USDA Forest Service Wildfire Support Programs Update

GOFC-Fire IT Meeting
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USDA Forest Service Wildfire Support Programs Using Satellite Data

Talking Points

- Active Fire Mapping Program
- Burned Area Emergency Response (BAER) Imagery Support Program
- Rapid Assessment of Vegetation Condition after Fire (RAVG) Program
- Monitoring Trends in Burn Severity (MTBS) Project
- Fire Season – Summary Statistics
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Active Fire Mapping Program

- The USDA Forest Service Active Fire Mapping (AFM) program provides critical, timely, and comprehensive imagery and fire geospatial data products for the wildfire management community and the public at large.
- The AFM fire locations are produced by an operational, satellite-based fire detection and monitoring program managed by the Remote Sensing Applications Center (RSAC) in Salt Lake City, Utah.
- High temporal resolution image data acquired NASA's Moderate Resolution Imaging Spectroradiometer (MODIS), and collected by RSAC via direct readout, are currently the primary remote sensing data source for AFM.

Active Fire Mapping Program

- The fire detections are processed and analyzed with current fire intelligence data and other key geographic strata provided by U.S. and Canadian fire management agencies.
- The results are a suite of near real-time, "value-added" geospatial products that provide an accurate and current assessment of current fire activity, fire intensity, burned area extent and smoke conditions throughout the U.S. and Canada.
- AFM also collects and integrates near real-time fire detection data detected by AVHRR and GOES, and eventually the Visible Infrared Imager Radiometer Suite (VIIRS) to be launched in late 2011.
- More information on the AFM program can be found at http://activefiremaps.fs.fed.us.

Burned Area Emergency Response (BAER) Imagery Support Program

- Post-fire flooding, erosion and other hazards often pose significant risks to public safety, natural and cultural resources and water quality.
- To mitigate these risks, the Forest Service deploys BAER teams to fires where special post-fire emergency stabilization efforts are required.
- BAER teams are mandated to prepare a response plan outlining appropriate emergency stabilization treatment prescriptions within seven days of fire containment.
- Accurate and timely mapping data of fire severity identified through satellite image analysis are crucial to BAER teams in developing adequate response plans.

Burned Area Emergency Response (BAER) Imagery Support Program

- The Forest Service BAER Imagery Support program is a cooperative effort between the Remote Sensing Applications Center (RSAC) in Salt Lake City, Utah and the US Geological Survey Center for Earth Resources Observation and Science (EROS) in Sioux Falls, South Dakota.
- The Centers coordinate to provide rapid response delivery of mid-resolution post-fire satellite imagery, Burned Area Reflectance Classifications (BARC), and other geospatial data to Forest Service and DOI BAER teams.
- Products are compiled and delivered to BAER teams typically within 24-36 hours of a support request by a BAER team.
- More information on the BAER Imagery Support program can be found at http://www.fs.fed.us/eng/rsac/baer.

Rapid Assessment of Vegetation Condition after Fire (RAVG) Program

- Following large wildfires, a rapid and quantitative post-fire assessment of vegetation conditions is important to support forest management decisions on the portion of the National Forest System (NFS) lands where forest vegetation management is allowed.
- The USDA Forest Service Rapid Assessment of Vegetation Condition after Wildfire (RAVG) program produces geospatial data and summary products characterizing post-fire forest conditions.
- These products facilitate post-fire vegetation management decision-making, and aid in the communication of reforestation and restoration needs to the Forest Service National Headquarters and Congressional decision makers.
- Currently, wildfires greater than 1,000 acres (404 hectares) of forestland (land that grows trees) on NFS lands are analyzed by RAVG.

Rapid Assessment of Vegetation Condition after Fire (RAVG) Program

- RAVG produces a suite of geospatial and tabular outputs using a Landsat-based change detection analysis, and are delivered within 30-45 days following containment of a fire.
- RAVG products include standard burn severity and vegetation mortality maps, and summary tables.
- Vegetation mortality maps characterizing forested vs. deforested conditions are produced by integrating existing vegetation maps and burn severity maps.
- More information on the RAVG program can be found at http://www.fs.fed.us/postfirevegcondition.

Monitoring Trends in Burn Severity (MTBS) Project

- The MTBS project assesses the frequency, extent, and magnitude (size and severity) of all large fires in the conterminous United States, Alaska, and Hawaii from 1984 to present.
- All fires reported as greater than 1,000 acres (404 hectares) in the western U.S. and greater than 500 acres (202 hectares) in the eastern U.S. are mapped across all ownerships.
- The project utilizes the extensive Landsat TM/ETM+ archive to consistently map and characterize historical and current fires.
- The MTBS project is conducted through a partnership between the U.S. Geological Survey National Center for Earth Resources Observation and Science (EROS) and the USDA Forest Service Remote Sensing Applications Center (RSAC).

Fire Season – Summary

Operational Support

- This has been a typically busy fire season, with the National Planning Level reached PL4 in early September. With a rapid decrease in fire activity NIFC returned to PL3 on September 20.
- Two fire mapping aircraft stationed in Boise received 542 infrared mapping requests (through Sept 15), and were able to service 491 requests (91%).
- The Burned Area Emergency Response (BAER) Imagery Support Program mapped 5,262,829 acres on 70 incidents, providing critical and timely support to the rapid response BAER teams.
- The USFS Active Fire Mapping (AFM) Program continued to provide mapping support to our internal and external stakeholders via the http://activefiremaps.fs.fed.us/ web portal. During the 2011 fire season the site experienced 7,243,301 user sessions and saw 4.5 terabytes of mapping data transferred to interested users.

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