

A large, light teal graphic consisting of several overlapping, curved, parallel lines that sweep across the center of the slide, creating a sense of motion or a stylized 'V' shape.

2002 FIRE INVENTORY VISTAS States –

First Draft Oct 2003

National RPO meeting

Nov 5, 2003

2002 Fire Inventory

- Requested data spring 2003 from State agencies for state and private lands
- Requested data from Federal agencies for Federal lands
 - Forest Service
 - Fish and Wildlife Service
 - National Park Service
 - Bureau of Land Management
 - Bureau of Indian Affairs

State Supplied Fire Activity Data

| State | Agriculture | Prescribed | Silviculture | Land Clearing | Waste Burning | Wildfires |
|-------|-------------|------------|--------------|---------------|---------------|-----------|
| AL | ✓ | ✓ | | ✓ | | ✓ |
| FL | ✓ | ✓ | ✓ | ✓ | | |
| GA | ✓ | | ✓ | ✓ | | ✓ |
| KY | | | | | | ✓ |
| MS | | ✓ | | | | |
| NC | | | | | | ✓ |
| SC | ✓ | | | ✓ | ✓ | ✓ |
| TN | | | | | | ✓ |
| VA | | | | | | ✓ |
| WV | | | | | | ✓ |

Federal Agency Supplied Fire Activity Data

| Agency | Agriculture | Prescribed | Silviculture | Land Clearing | Waste Burning | Wildfires |
|--------|-------------|------------|--------------|---------------|---------------|-----------|
| USFS | | ✓ | | | | ✓ |
| FWS | | | | | | ✓ |
| NPS | | | | | | ✓ |
| BLM | | | | | | ✓ |
| BIA | | | | | | ✓ |

Fire Data Handling After Submittal

- Latitude/Longitude data added
 - For data with only State and County FIPS codes, county centroid value added to file
 - All Lat/Long data converted to decimal degrees
 - *Submittals included H:M:S, decimal degrees and Section, township, range*
 - *Section, township, range data not processed – too labor intensive*
 - States that submitted only Lat/Long data had county FIPS code added via GIS
 - *Fires that fell outside of the State, in the ocean, or in the wrong State were dropped – Less than 3% of total acreage in all cases*

Fire Data Handling After Submittal

- Fuel Loading assigned to each fire
 - Priority order for assigning fuel loading:
 - *State-supplied data – if provided always used*
 - *National Fire Danger Rating System (NFDRS) Model value assigned fuel loading*
 - *Values provided by Bruce Bayle, USFS*
 - *Compared to EPA report*
 - *Revised values chosen*
 - *State specific defaults calculated where no material burned type provided*
 - *Values assigned based on NFDRS code or material type or via AP-42 values for fires other than wildfires or prescribed burns*

Fire Data Handling After Submittal

- Emission Factor assignment
 - Emission factors assigned from either AP-42 or from EPA report
 - *"Data Needs and Availability for Wildland Fire Emission Inventories - Short-term Improvements to the Wildland Fire Component of the National Emissions Inventory" – Pace Report*
 - *Combined emission factors developed for some categories (e.g., State indicated that fire covered NFDRS fuel models D&E, averaged D&E emission factors)*

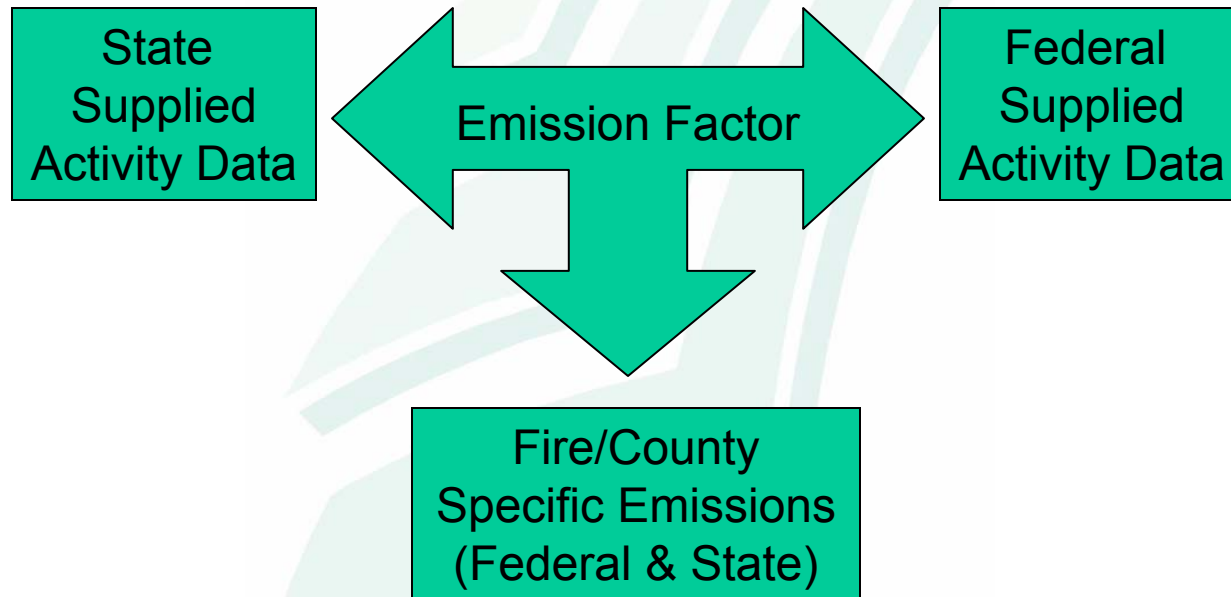
Fire Emissions Calculations

- Fire emissions calculated based on:
 - Emission Factors
 - Fuel Loadings
 - Acres burned
- Fire emissions calculated for each individual fire
 - Emissions calculated for all pollutants including NH₃, EC/OC and PM
 - PM – PRI and PM-FIL emissions assumed equal

Approach to Filling Fire Data Gaps

- Where State/Federal data not available, use 1999 NEI data
- 1999 NEI doesn't contain the geographic level of detail of State/Federal supplied data
 - Estimates at county level and annual summary
- For modeling purposes
 - Fires located at county centroid
 - Fires allocated seasonally using SMOKE default factors

