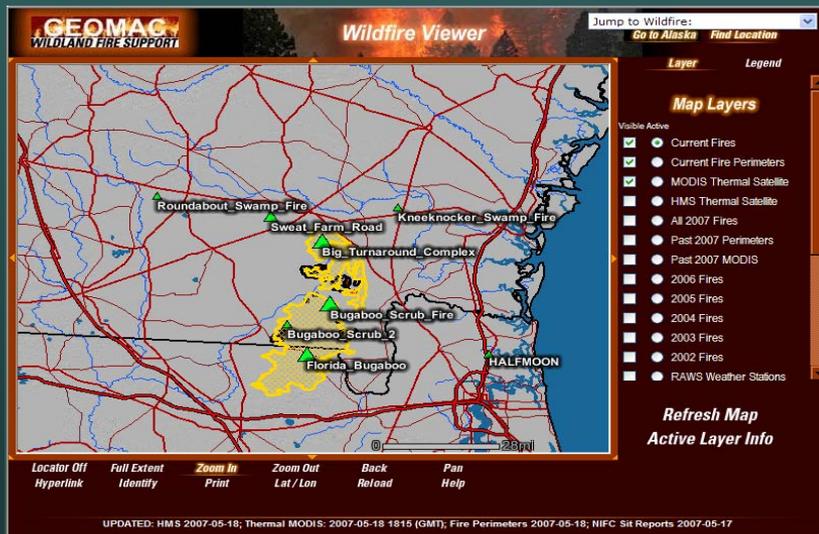
A photograph of a volcanic eruption. A large, billowing plume of dark grey ash and smoke rises into the sky from a forested area. In the center of the plume, a bright orange-red lava flow is visible, appearing to rise from the ground. The foreground is filled with green coniferous trees. The sky is filled with white and grey clouds, with some blue patches visible.

GeoMAC +

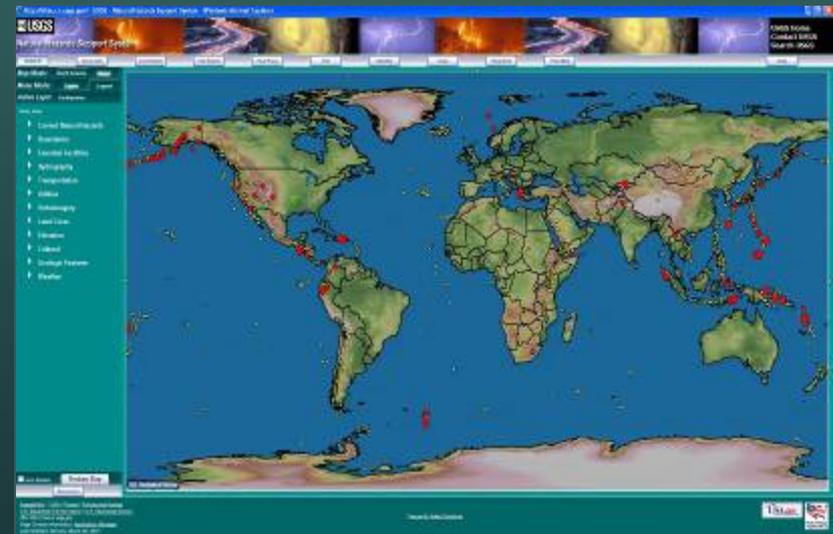
Rocky Mountain Geographic Science Center
USGS

Strategic Level Geospatial Information (Public Access)

- ❖ Geospatial Multi-Agency Coordination (GeoMAC)
- ❖ Natural Hazards Support System (NHSS)



www.geomac.gov



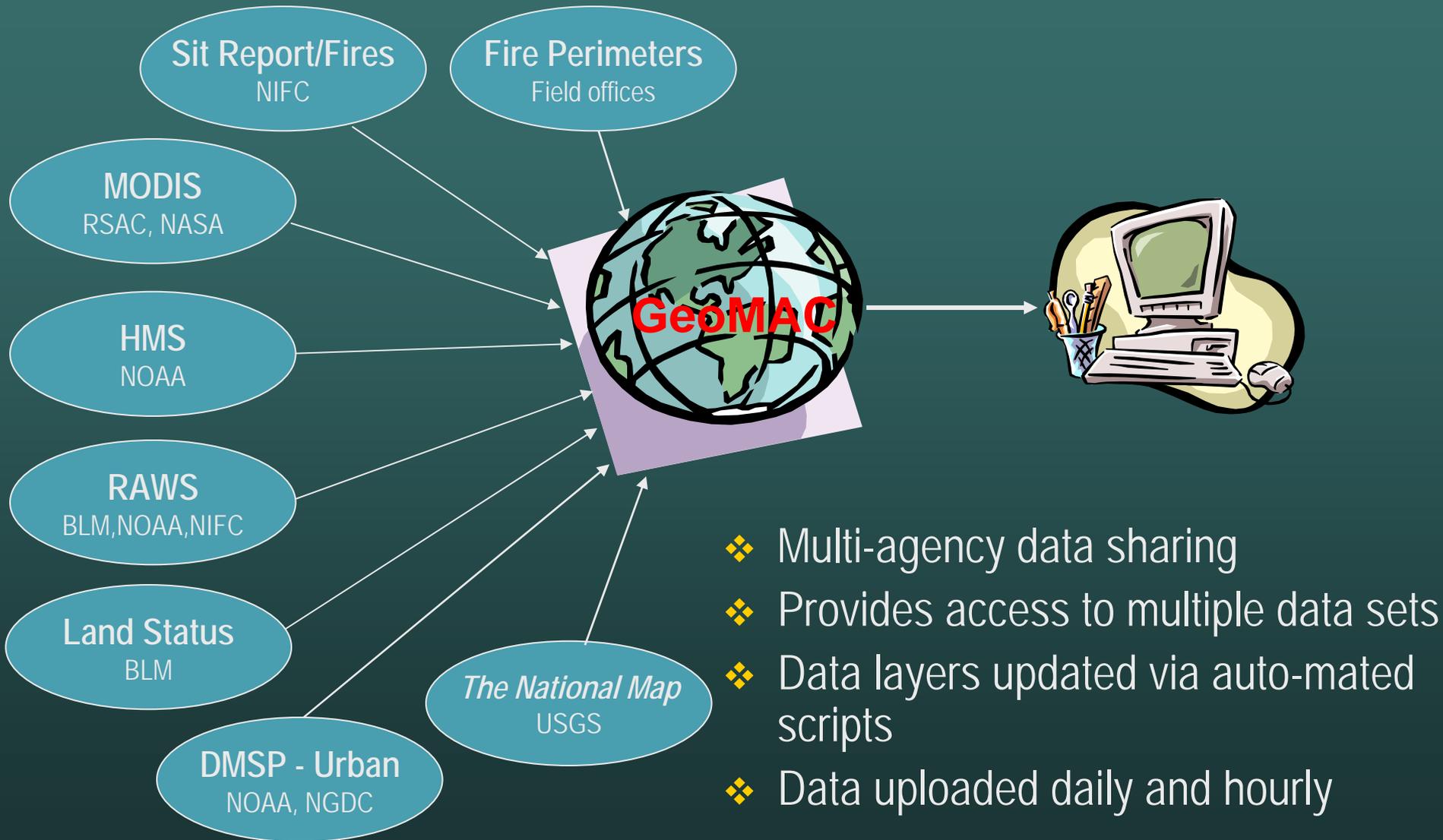
www.nhss.cr.usgs.gov

What is GeoMAC?

