

Good Afternoon, my name is Stephen Hammond. I am the Director of U. S. Geological Survey's (USGS) Emergency Operations Office in the National Geospatial Program. During emergency response I chair the Geospatial Information Response Team known as 'GIRT'.

The GIRT was established to facilitate the effective collection, storage, and dissemination of geospatial data information and products during an emergency. The GIRT is activated by the USGS' Hazards Response Executive Committee (HREC) to respond to international, national or significant local emergency response situations. The GIRT ensures that the USGS geospatial information and services response to an emergency is being conducted in a coordinated, timely manner. The geospatial information and products provided by the USGS are valued by emergency responders, land and resource managers, and scientific staff. By drawing on the USGS' exceptional cadre of geospatial expertise and capabilities, the GIRT has effectively and efficiently responded to a number of anthropogenic events and natural hazards. The GIRT enhances the USGS' ability to provide the unbiased scientific information that better enables decision makers to make informed decisions.

Specific to the Deepwater Horizon Incident, the GIRT was the first USGS hazard team to be activated. The GIRT has been hosting weekly conference calls that began April 22, 2010. It has sponsored or had oversight of a number of activities including:

- Coordination of the posting of imagery on the USGS Hazard Data Distribution System site used by the first response community and working closely with the Interagency Remote Sensing Coordination Cell (IRSCC) to facilitate action on remote sensing;
- Ensuring that the USGS is made aware of geospatial requirements and is providing services to the local governments, academia and others via the USGS National Geospatial Program Office Liaison network;
- Sponsoring the development of a database of oil spill related sampling sites that is being accessed by a wide community of users through the internet;
- Chairing the Natural Resource Damage Assessment (NRDA) Aerial Imagery Technical Working Group;
- Supporting the National Incident Command's Flow Rate Technical Group (FRTG) providing access to remotely sensed data;
- Ensuring the efficient, critical review of geospatial materials is being conducted in accordance with the USGS Fundamental Science Practices; and



- Serving as geospatial technical experts for the Department of the Interior.

One of the strengths and primary functions of the GIRT is the ability to reach back into the organization to support staffing requests related to requirements for geospatial expertise at the Department of the Interior Operations Center (IOC), Incident Command Posts in Venice, LA and Washington, D.C. Facilitation resulted in the National Geospatial Technical Operations Center assisting the National Wetlands Center with the production of map products for nearly 360 miles of gulf coast shoreline.

The National Wetlands Research Center (NWRC) maintains a Science Response Vehicle (SRV) capable of rapid deployment in response to natural disasters throughout the United States. In late April, the SRV deployed to the Incident Command Post in Venice, LA at the request of the US Fish and Wildlife Service and the US Coast Guard. On board computers, software, and plotters are used to provide geospatial support. Functions include high resolution imagery for boom placement and shoreline cleanup, daily update maps for operational staff, current imagery from other sources, digitizing information, and on-demand hard copy map products. It is not uncommon to print 50-100 maps each day in support of the Coast Guard, NOAA, CDC, Delta National Wildlife Refuge, Department of Fish and Wildlife, Sheriff's department, US Army and vessels of opportunity.

Soon after the Deepwater Horizon oil platform sank, the U.S. Coast Guard contacted the USGS to provide remotely sensed imagery to monitor what would likely become an oil spill. That same day, USGS submitted an activation request to the International Charter Space and Major Disasters for collections of radar imagery to map the spill. NOAA assumed the role of Project Manager for the Charter activation, and they began to manage tasking coordination and product generation for Charter Radar satellites.

On April 26, 2010 USGS hosted the first Remote Sensing Working Group teleconference on behalf of NOAA and USCG. The calls continued on a daily basis for many weeks, with participation from USCG, NOAA, USGS, DOI, BOEMRE, NPS, DHS, NASA, DoD, NGA, EPA, USDA, CDC, NGB, and the states of Florida, Alabama, Mississippi, Louisiana and Texas. The final call was held on Tuesday, July 27, 2010. The calls provided a forum for discussions on requirements, collections, processing, and dissemination of remotely sensed data.

The USGS Hazards Data Distribution System (HDDS) is being used as a dissemination portal for pre- and post-event satellite and aerial imagery. All public domain data is also being made available through a web mapping service (WMS). To date, there are approximately 6 terabytes of public and licensed data being stored on HDDS, with approximately 9 terabytes of data having been downloaded. A new graphical user interface has been released for HDDS to aid the response community in the data



discovery and download process. The WMS has approximately 1.5 terabytes of imagery being served. Public imagery includes aerial photography from NOAA, NASA, USDA, USACE, Florida, and Louisiana. Satellite imagery is available from Landsat, MODIS, ASTER, MERIS, and EO-1. The licensed data come from more than a dozen providers that I will not name here but can provide if you are interested. (*The licensed data come from ALOS, Envisat, Formosat, DMCii, EPA ASPECT, Radarsat, COSMO SKYMED, ERS-2, MERIS, TerraSarX, IKONOS, Quickbird, Worldview, GeoEye, OceanSat, and SPOT.*)

The requirement for USGS geospatial support to the Interior Operations Center (IOC) in response to the Deepwater Horizon oil spill involves two activities, both of which are focused on situational awareness for the Secretary and other DOI senior officials. First, USGS maintains a geospatial data display, commonly referred to as the GeoWall in the IOC Conference Room for daily briefings (0800/1100/1300). The GeoWall is a pc-based system designed for large format display of high-resolution imagery and map data, the majority of which is acquired in the event of an emergency or other event of interest to DOI (e.g. natural disaster response or National Security Special Events). In response to the Deepwater Horizon oil spill, the GeoWall is being utilized to display the latest spill position; three-day forecast trajectory; shoreline cleanup and assessment activities; and other data on a high-resolution image base.

In addition to the GeoWall display, USGS analysts prepare a daily map product depicting the same spill position data and forecast trajectory information. This map is utilized by the DOI Watch Office for inclusion in the DOI Daily Emergency Management Situation Report. USGS analysts have been resident in the IOC, seven days-a-week, to address any ad hoc geospatial requirements for maps or information. As the containment effort has progressed, USGS has stepped back to a Monday through Friday physical presence, with personnel available on-call for weekend support.

This concludes my comments. I would be happy to answer any questions.

Prepared August 2, 2010 by:
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