Fires Approach (prescribed and wildfires)

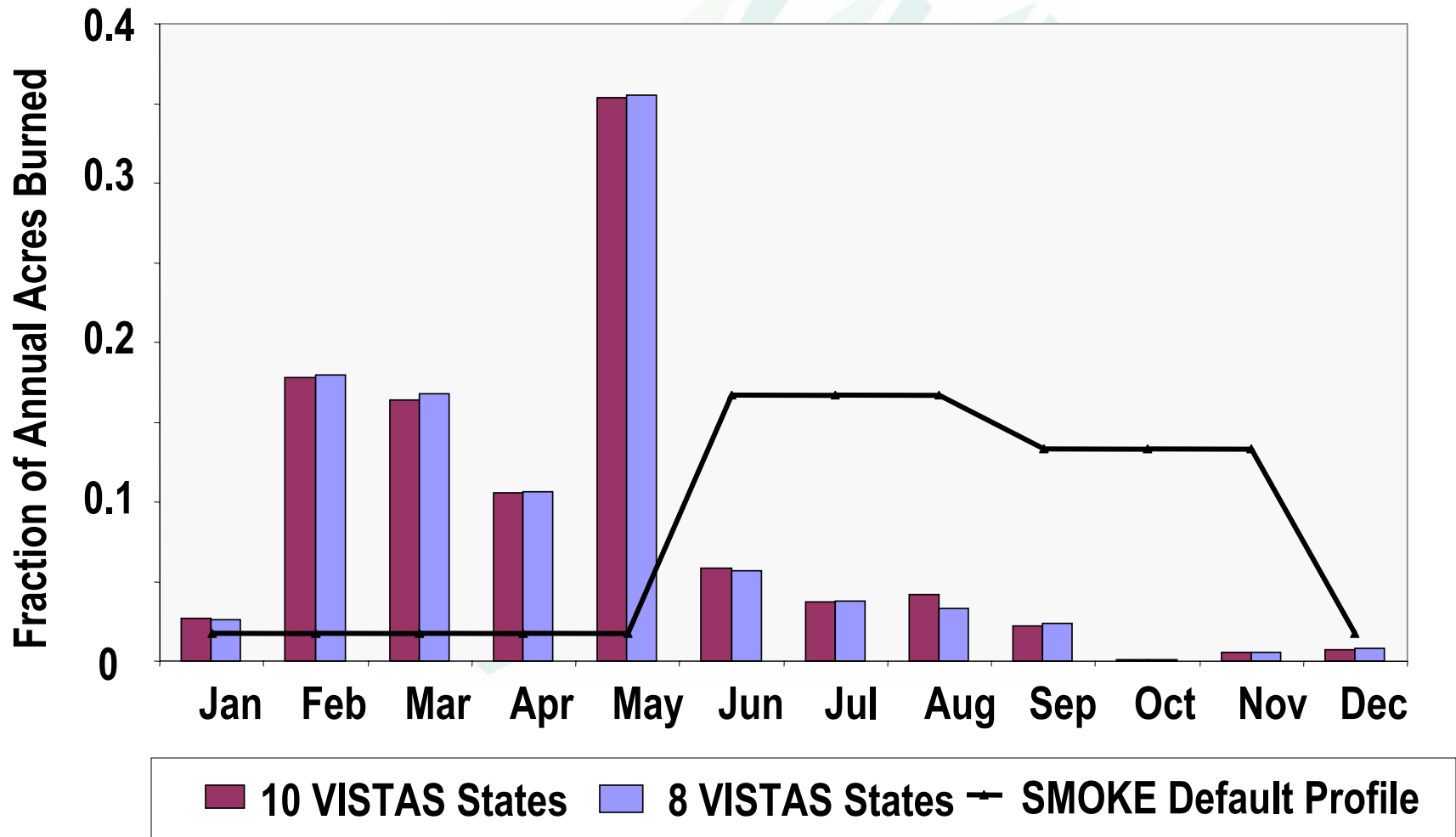


This general procedure applies to both prescribed and wildfires.

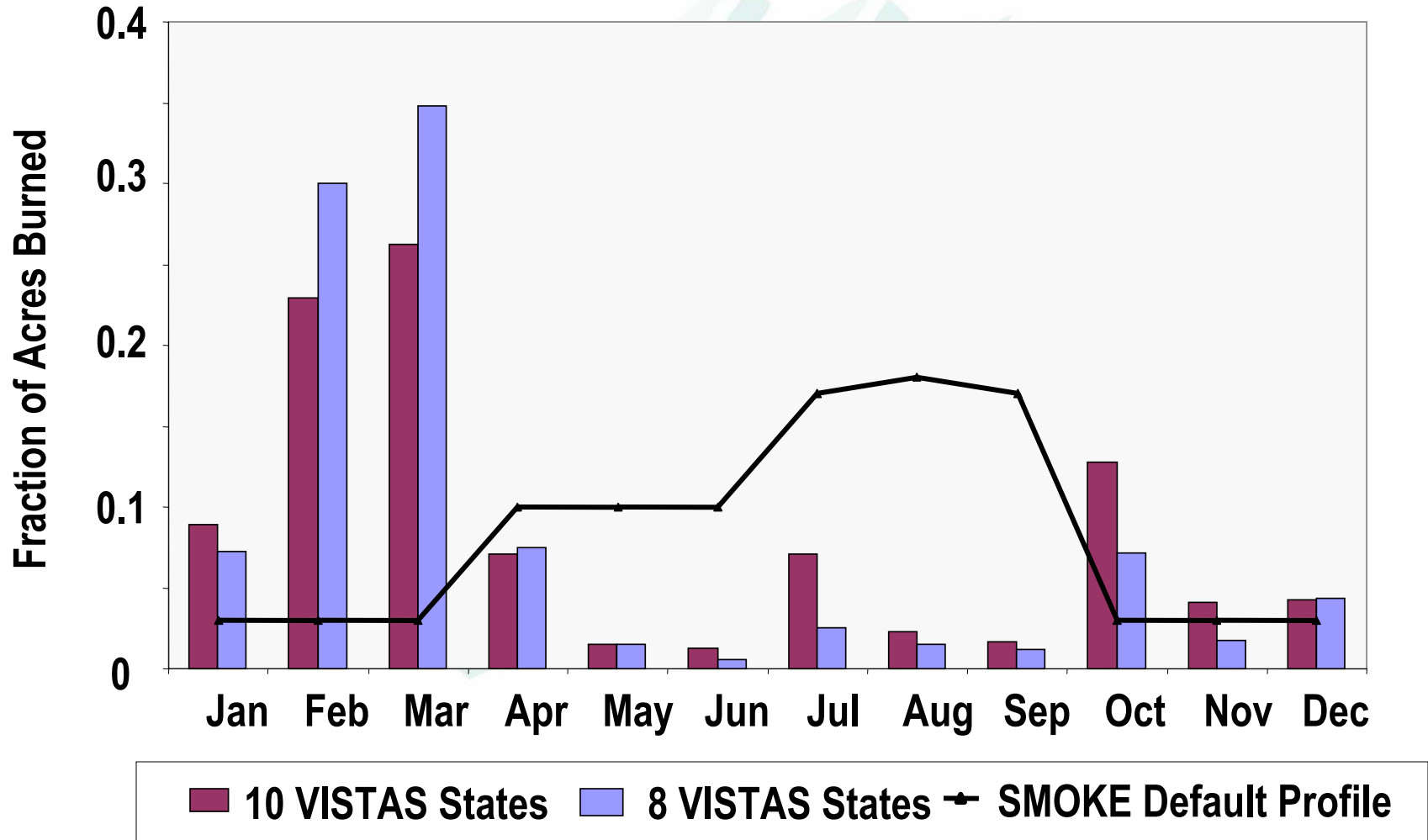
Top 10 2002 Wildfires in 10 VISTAS States