- Geospatial Multi-Agency Committee
- The need for status, location and proximity of wildfires to values at risk prompted the formation of GeoMAC
- The goal of GeoMAC was to implement an internet-based mapping capability designed to provide wildfire information to the wildfire community and the public
- Sponsored by The National Interagency Fire Center (NIFC)
- Web design and development: USGS/RMGSC
 - Infrastructure
 - Technical experts in application of computer based information delivery
 - Spatial data and satellite mapping expertise

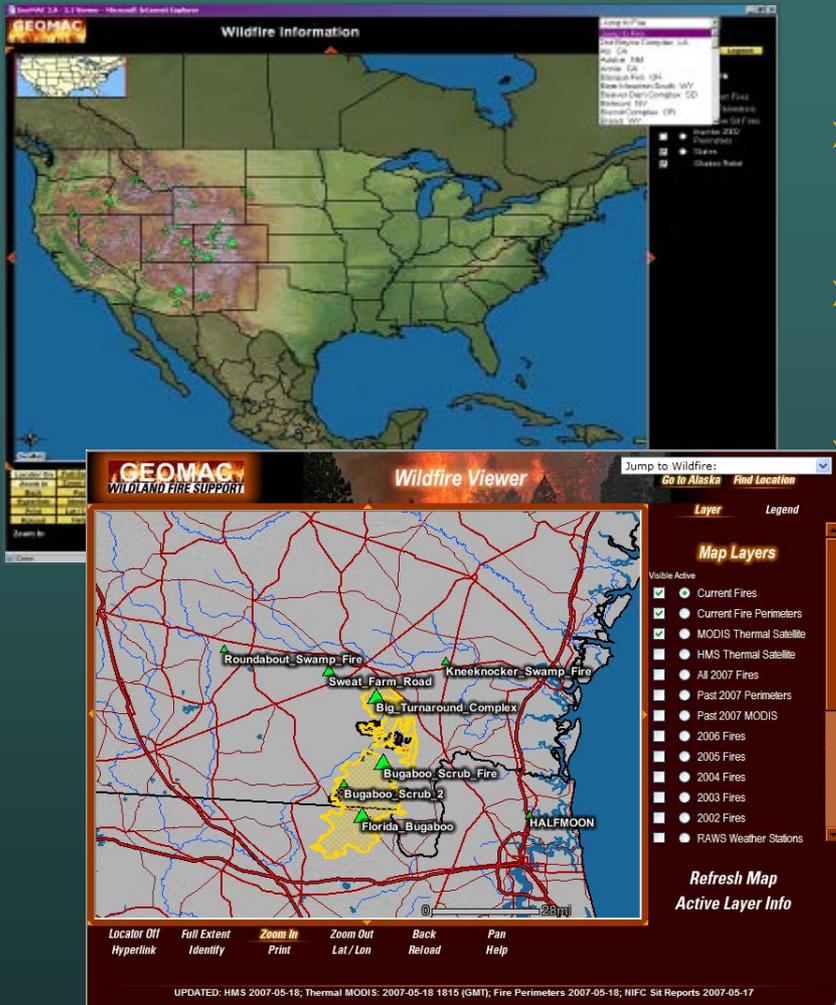


Integrated Data Sources

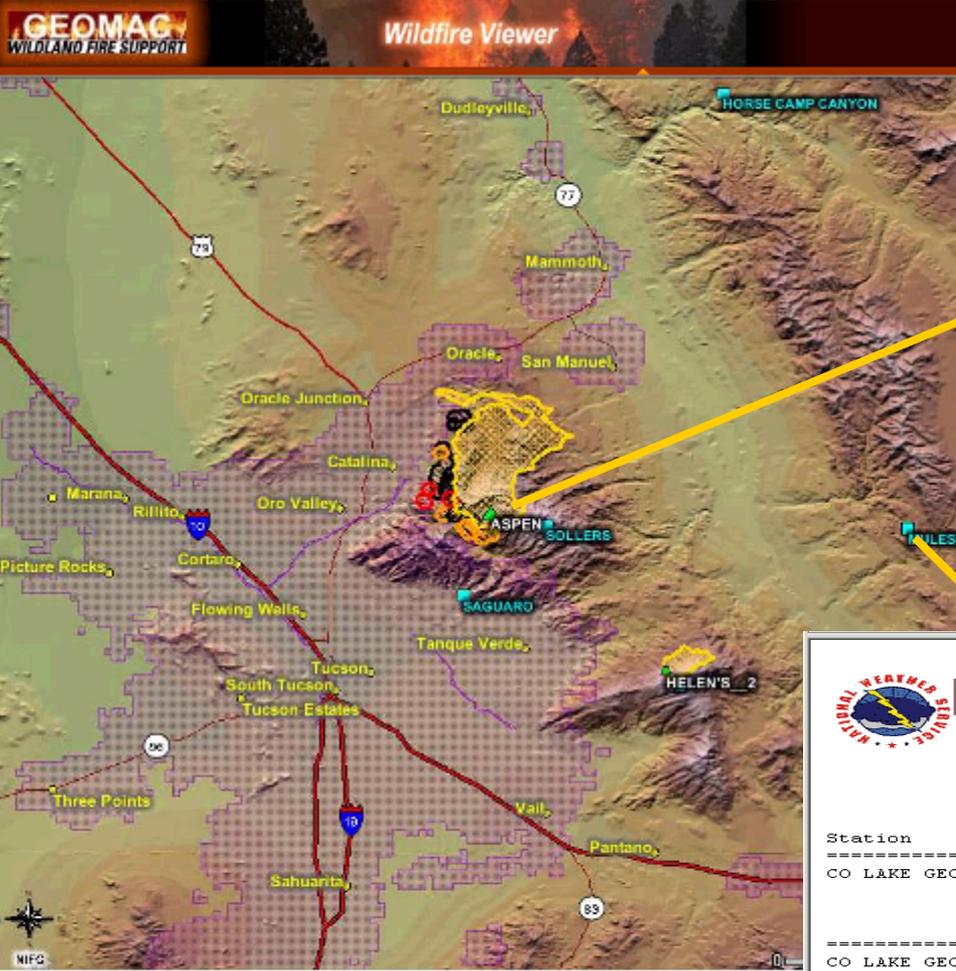


Statistics:

- 2002
 - 7.2 million acres burned* -- 50+ Million requests
 - 2003
 - 3.8 million acres burned* – 17.2 million requests
 - 2004
 - 7.9 million acres burned* – 18 million requests
 - 2005
 - 8.2 million acres burned* – 22.9 million requests
 - 2006
 - 9.9 million acres burned* – 45.4 million requests
 - 2,260 perimeters loaded
 - 2007
 - 9.4 million acres burned* – 61.8 million requests
 - 2,882 perimeters loaded
 - 2008
 - 4.8 million acres burned* – 41.1 million requests
 - 5,421 perimeters loaded
- *Source: National Interagency Coordination Center



Hyperlink to Reports



INCIDENT MANAGEMENT SITUATION REPORT THURSDAY, JULY 4, 2002 0800 MDT NATIONAL PREPAREDNESS LEVEL 5

CURRENT SITUATION:

Initial attack activity was heavy in the Southwest Area, moderate in the Eastern Great Basin, Rocky Mountain and Northern California Areas, and light elsewhere. Nationally, 190 newfires were reported; one became a large fire in the Northern California Area. Two large fires were contained, one each in the Southwest and Southern California Areas. Very high to extreme fire indices were reported in Arizona, California, Colorado, Kansas, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, Texas, Utah and Wyoming.

