
Breakout Session for Fires

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Recorder

Research Needs – Fire Emissions

- Improve satellite-derived burn scar data to augment real time satellite-derived area burned. (This will help improve retrospective AQ analyses.)
- Comparison of ground-reported fire detects & size vs satellite detects by MODIS, GOES & AVHRR. Evaluate current attempts to combine these methods to improve satellite-detects. Explore new ways to combine methods.
- Expand research on use of fire radiant energy to improve estimates of fuel consumed & smoke emitted in a fire.
- Research on use of portable monitoring to improve emissions & transport modeling capabilities.
- Continuous dialogue with NASA & NOAA scientists on fire detection, aerosol sensing etc needs so these needs can be reflected in upcoming satellite platforms.
- Emphasize further research on characterizing the aerosol column thru remote sensing.

Research Needs – Fire Emissions/Landscape

- Apply RS tools to characterize land use/fuels changes. Consider fuels alteration (natural & man-made). Develop relationships between RS info and live vs dead fuel loading.
- Develop RS-tools to estimate live & dead fuel moisture. Potentially link to (& correlate with) USFS/DOI land-based rH & fuel temp network which is being used to derive fuel moisture.
- Explore use of RS technologies (e.g., SAR interferometry,) to retrospectively characterize burn scar as a way of improving the real time estimates of area burned.
- Develop “before & after” RS landscape indices, NEXRAD & Haynes index to infer severity of fire.
- Satellite sensor “wish list”:
 - Higher spatially-resolved thermal IR – ideally geospatial.
 - Area burned AVHRR products on regional basis or at varying latitudes.

Research Needs – Fire Emissions/ Transport

- NOAA (NESDIS) produces digitized files in near real time (twice daily) that locate the horizontal extent of fire plumes. Develop linkages to these NESDIS products so that they may be used routinely to augment real time fire forecasting models (e.g., BlueSky).
- Develop methods (or identify the need for new sensors) to verify the vertical extent of plumes & to estimate ground-level concentrations. These tools would be useful to evaluate transport models and could potentially be used directly to infer AQ concentrations directly.
- Correlate digitized visual plume database (available from NESDES) with ground-based speciated AQ data to further our understanding of the impact of fires on populated areas.
- Develop methods to determine the impact of fires on the 20% worst visibility days in Class I areas.