| State | Date | Acres |
|----------------|-----------|---------|
| Georgia | 5/1/2002 | 124,104 |
| Georgia | 5/2/2002 | 7,900 |
| West Virginia | 3/21/2002 | 5,816 |
| Georgia | 3/20/2002 | 5,580 |
| Florida | 8/3/2002 | 4,200 |
| Virginia | 2/26/2002 | 4,150 |
| Florida | 5/11/2002 | 4,000 |
| Virginia | 6/5/2002 | 3,783 |
| Kentucky | 4/6/2002 | 2,292 |
| North Carolina | 4/6/2002 | 2,195 |

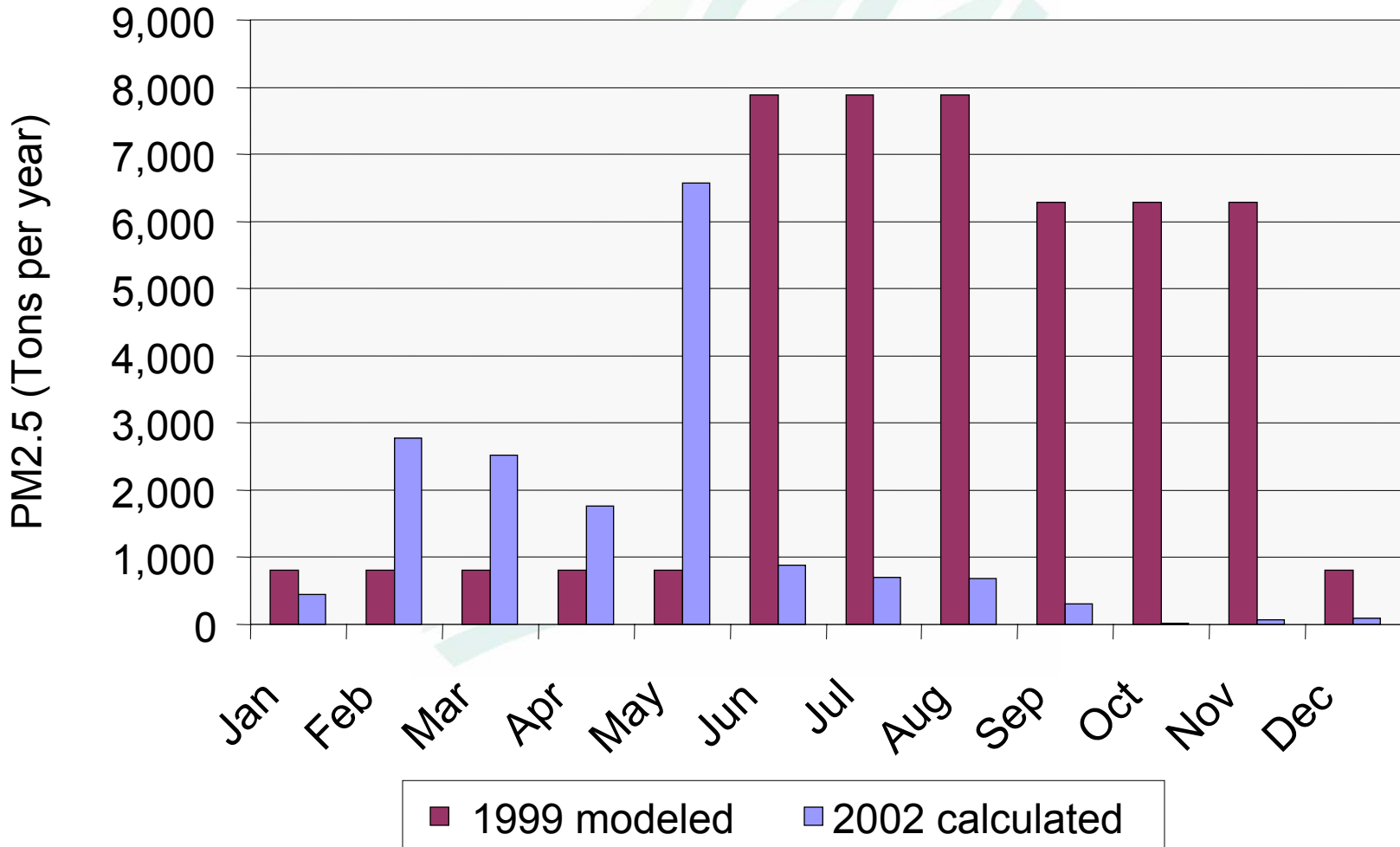
Monthly Fraction of Annual Wildfire Acres Burned - 2002 Actual and SMOKE Default Profile