A faller assigned to the Missionary Ridge fire near Durango, CO was fatally injured on July 2nd while cutting hazard trees. The firefighting community extends condolences to the family and friends of the deceased.

ROCKY MOUNTAIN AREA LARGE FIRES:

Priorities are being established by the Rocky Mountain Multi-Agency Coordinating Group based on information submitted via Wildland Fire Situation Analysis reports and Incident Status Summary (ICS-209) forms. An Area Command Team (Chesley) is assigned to manage the Missionary Ridge fire.

GRIZZLY GULCH, South Dakota State Forestry. A Type 1 Incident Management Team (Hefner) is assigned. This fire, burning in ponderosa pine, aspen and grass, is on the outskirts of Deadwood, SD. Torching, spotting and moderate runs were observed on the northeast, east and south flanks. Crews are constructing fireline on the northeast flank near Pillar Peak and on the east flank near the community of Galena. Steep, extremely rugged terrain on the south flank is impeding suppression efforts. Residents south of Radio Tower Road, east of Deadwood, were issued mandatory evacuation orders yesterday. A voluntary evacuation of homes along the south side of US Highway 14A occurred at the same time. Deadwood and portions of Lead remain evacuated; structure protection is in place.

Weather Observations

Station	GOES ID	Elev	Lat	Long										

CO LAKE GEORGE	3240C3D8	7485	38:58:38	105:21:19										

			Dew											
			Tnp Pt	Wind	Pcpn Rh	Fuel Temp	Peak Wind	Bat Volt	Fuel Moist					

CO LAKE GEORGE			04/13532	56/ 41/1404/	0.35 RH 57 FT 55/	14G06	12.9	FM	MM					
CO LAKE GEORGE			04/12532	44/ 38/1403/	0.35 RH 80 FT 43/	14G04	12.7	FM	MM					
CO LAKE GEORGE			04/11532	41/ 36/0900/	0.35 RH 83 FT 39/	13G00	12.6	FM	MM					
CO LAKE GEORGE			04/10532	42/ 35/1300/	0.35 RH 79 FT 39/	15G04	12.6	FM	MM					
CO LAKE GEORGE			04/08532	44/ 37/1302/	0.35 RH 77 FT 42/	14G05	12.6	FM	MM					
CO LAKE GEORGE			04/07532	45/ 36/1102/	0.35 RH 72 FT 43/	16G04	12.6	FM	MM					
CO LAKE GEORGE			04/06532	48/ 37/0900/	0.35 RH 66 FT 45/	10G06	12.7	FM	MM					
CO LAKE GEORGE			04/05532	51/ 38/1502/	0.35 RH 61 FT 48/	13G07	12.7	FM	MM					
CO LAKE GEORGE			04/04532	54/ 34/1303/	0.35 RH 48 FT 50/	14G05	12.7	FM	MM					
CO LAKE GEORGE			04/03532	61/ 35/2500/	0.35 RH 39 FT 57/	32G09	12.8	FM	MM					
CO LAKE GEORGE			04/02532	65/ 36/3104/	0.35 RH 35 FT 62/	26G18	12.8	FM	MM					
CO LAKE GEORGE			04/00532	69/ 37/3302/	0.35 RH 31 FT 69/	MMG15	13.1	FM	MM					
CO LAKE GEORGE			03/23532	68/ 35/3511/	0.35 RH 30 FT 70/	MMG21	14.0	FM	MM					
CO LAKE GEORGE			03/22532	72/ 38/3606/	0.35 RH 30 FT 74/	02G22	13.9	FM	MM					
CO LAKE GEORGE			03/21532	75/ 40/0505/	0.35 RH 29 FT 79/	04G17	13.9	FM	MM					

Locality Off Full Extent Zoom In Zoom Out Back Pan
Hyperlink Identify Print Lat / Lon Reload Help

RAWS Weather Station
Useable to hyperlinks with submitted

UPDATED: Thermal AVHRR 2003-08-30 1610 (GMT) Thermal MODIS 2003-07-

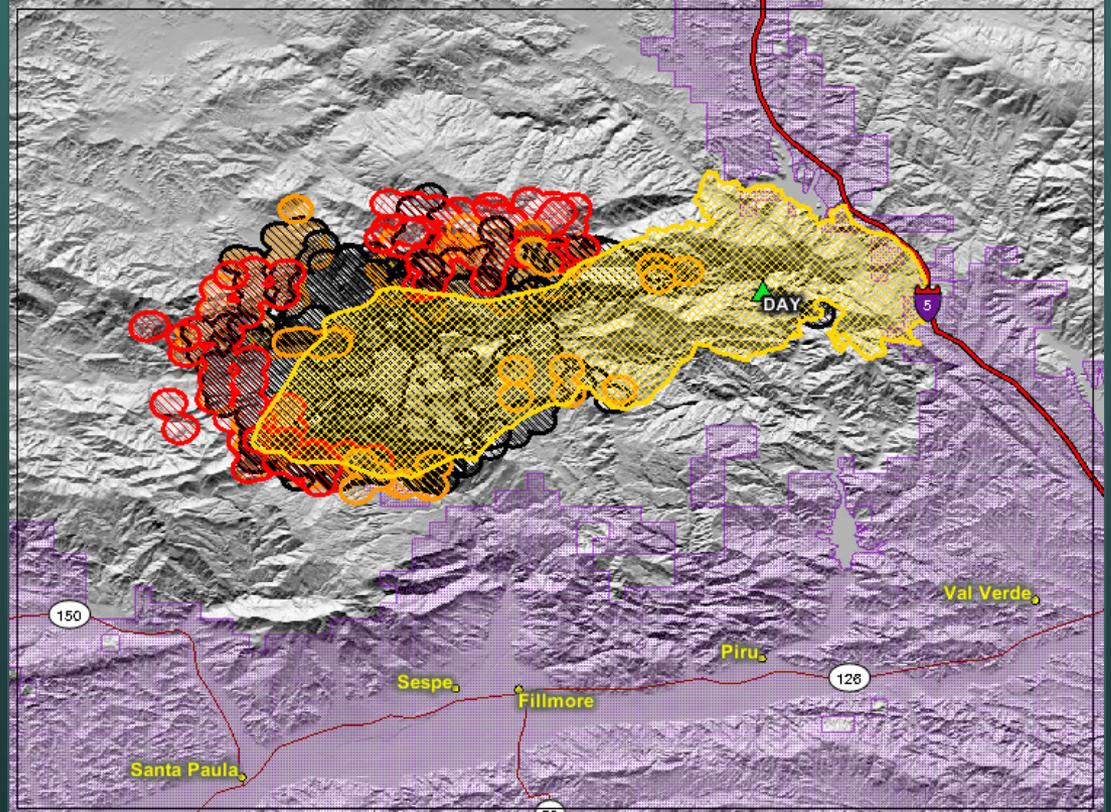
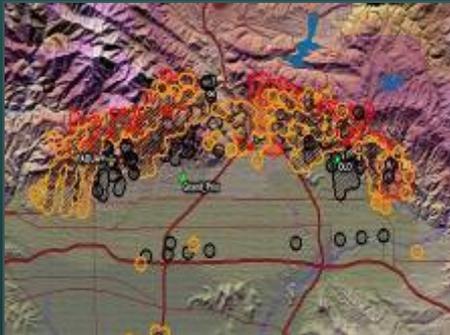


