



# 2014 NEI for Wildland Fire



**STi**

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# Contacts



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All of these slides will be available at the project site:

<http://airfire.org/emissions/2014nei>

# Agenda

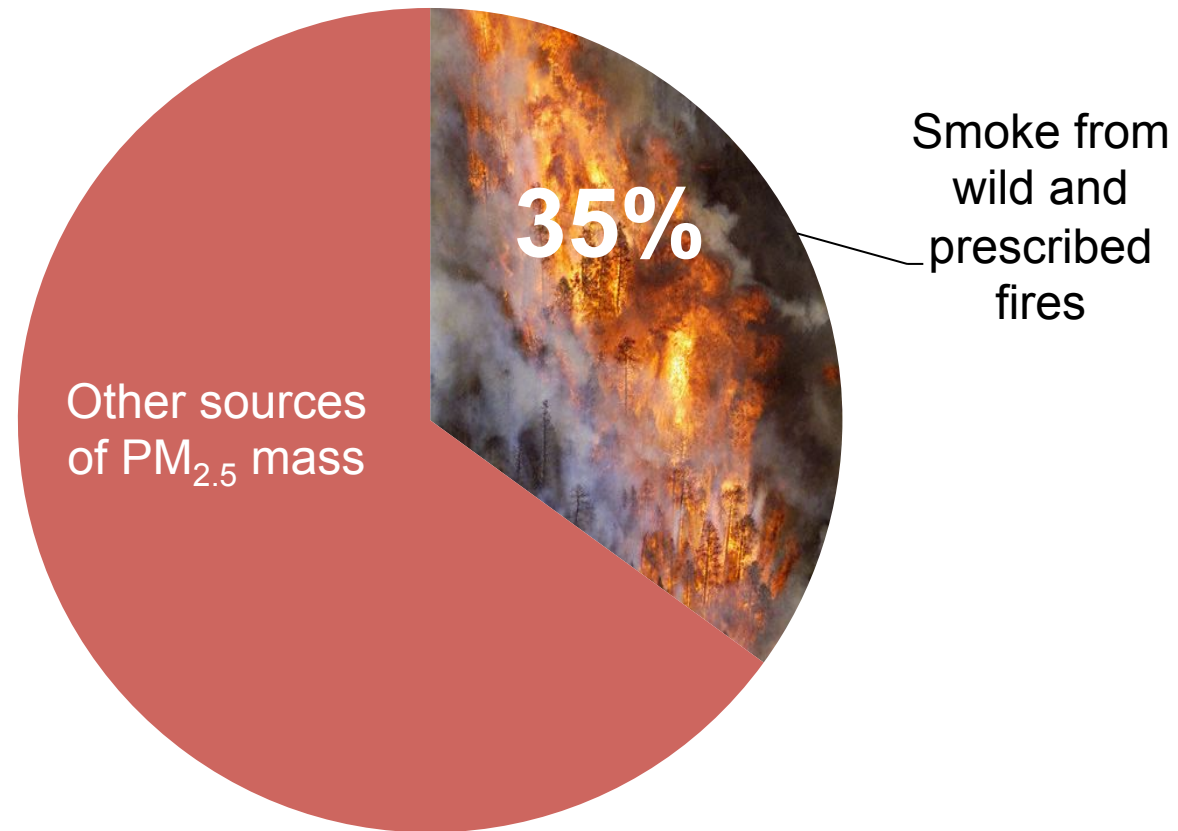
- EPA Introduction (Tesh Rao, EPA)
- Room Introductions
  
- Background
  
- What data we are looking for
- How to submit your data
- What to expect once the data is submitted
  
- How the processing works
  
- Throughout: Q&A (please interrupt!)

# Room Introductions

- Name
- Affiliation
- Were you involved in the 2011 effort?
- What are you most hoping to learn?  
(Any specific questions?)