Monthly Fraction of Annual Prescribed Acres Burned - 2002 Actual and SMOKE Default Profile



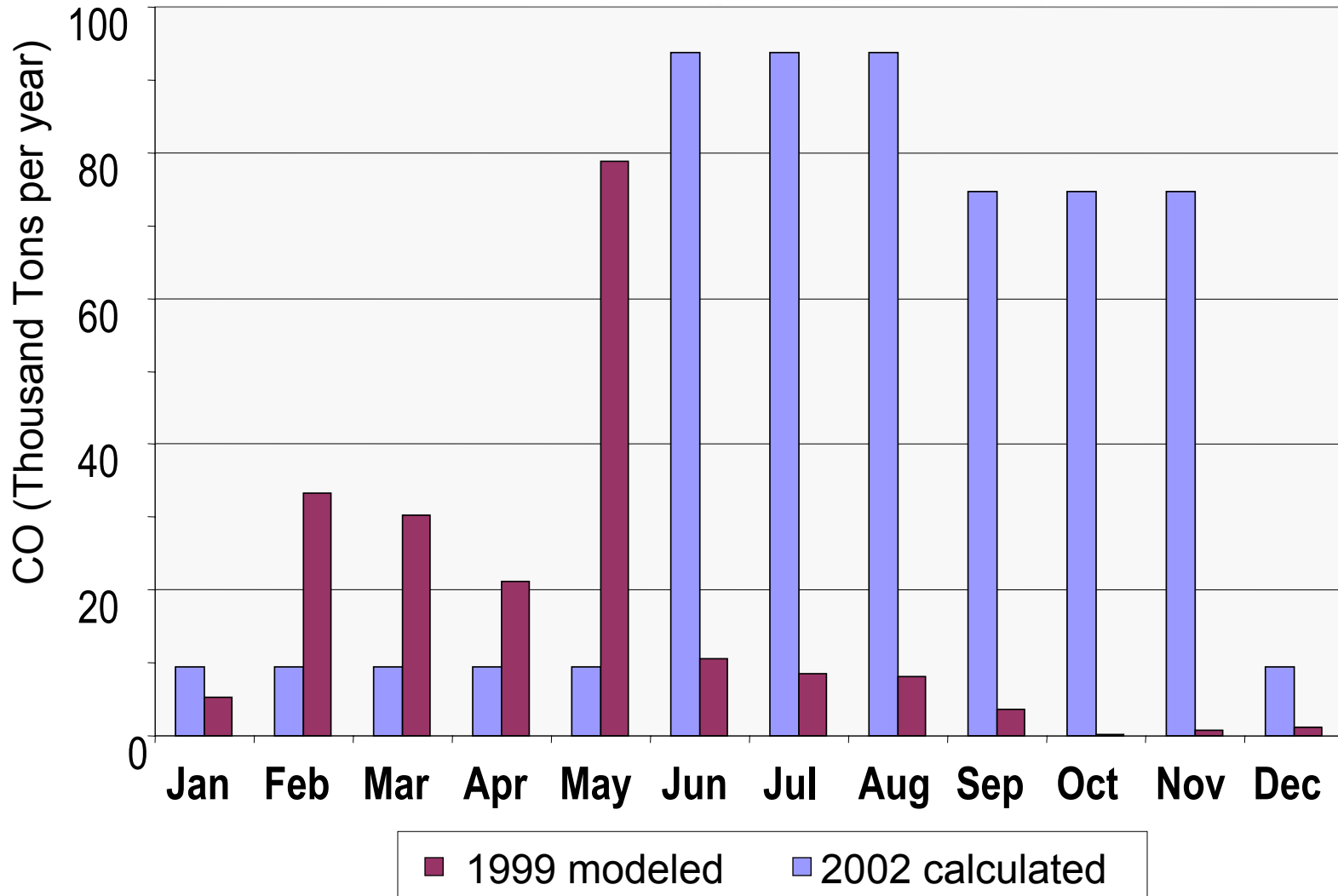
Wildfire PM2.5 Emissions for 8 VISTAS States* 1999 Modeled and 2002 Calculated