Integrated Remotely Sensed Data

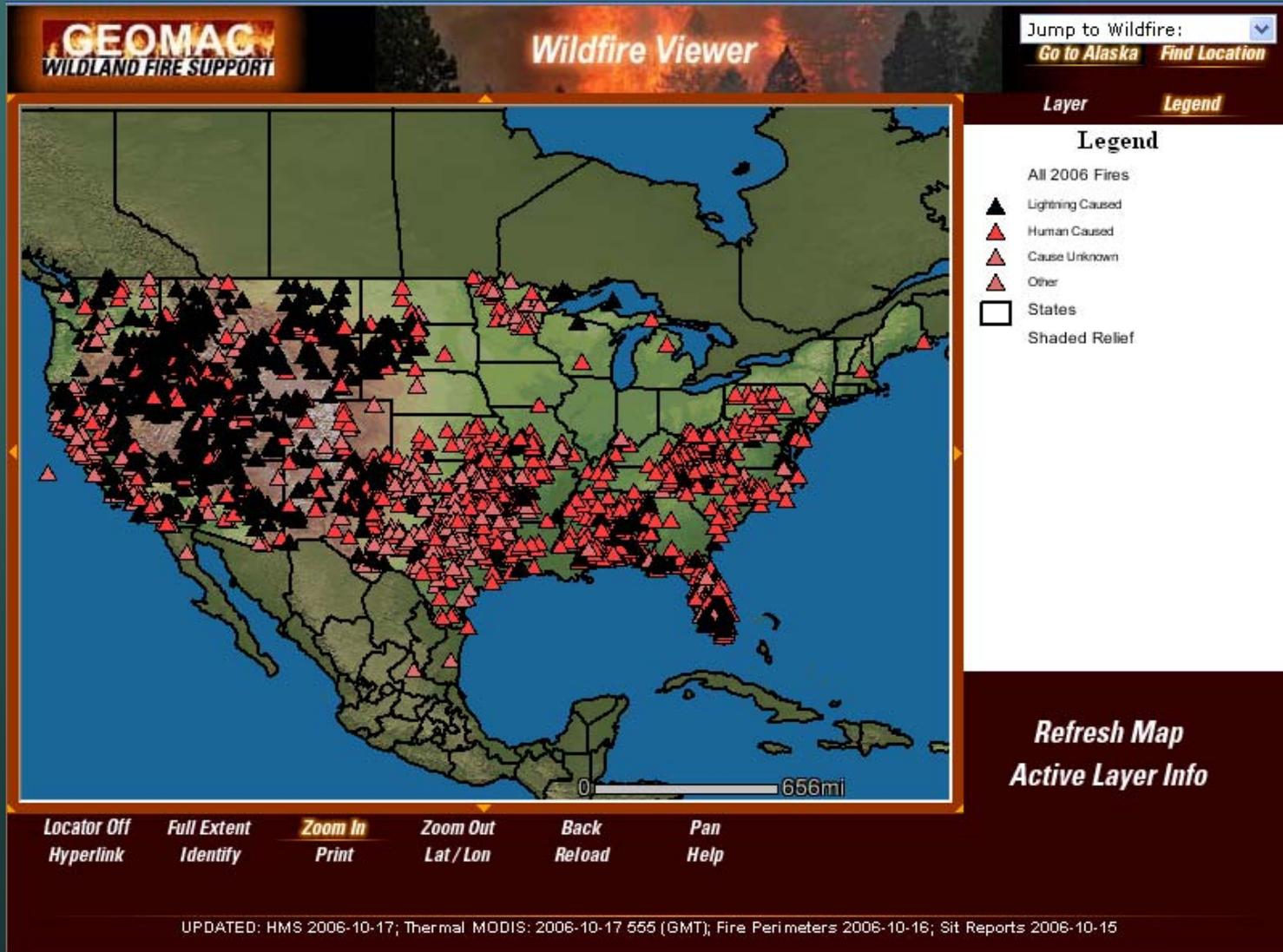
DMSP



MODIS



Fire History



Tactical Level Geospatial Information (Restricted Access)

❖ Rapid Data Delivery System (RDDS)

USGS Rapid Data Delivery System (RDDS)

Layers

- Active Fires
 - Active Fire Perimeters
 - Fast 2007 Perimeters
 - Historic Perimeters (2001-2006)
 - Theoretical MODIS
- NOAA Hurricane Tracking
- Earthquakes > 4 mag
 - RAW'S Weather Stations
- Active Volcanoes
 - Cities (2mi)
 - Cities (25 mi)
- State and Province Boundaries
 - County Boundaries
 - Interstates (25 mi)
 - Major Roads (2 mi)
 - Roads (100k)
 - Foothills (intermittent)
 - Major Rivers (25 mi)
 - Floodlines - NHD High
 - Floodlines - RDD Medium
 - Major Lakes
 - Water Bodies - NHD High
 - Water Bodies - NHD Medium
 - Political Limits
 - 24K Index
 - Shaded Relief - NED
- Shaded Relief

Enter Data

USA.gov

Department of the Interior

U.S. Geological Survey

URL: <http://firedata.cr.usgs.gov>

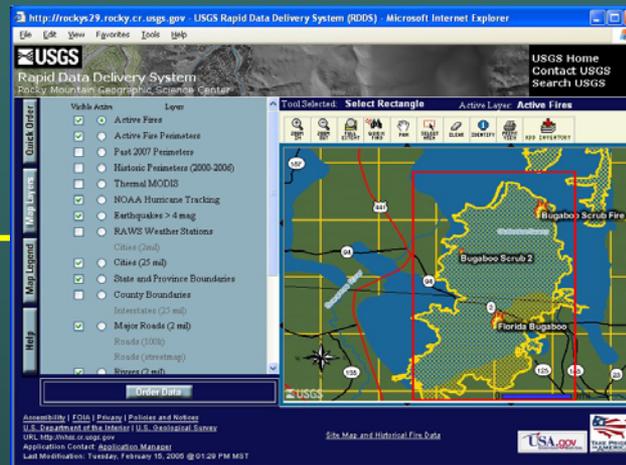
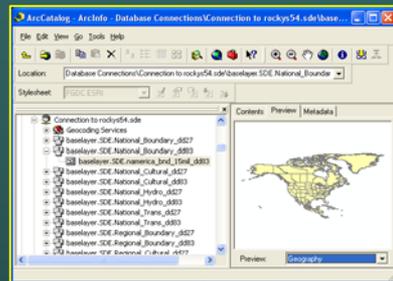
Application Contact: Application Manager

Last Modified: Tuesday, February 16, 2009 @ 01:28 PM MST

<http://firedata.cr.usgs.gov>

Tactical Level Information - Raster Data Management

ArcSDE Database



Raster



Transportation Hydrography Boundaries, etc



Imagery



Raster Map - DRG



DEMs & Shaded Relief

Tactical Level Information - Ordering Vector Data

http://firedata.cr.usgs.gov?albers=false&Top=31.068883919413796&Right=-82.28945673992673...

