MANE-VU 2002 Fire Emissions Inventory

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MANE-VU Wildfire Inventory

- Pechan compiled all MANE-VU state CERR submittals and provided us with recommendations on how to improve the estimates
- MANE-VU decided NOT to spend resources on improving fire emissions
- Will rely on National Wildfire EI project

What we do have…

- CT, DE, ME, MA, MD, NJ, NH, NY, PA, & VT submitted wildfire information
- Acres burned data submitted by CT, DE, ME, MA & PA
  - Only about 11, 700 acres burned in 2002 in MANE-VU

Fuel loading

- MA, NY, PA & VT – AP-42
- DE- Land cover specific fuel loading factors
- ME – statewide weighted average fuel loading factor using proportion of acres by forest type in ME and NFDRS fuel loading classes that best match with each forest type

Wildfire Emission Factors

- DE – EPA 2003 report
- Rest of states used AP-42

Temporal profiles

- PA – put fires in first 6 month of the year, or last
- DE – start/end dates
  - Data used to compile monthly, weekly, daily allocation profiles
- VT – date fire started
- Rest of states - annual

Modeling

- Plume rise approach – modeling most wildfires as area source

Prescribed Burning

- Only DE, DC, ME, MD, and NJ submitted
  - County level
  - Fuel loading – state specific or AP-42
  - Emission factors – AP-42 or EPA 2003 report

Other Burning

- Agricultural Burning
  - No MANE-VU states submitted agburning for CERR
- Slash Burning
  - Only MD submitted – 20 acres in county

Eastern Canada Wildfires

- Subcontractor - RWDI
- Obtained activity data from 3 provinces in Eastern Modeling Domain
  - New Brunswick, Quebec, and Ontario
- Converted activity data into GIS format and projected to a common projection and Lambert Conic Conformal coordinate system based on MANE-VU grid

Eastern Canada (Cont.)

- Most of the large fires in 2002 fell outside of the 12km Eastern modeling domain
- Retained them in the inventory

Activity Data

- Acres burned (was not reported in Quebec, RWDI calculated based on GIS polygon data)
- State/ end date
- Fire location – either lat/ long or fire polygon
- Do not have – fire evolution, consumption factors

Consumption

- Waited several months for Consumption factors and EF recommendation from Environment Canada
- Never received one
- For New Brunswick - Maine consumption factor from NEI method = 27.8 tons/acre plus 17% smoldering adjustment factor
- For Quebec and Ontario – Alaskan Black Spruce = 57.6 tons/acre (no smoldering effect incorporated)

Assumptions

- Fire burned consistently from state to finish
- Fire assumed to be stationary over the geographic centroid of the burn perimeter
- All plume rise and related stack parameters required for point source files we left blank (MANE-VU may be using approach similar to WRAP to model large fires)

E. Canada Prescribed Burning

- Only received annual emissions from 2 census division in Ontario