

Wildfires
SCC Code: 2610000500
Pollutants of Concern: PM-10, PM-2.5
How is the National Emission Inventory developed for this category?
<p>Current Methodology (see also the link to the NEI Methodology Description):</p> <ul style="list-style-type: none"> • Acres burned at the State-level were obtained directly from four U.S. Department of the Interior agencies. Activity data from the Bureau of Indian Affairs (BIA) was available only at the regional level. • The activity data was allocated to the county level using BELD2 land cover type acreage for rural forest, brush, and grass categories. BIA data was first allocated to the State level using acres of tribal land in each state. State-level data were allocated to the county level using BELD2 State-to-county factors with the exception of AK and HI which BELD2 does not cover. AK and HI were allocated using 1996 NTI data. • AP-42 fuel loading and emission factors are used (see Chapter 13.1). • Emissions depend on a fuel loading factors for each fire which are average factors for nine geographical regions of the continental United States. • PM-2.5 is estimated by applying a size distribution factor, based on measured size distributions (assumes PM-2.5 is 0.9 times PM-10)
<p>Current Variables/Assumptions Used:</p> <ul style="list-style-type: none"> • An activity factor expressed as the sum of land acres burned at the fuel category level for the wildfires (<i>National Forest Service and U.S. Department of the Interior</i>). • A fuel loading factor expressed as the average fuel loading at the State level (<i>limited sampling in discreet areas applied to large regional areas</i>). • Emission factors for various pollutants, expressed as lb of pollutant per ton of fuel burned (<i>AP-42 and other specific projects</i>). <p>Uncertainties / Shortcomings of Current Methods:</p> <ul style="list-style-type: none"> • Information on the number of acres burned reported to federal agencies may not adequately represent all fires. Fires on privately owned lands may go unreported or underreported. • The use of regionally averaged fuel loading factors will introduce uncertainty. • Emissions from wildfire vary considerably depending on the type of fire. Different emissions levels are associated with burning that extends to the canopy, burning that only affects the understory, and burning in smoldering stages.

How can States, Locals, and Tribes improve upon this methodology?

- State or local estimates of acres burned and fuel loading. Establish data collection process, and obtain specific information on the total acres burned in each county in the state in each year, including acres burned on private land. [*applicable public lands management agency, i.e., Forest Service, National Park Service, private landowners, etc., aerial photography, satellites*]
- State or local estimates of the months when fires occur and the specific locations of these fires. [*applicable public lands management agency*]
- For most reliable information, states or groups of states should establish a working relationship with the state agencies and each of the Federal agencies responsible for monitoring wildfires. A significant amount of work is being done in the west to better estimate emissions from wildfires. (Western Regional Air Partnership, Fire Emissions Joint Forum)

Where can I find Additional Information and Guidance?

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AP-42 Section 13.1	http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s01.pdf
Area Source Emissions Model	http://www.epa.gov/ttn/chief/software/asem/index.html
County Level Emission Density Maps for Area Source	http://www.epa.gov/ttn/chief/eiip/pm25inventory/densitymaps.pdf

Categories	
NEI Methodology Description	ftp://ftp.epa.gov/EmisInventory/finalnei99ver2/criteria/ or http://www.epa.gov/ttn/chief/eidocs/sec7part1_wldfires_jan5.pdf
Satellite Remote Sensing Link	http://geomac.usgs.gov/
U.S. Forest Service	http://www.fs.fed.us/fire/