USGS Rapid Data Delivery System - Order Form

Click on box to select product(s). Product not available at current map scale. [Order Help](#)

GEOGRAPHIC EXTENT

*Upper Lft Lat: *Lower Rht Lat:
*Upper Lft Lon: *Lower Rht Lon:

DESIRED VECTOR PRODUCTS

<input type="checkbox"/> Active Fires	<input type="checkbox"/> County Boundaries
<input type="checkbox"/> Active Fire Perimeters	<input type="checkbox"/> Interstates (2.5 mil)
<input type="checkbox"/> Past 2007 Perimeters	<input type="checkbox"/> Major Roads (2 mil)
<input type="checkbox"/> Historic Perimeters (2001-2006)	<input type="checkbox"/> Roads (100k)
<input type="checkbox"/> Thermal MODIS	<input type="checkbox"/> Major Rivers (25 mil)
<input type="checkbox"/> NOAA Hurricane Tracking	<input type="checkbox"/> Flowlines - NHD High
<input type="checkbox"/> Earthquakes > 4 mag	<input type="checkbox"/> Flowlines - NHD Medium
<input type="checkbox"/> RAWS Weather Stations	<input type="checkbox"/> Major Lakes
<input type="checkbox"/> Active Volcanoes	<input type="checkbox"/> Water Bodies - NHD High
<input type="checkbox"/> Cities (2mil)	<input type="checkbox"/> Water Bodies - NHD Medium
<input type="checkbox"/> Cities (25 mil)	<input type="checkbox"/> Federal Lands
<input type="checkbox"/> State and Province Boundaries	<input type="checkbox"/> 24K Index

DESIRED DATA PROJECTION FOR RASTER PRODUCTS

UTM ALBERS GEOGRAPHIC

DESIRED RASTER PRODUCTS

TopoMap 1:24K [DRG]: **Ortho Imagery:**

<input type="checkbox"/> Shaded Relief [SR]: <input type="text" value="Inventory"/>	<input type="checkbox"/> Black/White - 1m [BW1M] <input type="text" value="Inventory"/>
<input type="checkbox"/> SR/TopoMap Blend [BLEND]: <input type="text" value="Inventory"/>	<input type="checkbox"/> Color Infrared - 1m [CIR1M] <input type="text" value="Inventory"/>
<input type="checkbox"/> DEM [DEM]: <input type="text" value="Inventory"/>	<input type="checkbox"/> Natural Color - 1m [NC1M] <input type="text" value="Inventory"/>

DESIRED OUTPUT FORMAT FOR RASTER PRODUCTS

Geo Tiff (default): JPEG: (DEM and Fire Behavior Layers export as ASCII Grid only.)

DELIVERY METHOD AND ORDER NAME FOR RASTER PRODUCTS

FTP CD/DVD ORDER NAME:

(default: lastname_firstname, product abbreviation will be appended to order name, i.e. smith_john_[DRG])

CONTACT INFORMATION

*First Name: Cell Phone:
*Last Name: *Email:
*Office Phone: *Email(confirm):

ORDER DATA

http://rocky29.rocky.cr.usgs.gov - USGS Rapid Data Delivery System (RDDS) - Microsoft Internet Explorer

USGS Rapid Data Delivery System
Rocky Mountain Geographic Science Center

USGS Home
Contact USGS
Search USGS

Tool Selected: **Select Rectangle** Active Layer: **Active Fires**

Visible Active Layers

- Active Fires
- Active Fire Perimeters
- Past 2007 Perimeters
- Historic Perimeters (2000-2006)
- Thermal MODIS
- NOAA Hurricane Tracking
- Earthquakes > 4 mag
- RAWS Weather Stations
- Cities (2mil)
- Cities (25 mil)
- State and Province Boundaries
- County Boundaries
- Interstates (2.5 mil)
- Major Roads (2 mil)
- Roads (100k)
- Roads (streetmap)
- Rivers (2 mil)

Order Data

Accessibility | FOIA | Privacy | Policies and Notices
U.S. Department of the Interior | U.S. Geological Survey
URL <http://nhss.cr.usgs.gov>
Application Contact: [Application Manager](#)
Last Modification: Tuesday, February 15, 2005 @ 01:29 PM MST

Site Map and Historical Fire Data

USA.gov TAKE PRIDE IN AMERICA

Tactical Level Information - Ordering Raster Data

http://firedata.cr.usgs.gov?albers=false&Top=31.068883919413796&Right=-82.28945673992673...

USGS Rapid Data Delivery System - Order Form

*** - required information for raster products** Order Help

Click on box to select product(s). Product not available at current map scale.

GEOGRAPHIC EXTENT

*Upper Lft Lat: *Lower Rht Lat:
 *Upper Lft Lon: *Lower Rht Lon:

DESIRED VECTOR PRODUCTS

<input type="checkbox"/> Active Fires	<input type="checkbox"/> County Boundaries
<input type="checkbox"/> Active Fire Perimeters	<input type="checkbox"/> Interstates (25 mi)
<input type="checkbox"/> Past 2007 Perimeters	<input type="checkbox"/> Major Roads (2 mi)
<input type="checkbox"/> Historic Perimeters (2001-2006)	<input type="checkbox"/> Roads (100k)
<input type="checkbox"/> Thermal MODIS	<input type="checkbox"/> Major Rivers (25 mi)
<input type="checkbox"/> NOAA Hurricane Tracking	<input type="checkbox"/> Flowlines - NHD High
<input type="checkbox"/> Earthquakes > 4 mag	<input type="checkbox"/> Flowlines - NHD Medium
<input type="checkbox"/> RAWs Weather Stations	<input type="checkbox"/> Major Lakes
<input type="checkbox"/> Active Volcanoes	<input type="checkbox"/> Water Bodies - NHD High
<input type="checkbox"/> Cities (2mi)	<input type="checkbox"/> Water Bodies - NHD Medium
<input type="checkbox"/> Cities (25 mi)	<input type="checkbox"/> Federal Lands
<input type="checkbox"/> State and Province Boundaries	<input type="checkbox"/> 24K Index

DESIRED DATA PROJECTION FOR RASTER PRODUCTS

UTM ALBERS GEOGRAPHIC

DESIRED RASTER PRODUCTS

Click to Preview raster product. This may take several seconds to create.

<input type="checkbox"/> TopoMap 1:24K [DRG]: <input type="button" value="P"/> Inventory	Ortho Imagery:
<input type="checkbox"/> Shaded Relief [SR]: <input type="button" value="P"/> Inventory	<input type="checkbox"/> Black/White - 1m [BW1M] <input type="button" value="P"/> Inventory
<input type="checkbox"/> SR TopoMap Blend [BLEND]: <input type="button" value="P"/> Inventory	<input type="checkbox"/> Color Infrared - 1m [CIR1M] <input type="button" value="P"/> Inventory
<input type="checkbox"/> DEM [DEM]: <input type="button" value="P"/> Inventory	<input type="checkbox"/> Natural Color - 1m [NC1M] <input type="button" value="P"/> Inventory

DESIRED OUTPUT FORMAT FOR RASTER PRODUCTS

Geo Tiff (default): JPEG: (DEM and Fire Behavior Layers export as ASCII Grid only.)