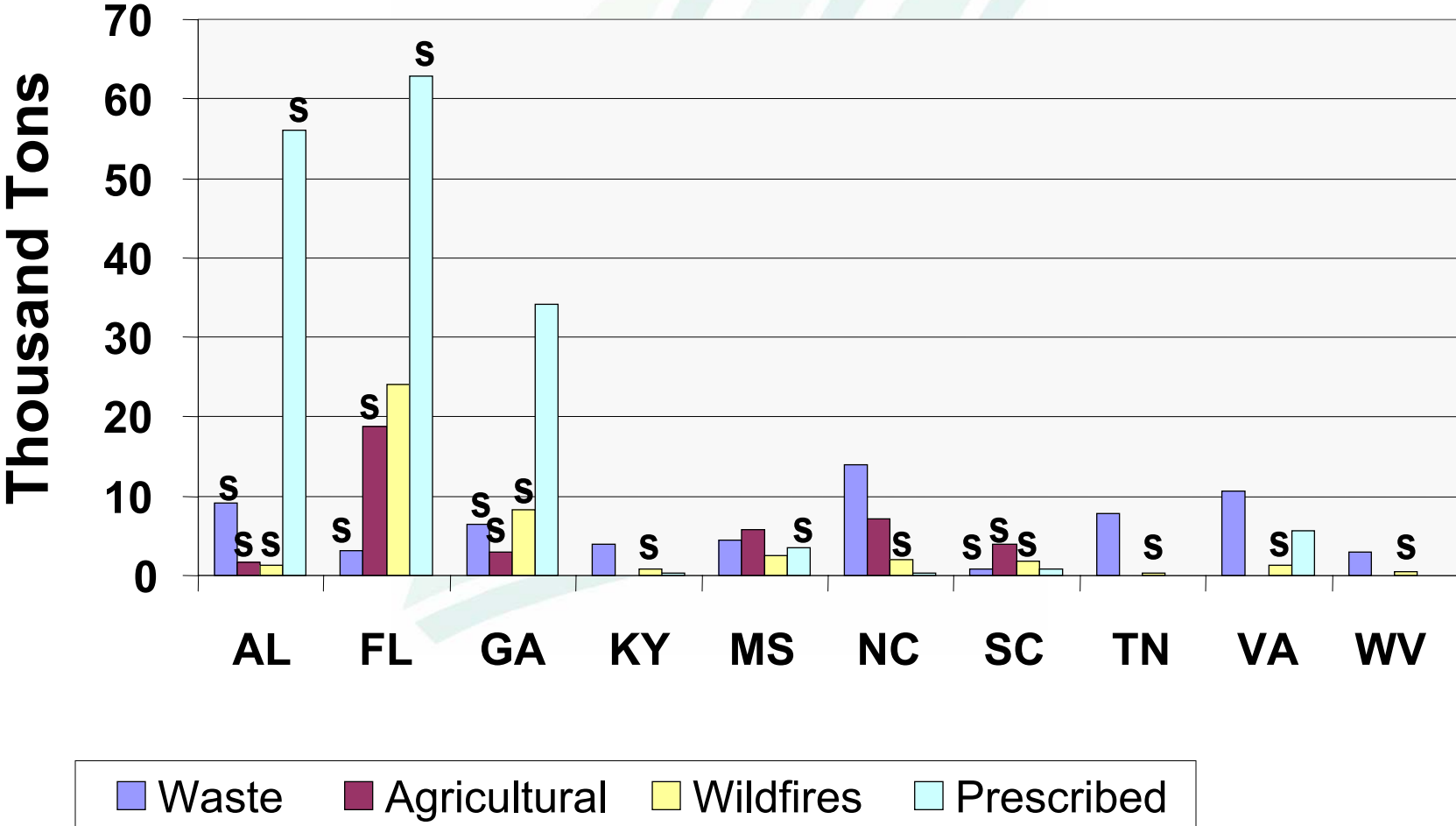
*AL, GA, KY, NC, SC, TN, VA, WV; FL and MS did not submit wildfire data

Wildfire CO Emissions for 8 VISTAS States

1999 Modeled vs 2002 Calculated Values



2002 VISTAS PM2.5 Emissions from Fire Sources

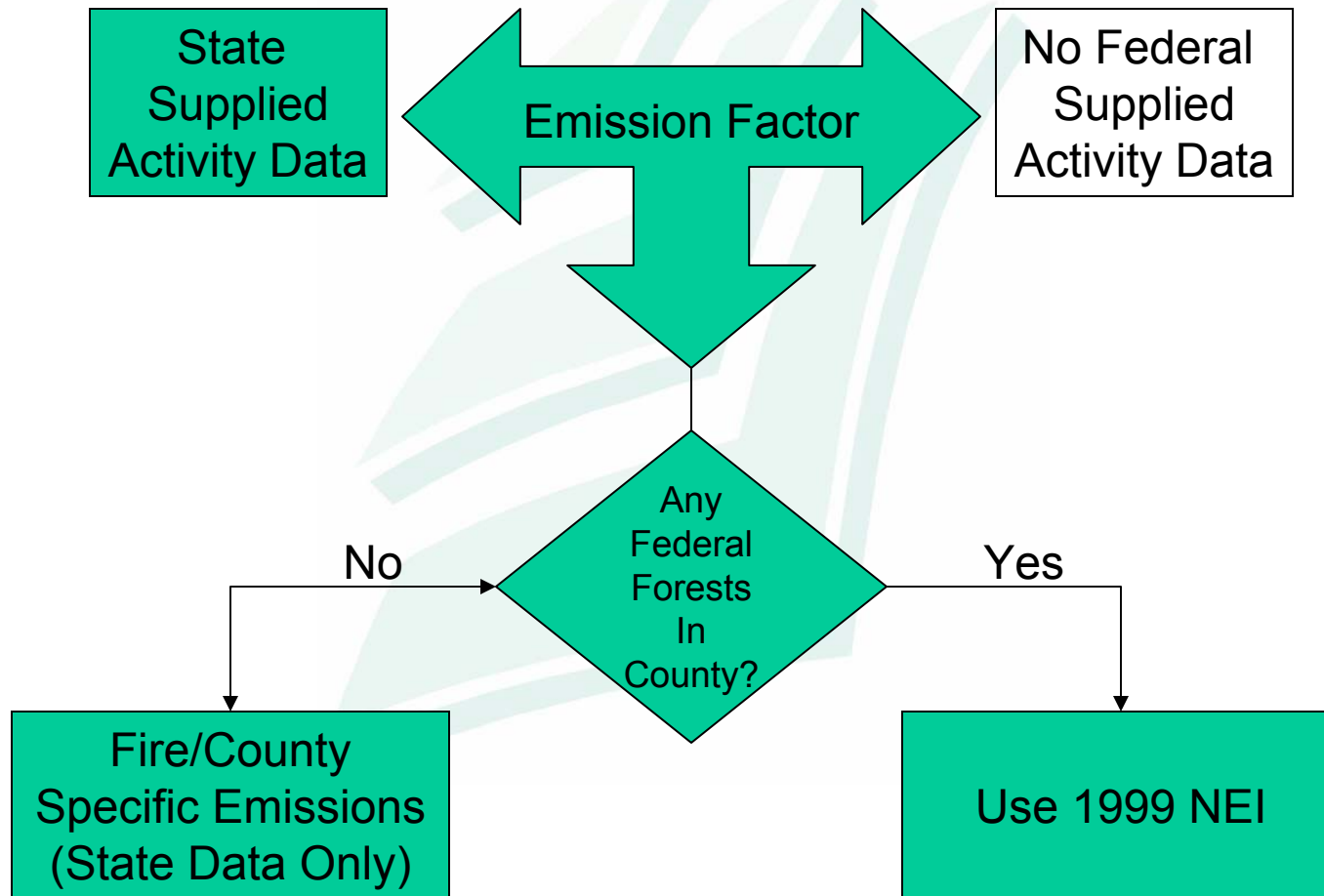


- 
- Address fire questions to Bill Barnard
 - (352) 333-6617 or WRBarnard@mactec.com

