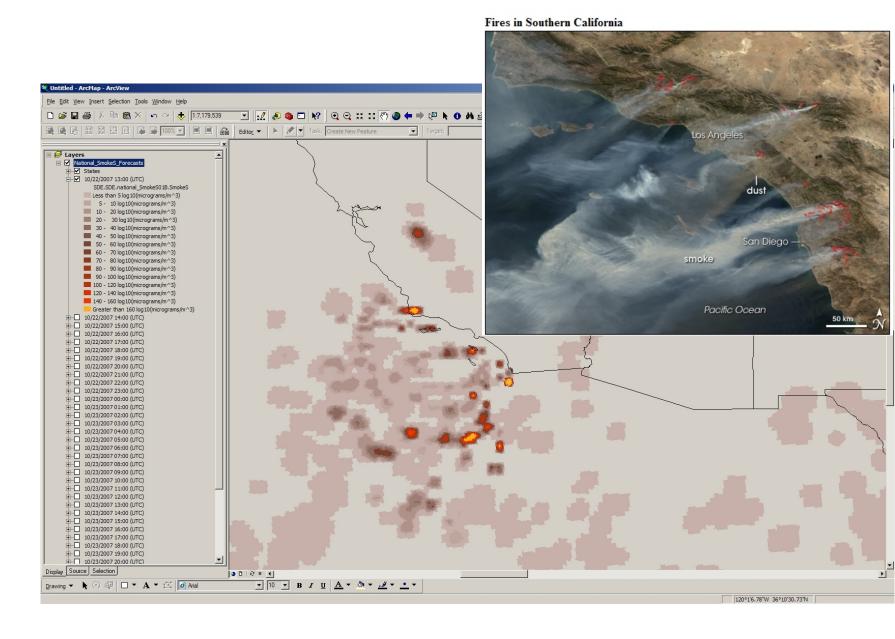
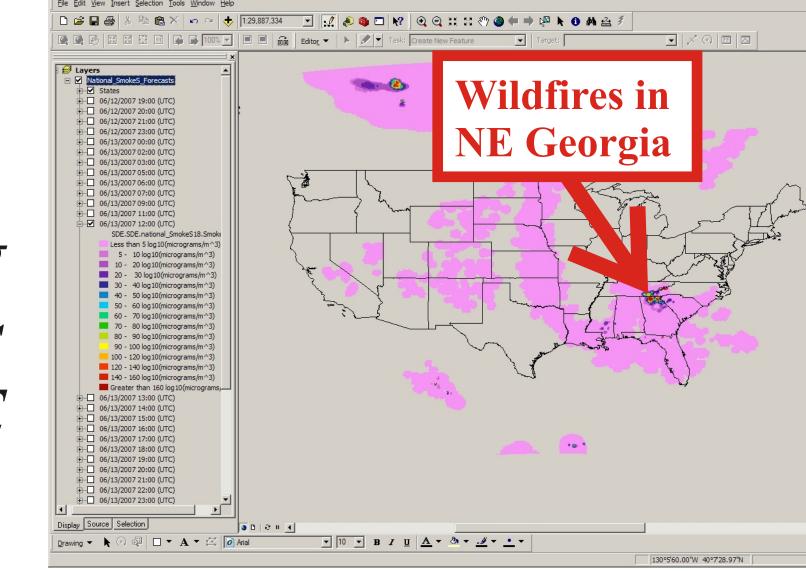


Figure 4: Oct. 22, 2007, wild-fires in southern California showing huge plumes of smoke.

Figure 5: Spring 2007, Prescribed fires create smoke in in NE Georgia.



On the Horizon

As more stakeholders utilize these services, the number and variety of data available will continue to grow. Recent requests from organizations such as the National Hurricane Center in Miami have alerted us to additional data layers that will bring an added dimension to existing services and provide even more time sensitive data to users in the field.

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