DELIVERY METHOD AND ORDER NAME FOR RASTER PRODUCTS

FTP CDDVD **ORDER NAME:**

(default: lastname_firstname, product abbreviation will be appended to order name, i.e. smith_john [DRG])

CONTACT INFORMATION

*First Name: Cell Phone:
 *Last Name: *Email:
 *Office Phone: *Email(confirm):

ORDER DATA

http://rocky29.rocky.cr.usgs.gov - USGS Rapid Data Delivery System (RDDS) - Microsoft Internet Explorer

File Edit View Favorites Tools Help

USGS USGS Home
Contact USGS
Search USGS

Rapid Data Delivery System
Rocky Mountain Geographic Science Center

Tool Selected: **Select Rectangle** Active Layer: **Active Fires**

Quick Order **Map Layers** **Map Legend** **Help**

<input checked="" type="checkbox"/> Visible Active	<input type="checkbox"/> Layers
<input checked="" type="checkbox"/> Active Fires	<input type="checkbox"/> Active Fire Perimeters
<input type="checkbox"/> Active Fire Perimeters	<input type="checkbox"/> Past 2007 Perimeters
<input type="checkbox"/> Past 2007 Perimeters	<input type="checkbox"/> Historic Perimeters (2000-2006)
<input type="checkbox"/> Historic Perimeters (2000-2006)	<input type="checkbox"/> Thermal MODIS
<input checked="" type="checkbox"/> NOAA Hurricane Tracking	<input type="checkbox"/> NOAA Hurricane Tracking
<input checked="" type="checkbox"/> Earthquakes > 4 mag	<input type="checkbox"/> RAWs Weather Stations
<input type="checkbox"/> RAWs Weather Stations	<input type="checkbox"/> Cities (2mi)
<input type="checkbox"/> Cities (2mi)	<input type="checkbox"/> Cities (25 mi)
<input checked="" type="checkbox"/> State and Province Boundaries	<input type="checkbox"/> State and Province Boundaries
<input type="checkbox"/> State and Province Boundaries	<input type="checkbox"/> County Boundaries
<input type="checkbox"/> County Boundaries	<input type="checkbox"/> Interstates (25 mi)
<input checked="" type="checkbox"/> Major Roads (2 mi)	<input type="checkbox"/> Major Roads (2 mi)
<input type="checkbox"/> Major Roads (2 mi)	<input type="checkbox"/> Roads (100k)
<input type="checkbox"/> Roads (100k)	<input type="checkbox"/> Roads (streetmap)
<input checked="" type="checkbox"/> Rivers (2mi)	<input type="checkbox"/> Rivers (2mi)

Order Data

Accessibility | FOIA | Privacy | Policies and Notices
 U.S. Department of the Interior | U.S. Geological Survey
 URL http://nhss.cr.usgs.gov
 Application Contact: Application Manager
 Last Modification: Tuesday, February 15, 2005 @ 01:29 PM MST

Site Map and Historical Fire Data

USA.gov TAKE PRIDE IN AMERICA

Tactical Level Information - Inventories

http://firedata.cr.usgs.gov/?albers=false&Top=31.068883919413796&Right=-82.28945673992673...

USGS Rapid Data Delivery System - Order Form

Click on box to select product(s). Product not available at current map scale. [Order Help](#)

GEOGRAPHIC EXTENT

*Upper Lft Lat: 31.068883919413796 *Lower Rht Lat: 31.041239670329556
*Upper Lft Lon: -82.32314816849816 *Lower Rht Lon: -82.28945673992673

DESIRED VECTOR PRODUCTS

<input type="checkbox"/> Active Fires	<input type="checkbox"/> County Boundaries
<input type="checkbox"/> Active Fire Perimeters	<input type="checkbox"/> Interstates (25 mil)
<input type="checkbox"/> Past 2007 Perimeters	<input type="checkbox"/> Major Roads (2 mil)
<input type="checkbox"/> Historic Perimeters (2001-2006)	<input type="checkbox"/> Roads (100k)
<input type="checkbox"/> Thermal MODIS	<input type="checkbox"/> Major Rivers (25 mil)
<input type="checkbox"/> NOAA Hurricane Tracking	<input type="checkbox"/> Flowlines - NHD High
<input type="checkbox"/> Earthquakes > 4 mag	<input type="checkbox"/> Flowlines - NHD Medium
<input type="checkbox"/> RAWs Weather Stations	<input type="checkbox"/> Major Lakes
<input type="checkbox"/> Active Volcanoes	<input type="checkbox"/> Water Bodies - NHD High
<input type="checkbox"/> Cities (2mil)	<input type="checkbox"/> Water Bodies - NHD Medium
<input type="checkbox"/> Cities (25 mil)	<input type="checkbox"/> Federal Lands
<input type="checkbox"/> State and Province Boundaries	<input type="checkbox"/> 24K Index

DESIRED DATA PROJECTION FOR RASTER PRODUCTS

UTM ALBERS GEOGRAPHIC

DESIRED RASTER PRODUCTS

Click to Preview raster product. This may take several seconds to create.

<input type="checkbox"/> TopoMap 1:24K [DRG]: <input type="button" value="Inventory"/>	Ortho Imagery:
<input type="checkbox"/> Shaded Relief [SR]: <input type="button" value="Inventory"/>	<input type="checkbox"/> Black/White - 1m [BW1M] <input type="button" value="Inventory"/>
<input type="checkbox"/> SR/TopoMap Blend [BLEND]: <input type="button" value="Inventory"/>	<input type="checkbox"/> Color Infrared - 1m [CIR1M] <input type="button" value="Inventory"/>
<input type="checkbox"/> DEM [DEM]: <input type="button" value="Inventory"/>	<input type="checkbox"/> Natural Color - 1m [NC1M] <input type="button" value="Inventory"/>

DESIRED OUTPUT FORMAT FOR RASTER PRODUCTS

Geo Tiff (default): JPEG: (DEM and Fire Behavior Layers export as ASCII Grid only.)

DELIVERY METHOD AND ORDER NAME FOR RASTER PRODUCTS

FTP CD/DVD ORDER NAME: _____
(default: lastname_firstname, product abbreviation will be appended to order name, i.e. smith_john_DRG)

CONTACT INFORMATION

*First Name: _____ Cell Phone: _____
*Last Name: _____ *Email: _____
*Office Phone: _____ *Email(confirm): _____

ORDER DATA

[Order Help](#)