# The fire inventory matters

## 2011 National Emissions Inventory

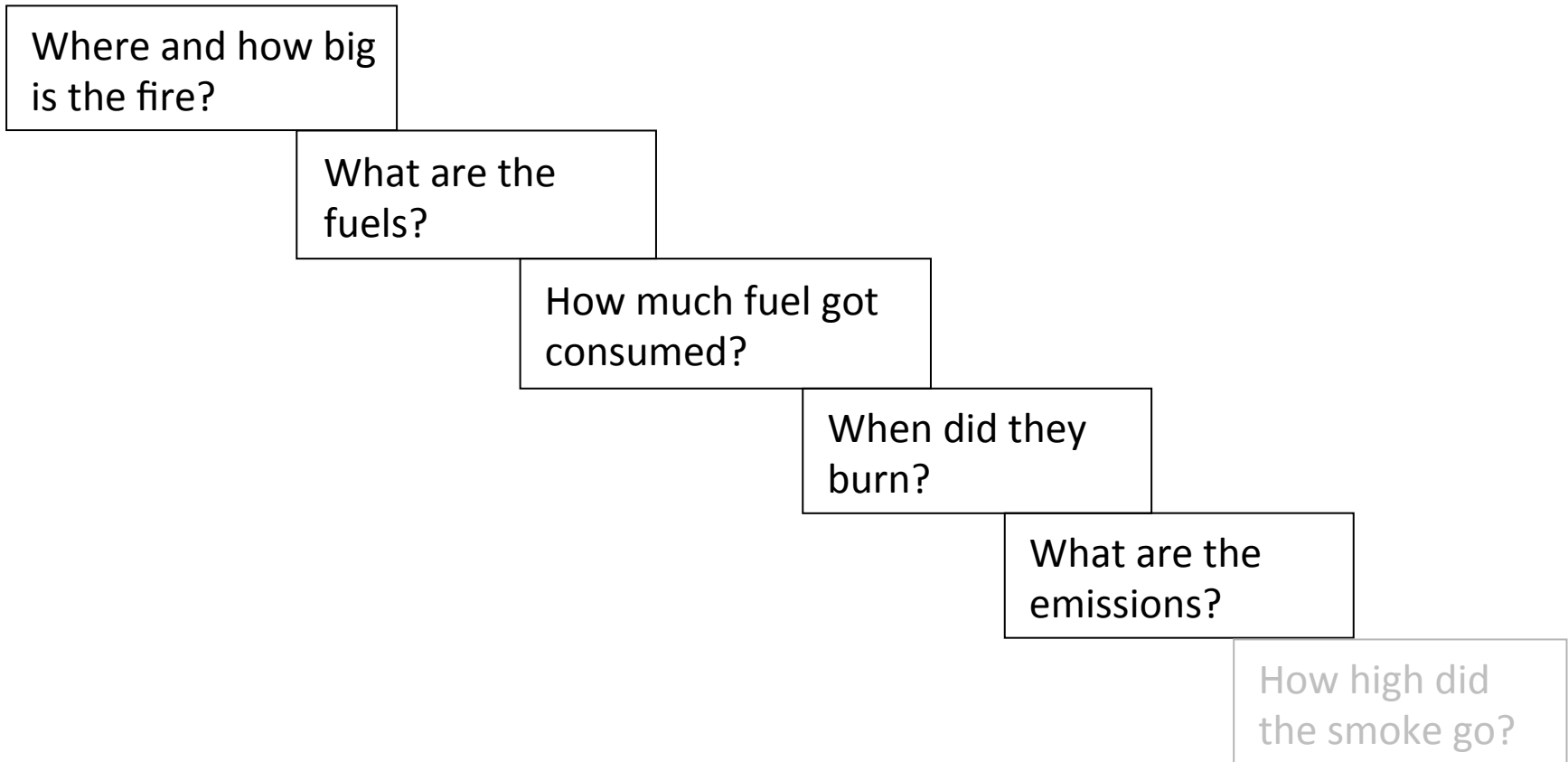


# Emissions Inventory Needs

While needs vary, typically we need:

- Model-ready wildland fire emissions
- Speciated (PM, C, VOCs, NO<sub>x</sub>, BC, etc...)
- Time resolved (hourly)
- Vertically distributed (plume height)
- Ideally in the right format