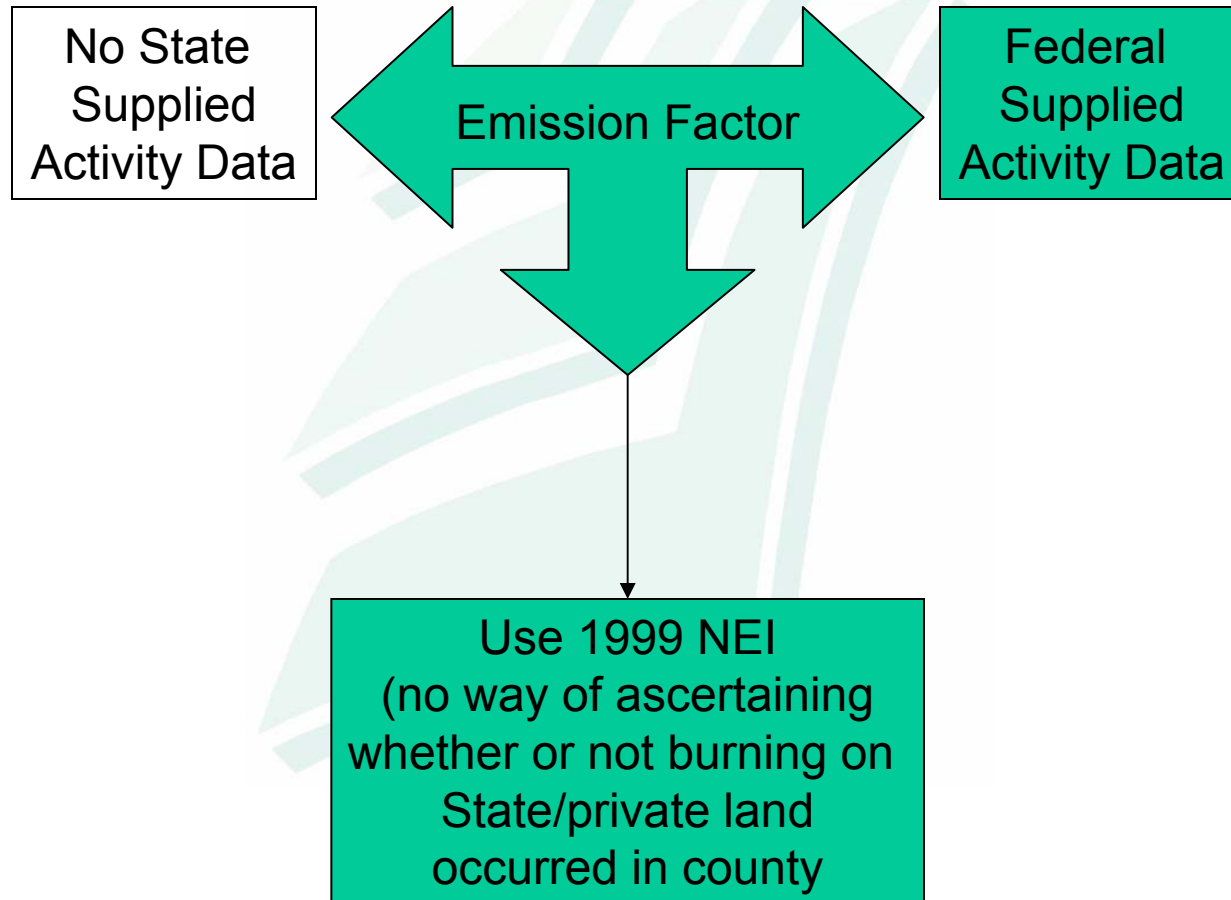
Fire Files Documentation

- Logical fields used in database to mark:
 - Whether or not a default fuel loading was used
 - Whether or not the Lat/Long is county centroid
 - Whether or not the material burned is a default value
- Also included fields to mark each record to show:
 - What type agency submitted the activity data
 - What the data source was for the fuel loading
 - Whether or not the submittal was from a Federal or State Agency