30m DEM & Shaded Relief



DRGs & Shaded Relief Blends



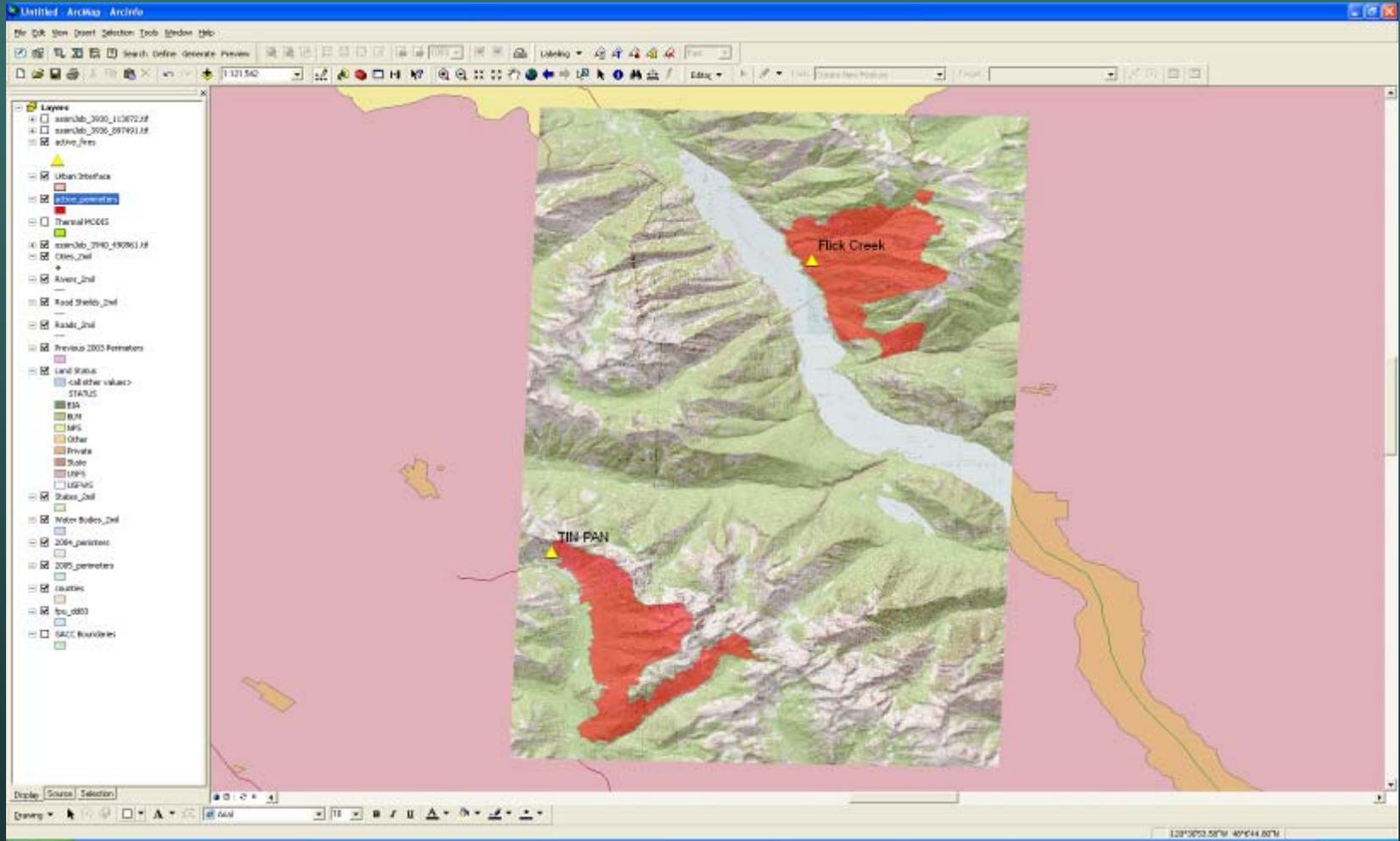
DRGs (Collarless Topos)



