Background

- Biomass burning: an important contributor to the degradation of air quality because of its impact on ozone, particulate matter and Hazardous Air Pollutants (HAPS).
- Using EPA methods, crop residue burning is poorly characterized in the 2011 National Emission Inventory (NEI) for some parts of the country (feedback from the states).
- A more robust method is needed for future NEIs.

Previous NEI Methods

- 2002 NEI: 23 states reported emissions for this sector; no satellite information was used.
- 2005 NEI: This sector was not estimated, 2002 estimates used.
- 2008 NEI: SMARTFIRE/HMS fire detections used one fixed field size, emission factors all mapped to one SCC.
- 2011 NEI modeling platform: J. McCarty satellite-based procedure used; it was based on changes in the land surface over a 8 day period plus updates from the states, McCarty (2011).

New Method

- NOAA’s Hazard Mapping System (HMS) daily operational satellite product with QA provides “hot spots”.
- Year-specific National Agricultural Statistics Service (NASS) cropland data layer product distinguishes burned agricultural lands from rangeland.
- Each burn location assumed to have state-average field size.
- Method used to generate day-specific, county-resolved crop residue burning emissions for 2011 by crop type.

Results for 2011

Crop residue burning acres by crop type for 2011 for the CONUS

Summary and Future Directions

- Method provides an efficient way to estimate crop residue burning emissions.
- Method allows for easy updates and improvements.
- Estimates for 2014 will be available in January 2015.
- States will have access to review the information for their 2014 NEI submissions.

References