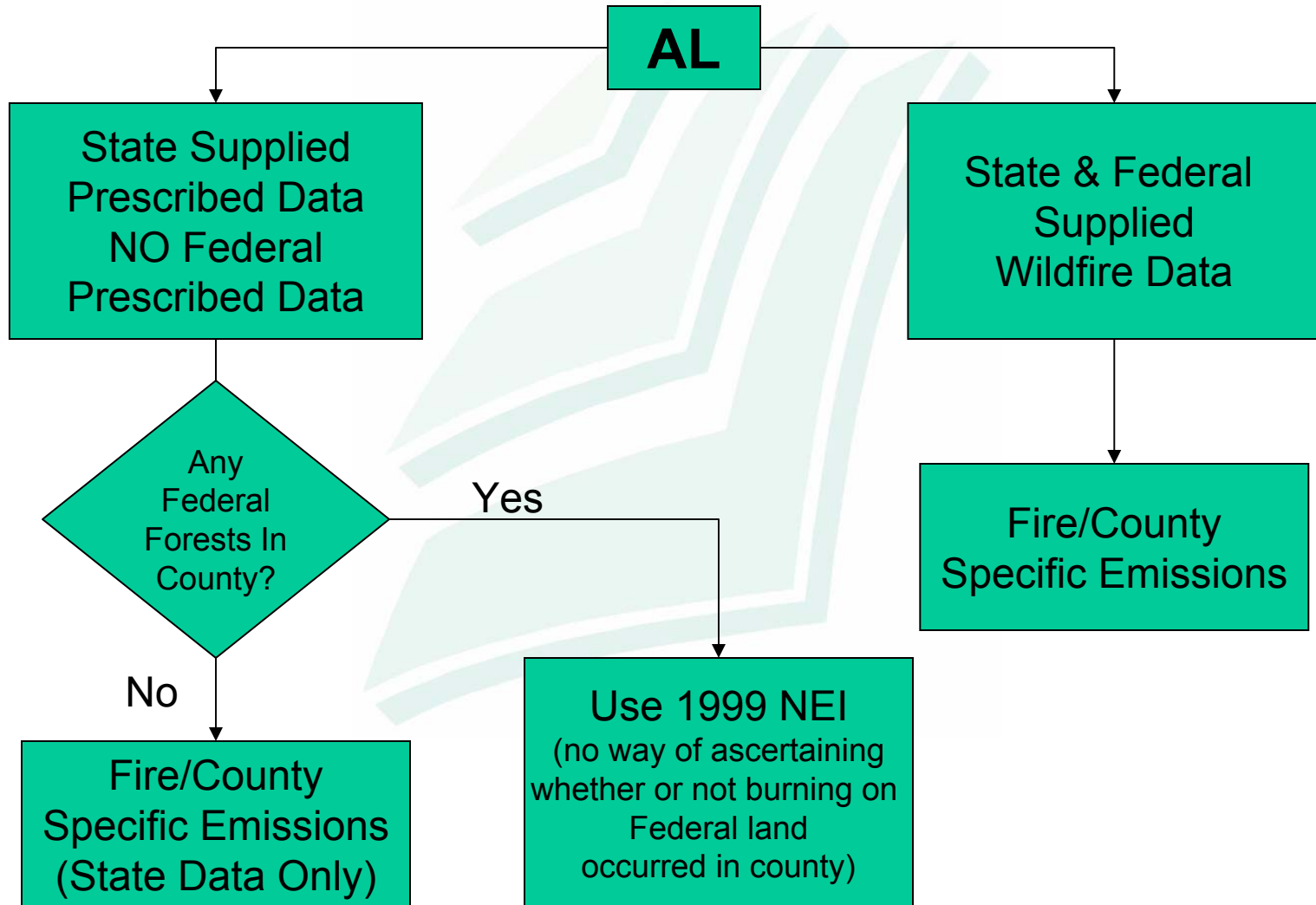
Approach if Federal Data Missing



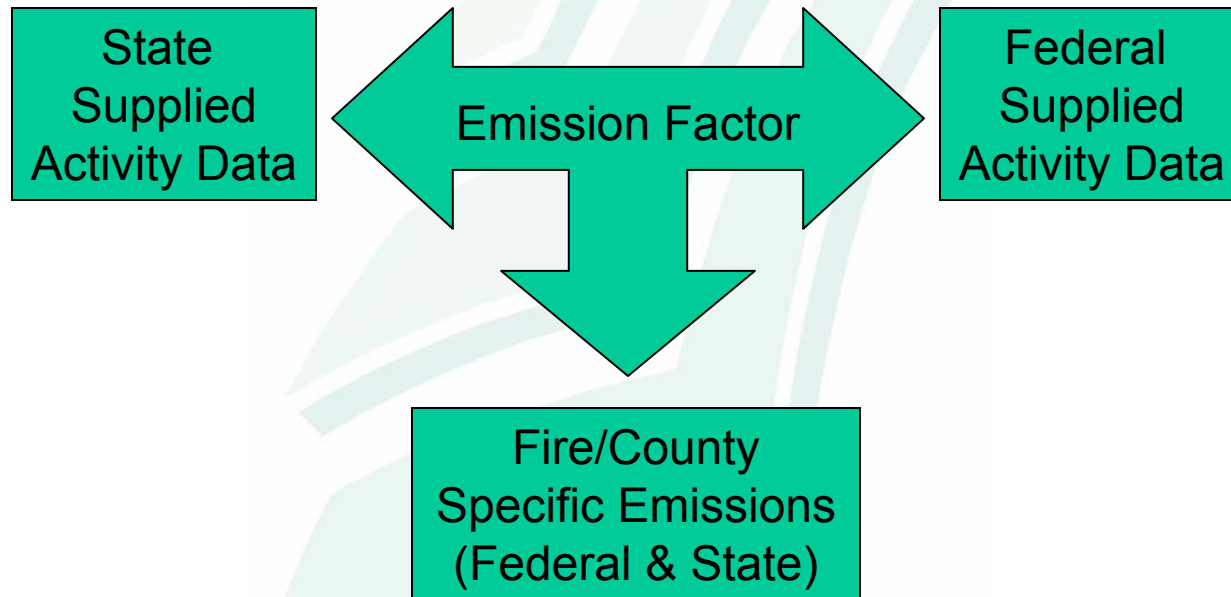
Approach if State Data Missing



Fire Example (with current data reporting)