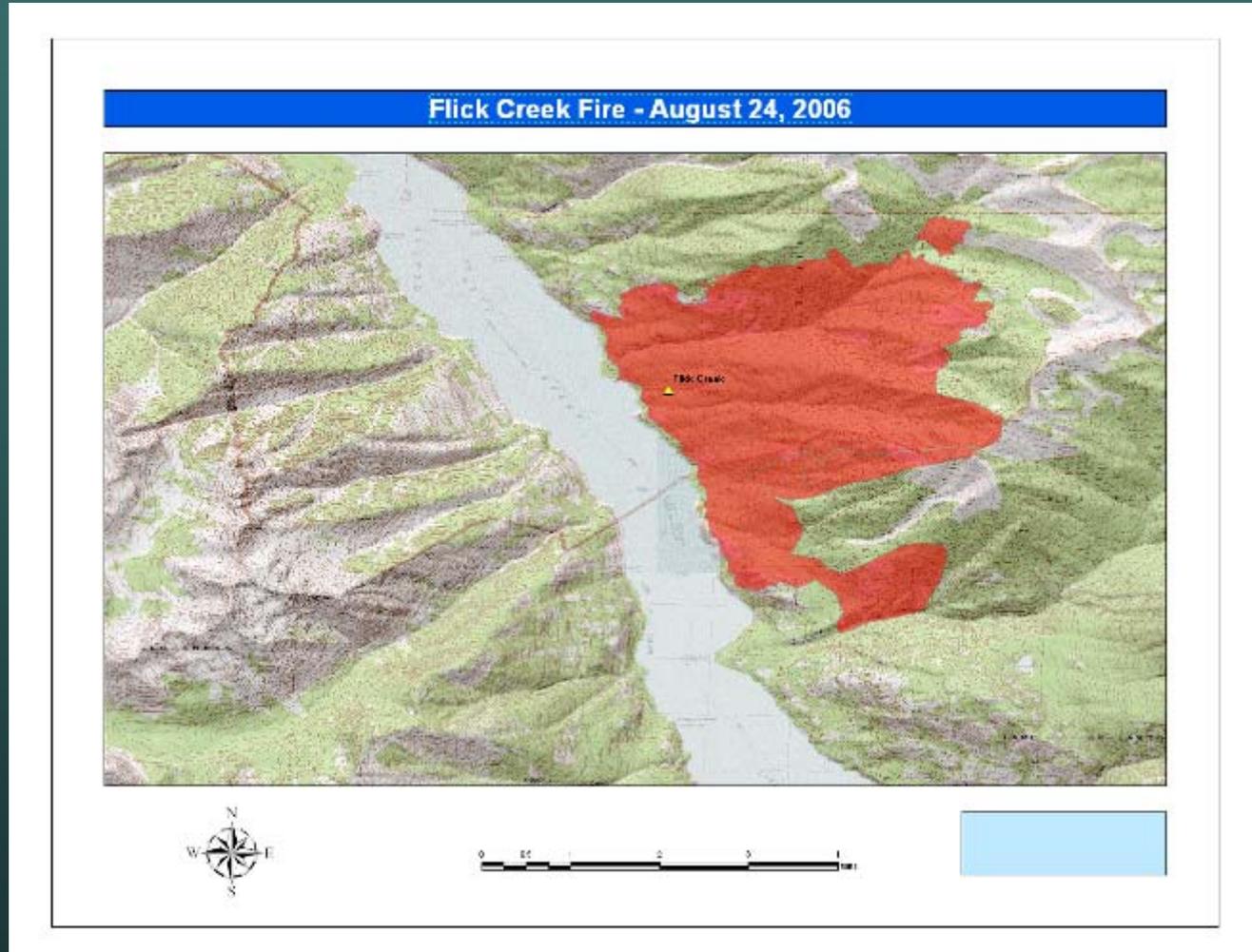
1m Natural Color Imagery



Tactical Level Information - Raster Data Brought into Mapping Application



Tactical Level Information - Map Created from the Raster Data Download



Tactical Level Information - 3D Visualization

Google Earth

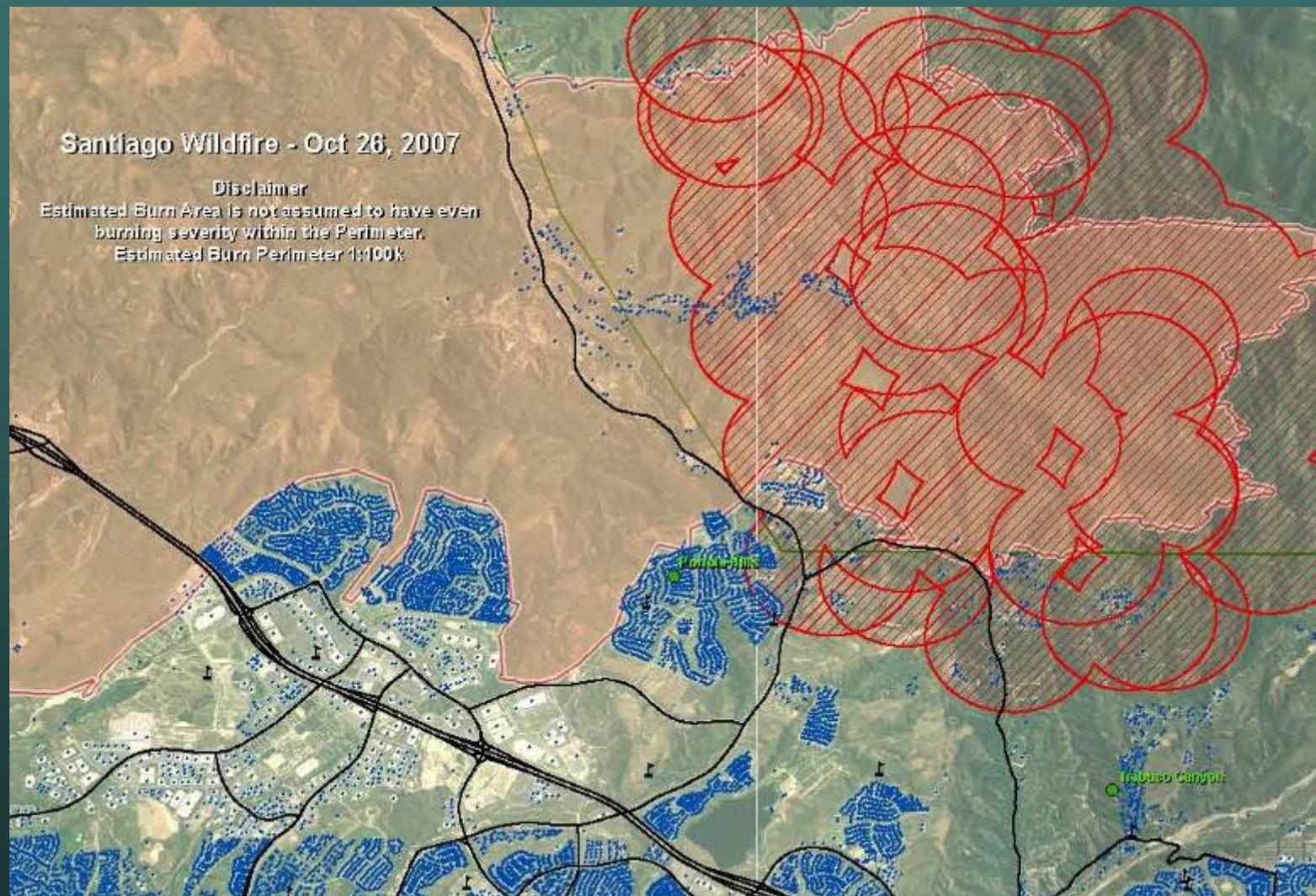


Future Datasets:

- BLM 100K Maps
- Expanded and Updated NAIP Imagery
- 10-meter Elevation Data
- Ecosystems Data



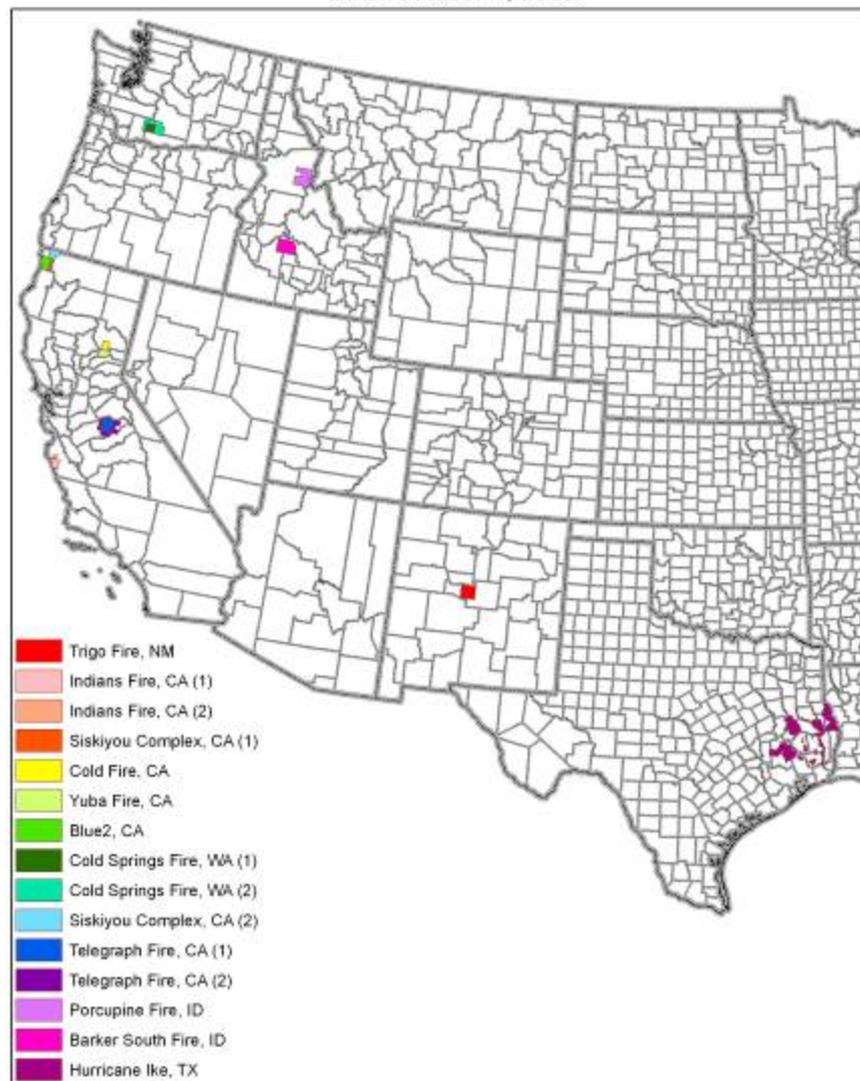
Rapid Assessment of Values at risk (RAVAR)



RAVAR

74,719 structure points

RAVAR 2008
as of October 1, 2008



USGS Rapid Data Delivery for Support of Wildfires and Natural Disasters

Websites:

GeoMAC: www.geomac.gov
NHSS: www.nhss.cr.usgs.gov
RDDS: <http://firedata.cr.usgs.gov>

Contact Information:

Liz Lile
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Denver Federal Center, Bldg. 810, MS-516
ellile@usgs.gov
Ph. (303)-202-4326