# A Logical Progression



# Modeling Steps

Gather fire  
info

Merge fire  
info

Fuels

Total  
Consumption

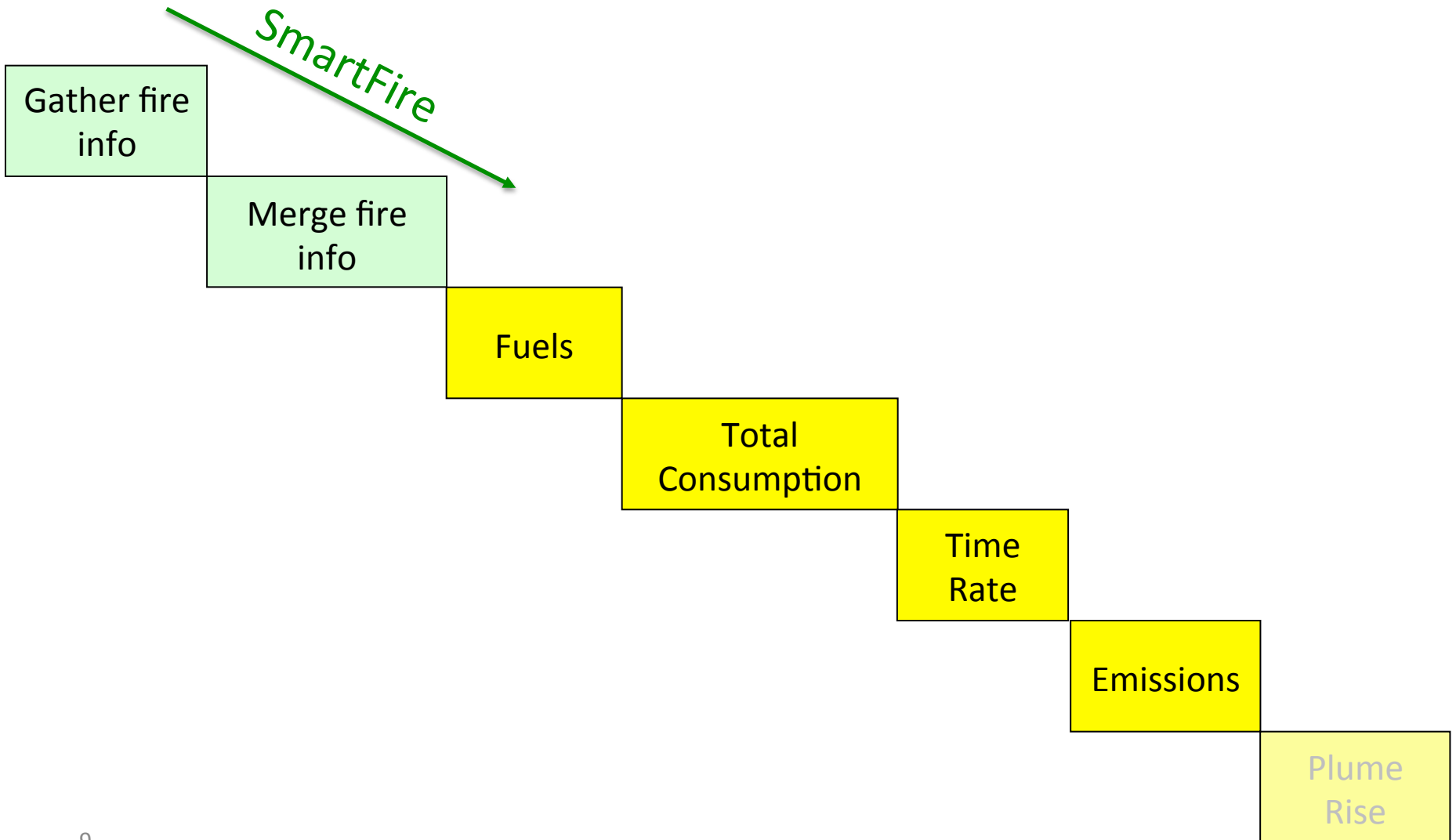
Time  
Rate

Emissions

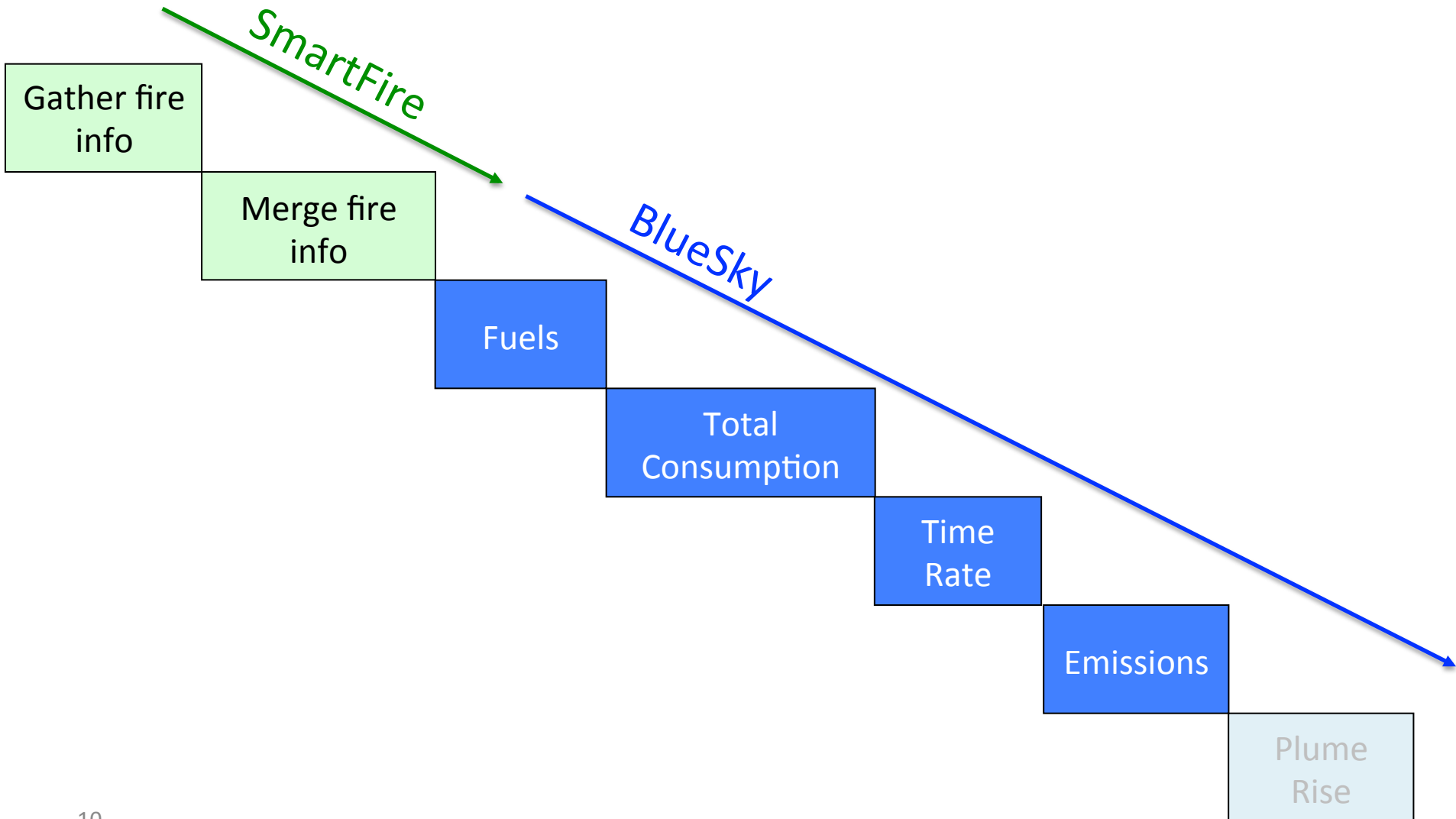
Plume  
Rise



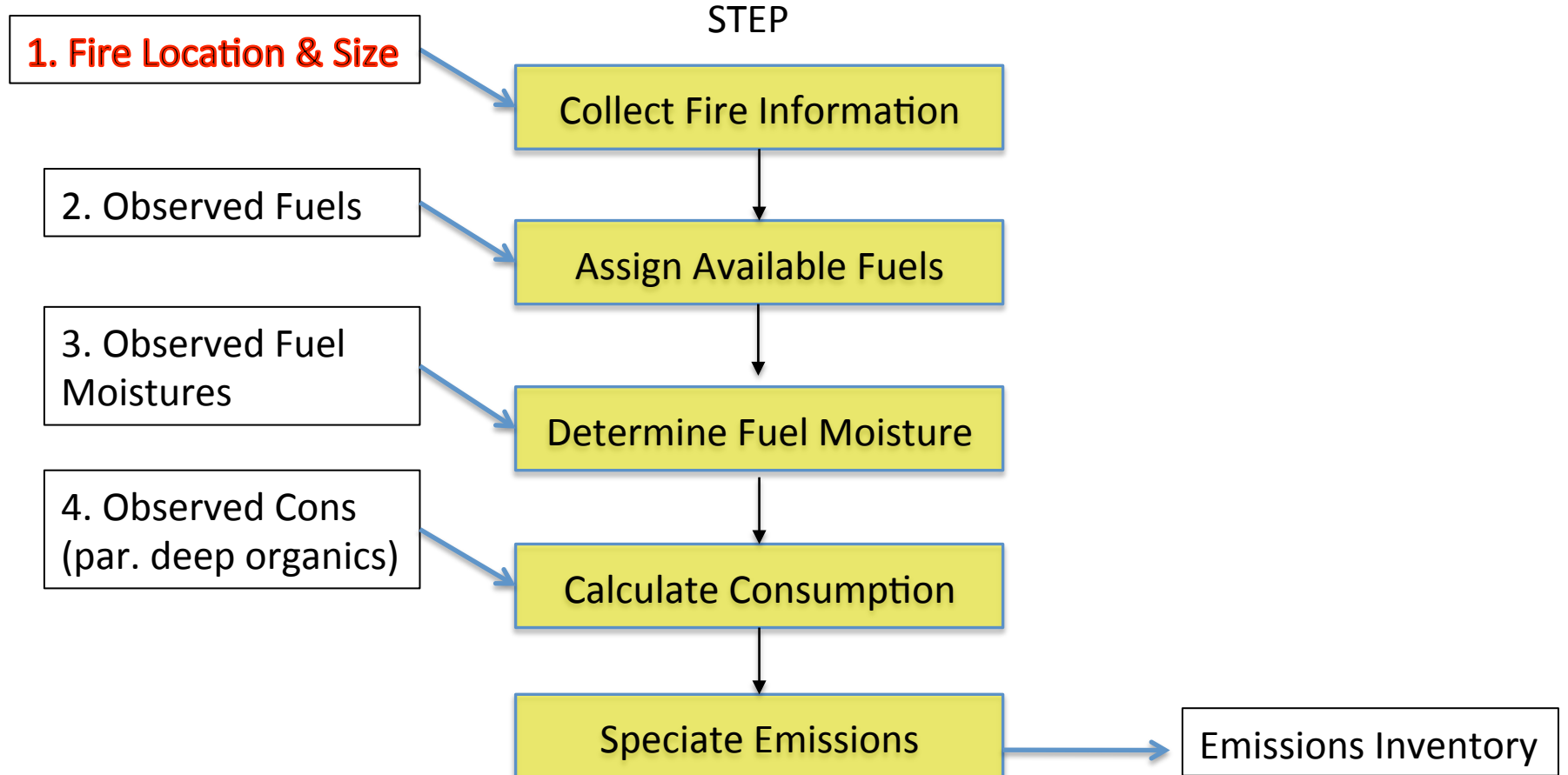
# Modeling Steps



# Modeling Steps



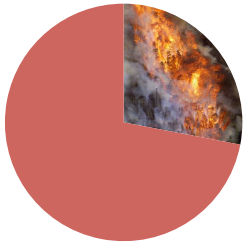
# Fires to Emissions



# Background: History

- Past wildland fire NEIs focused on national level datasets
- In 2011, a major effort was made to include state / regional / local data
- This can be objectively shown to have made a huge improvement in the inventory
- For 2014, we are trying to bring in even more state / regional / local data

# Goals for this workshop



- Explain the 2014 NEI for wildland fire effort
- Clarify what data is useful, and how, where, and when it can be submitted
- Clarify what to expect after the data is submit
- Detail the process used to calculate emissions from the data
- Answer any questions

# Caveat: A fluid process

- The EPA and USFS are cooperating to fund the 2014 NEI for wildland fire over the FY15 and FY16 budget years
- Thanks to how we are allocated funds, exactly what will be done for the 2014 NEI-WF will remain somewhat fluid as we go
- Minimum process vs. more ideal process
- Wish list

# A Call for Fire Data

- More regional / local data = better inventory
- In 2011, we assembled 44 different databases
- For 2014, we'd like even more
  
- Where possible, we'd like to use the submitted data alone
- But where data is incomplete, we will combine with satellite data to fill out inventory

# Data Coverage

We are looking for fire data covering:

- All types of fire  
(wildfires, prescribed burning, piles...)
- All land ownerships  
(federal, state, local, tribal, private, etc...)