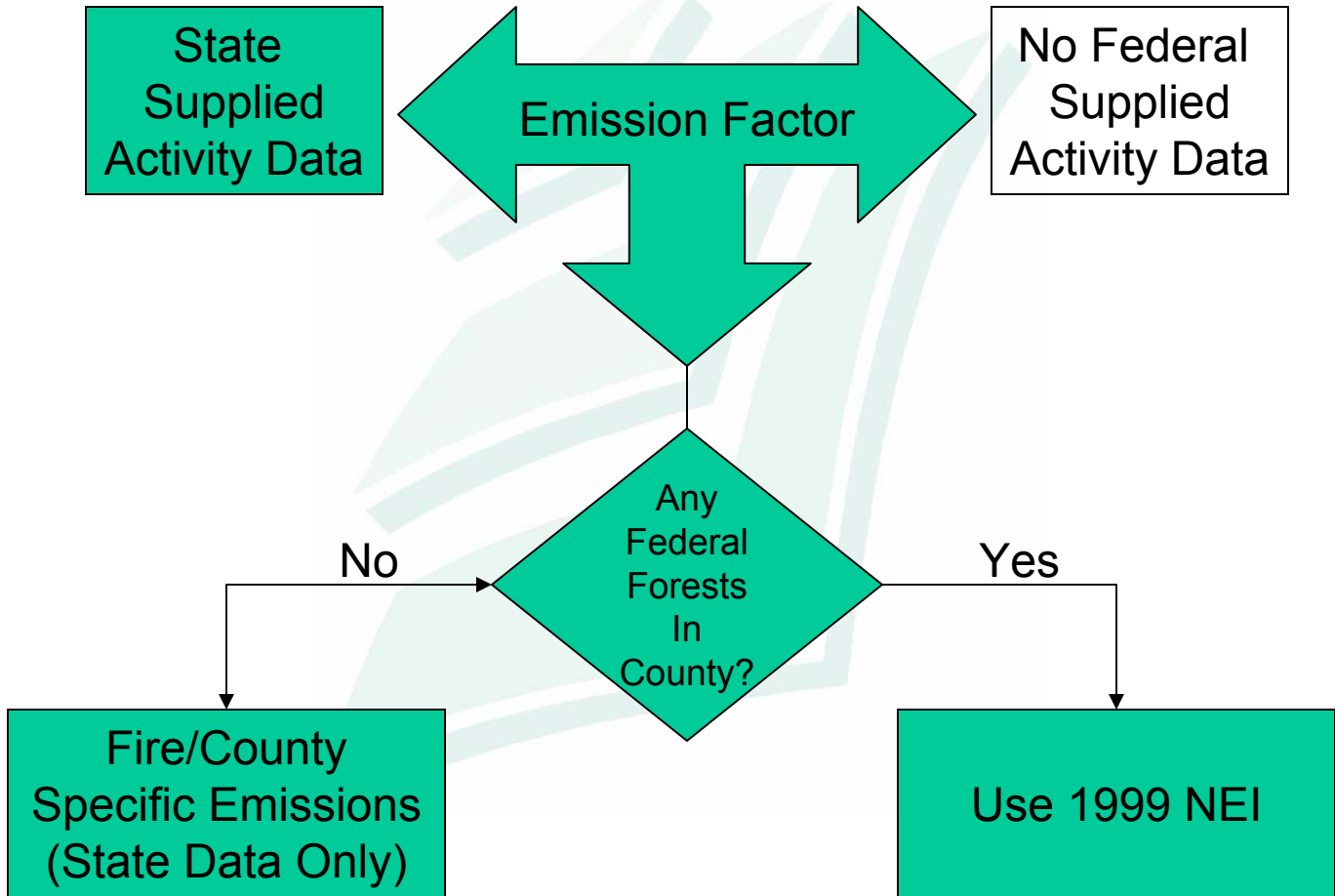


Fires Approach (prescribed and wildfires)

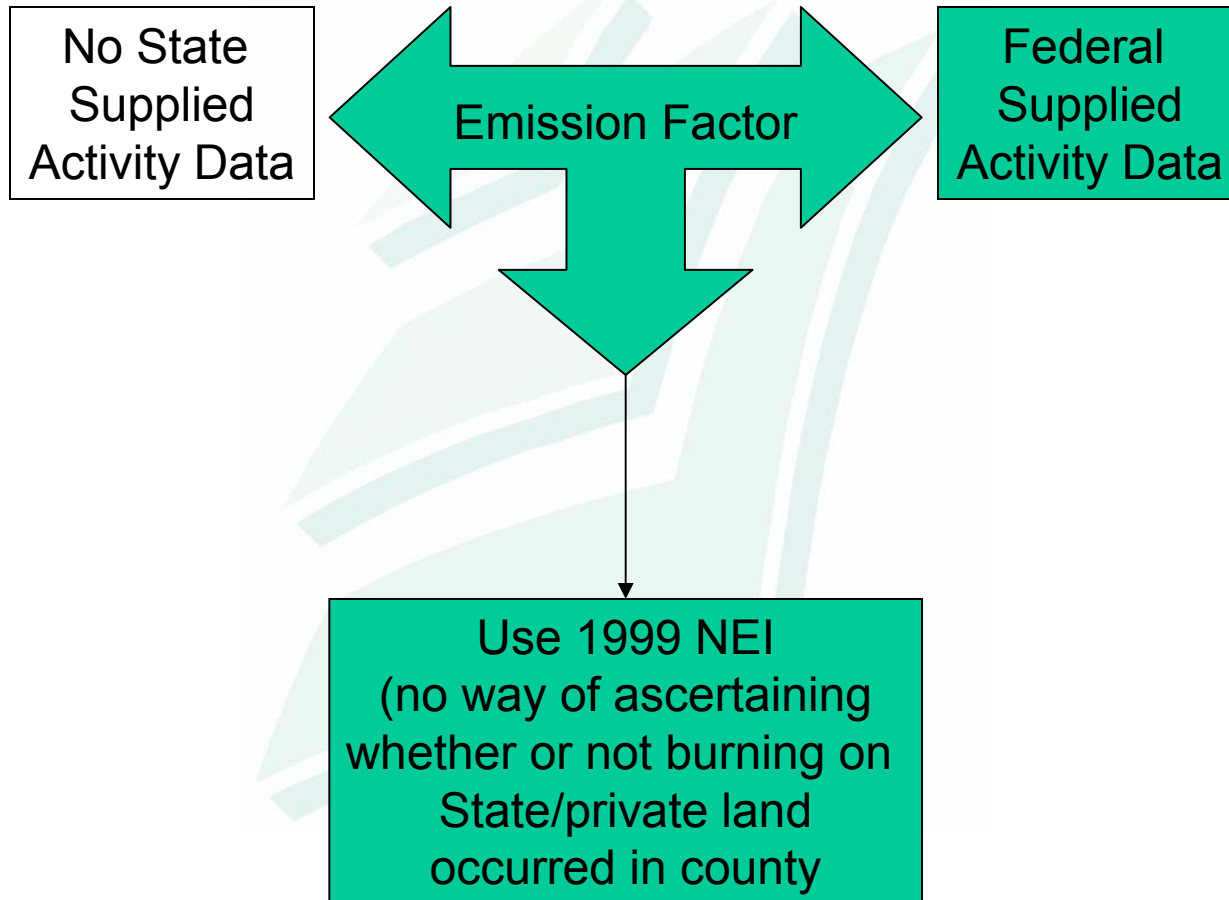


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Approach if Federal Data Missing



Approach if State Data Missing



Fire Example (with current data reporting)