All data helps even if it is not *complete* and/or does not have full *coverage*



# Minimum Data

Hopefully all data comes with at least:

- Fire Size  
(e.g. in acres or number of piles + size)
- Fire Location  
(latitude / longitude okay, prefer polygon)
- Fire Date(s)  
(at least a start date)
- Fire Type  
(WF or RX fire)
- Name or Fire ID  
(can be any text)

# How to submit

- As a comma-separated-value file (shapefiles for polygon data).
- Email the data
  - To: [Fires2014@epa.gov](mailto:Fires2014@epa.gov)
  - CC: [sraffuse@sonomatech.com](mailto:sraffuse@sonomatech.com),  
[larkin@fs.fed.us](mailto:larkin@fs.fed.us)

# 1) Example Input Data: Simple

	A	B	C	D	E	F	G
1	start_date	end_date	name	latitude	longitude	type	area
2	07/15/06	07/16/06	Station	48.664	-120.022	WF	590.8
3	07/06/06	07/06/06	Rx522	37.79518	-119.865	RX	12
4	07/06/06	07/06/06	Rx445	34.505	-110.246	RX	45
5							

Excel format (or CSV)  
One line per fire

- Start date: when burning began
- End date: when burning ended
- Name: can be any text
- Latitude/longitude: we'll also accept a Shapefile
- Type: WF or RX
- Area: Final size of fire in acres

## 2) Example Input Data: Daily

	A	B	C	D	E	F
1	date	name	latitude	longitude	type	area
2	07/15/06	Station	48.664	-120.022	WF	500.5
3	07/16/06	Station	48.664	-120.022	WF	90.3
4	07/06/06	Rx522	37.79518	-119.86505	RX	12
5	07/06/06	Rx445	34.505	-110.246	RX	45

- Excel format (or csv)
- One line per date fire was active
- Area: area burned on that day only

### 3) Example Input: Fancier

- If you have additional fields, we will take those as well, but they are optional
  - Fuel loading
  - Fuel moisture
  - Consumption (particularly deep organic consumption)

# Polygon Data vs. Lat/Lon Location

- We are making a new distinction between polygon location data and lat/lon point location data
- We greatly prefer polygon data if possible
- Why?
  - Polygon data appears to be much more reliable
  - Polygon data allows for a more exact processing pathway

# Database Coverage Questionnaire

2014 NEI Wildland Fire Inventory Database Questionnaire					
1					
2	For each row, please indicate whether that fire type, land type, or land ownership is included in the database ALWAYS, SOMETIMES, or NEVER. For SOMETIMES, please explain in the comments (briefly).				
3	Please indicate the expected coverage completeness - the % of all fires of this type/from these actors/in these land ownerships that should be in the database that actually are.				
4					
5	<b>FIRE TYPES AND SIZES OF FIRES INCLUDED</b>				
6	Type:	Included:	Expected completeness	Min size (acres or piles) for inclusion if any:	Comments if any:
7	F1 WILDFIRES				
8	F2 PRESCRIBED BURNS (BROADCAST BURNS)				
9	F3 PRESCRIBED BURNS (PILE BURNS)				
10	F4 RANGELAND BURNING				
11	F5 AGRICULTURAL BURNING				
12					
13	<b>PRIMARY AGENCIES OR ACTORS INCLUDED</b>				
14	Type:	Included:	Expected completeness	Comments if any:	
15	A1 State Forestry Agencies				
16	A2 State Department of Transportation				
17	A3 State Wildland Firefighting				
18	A4 State Agencies (all other)				
19	A5 County / Local Governments				
20	A6 Tribal Governments				
21	A7 Military				
22	A8 Federal (non-Military)				
23	A9 Private Landowners (Forestry Companies)				
24	A10 Private Landowners (All Others)				
25	A11 Other. Specify in comments as needed.				
26					
27	<b>LAND OWNERSHIPS INCLUDED</b>				
28	Ownership:	Included:	Expected completeness	Comments if any:	
29	L1 State Lands				
30	L2 County / Local Lands				
31	L3 Tribal Lands				
32	L4 Military Bases				
33	L5 Federal Lands (non-military)				
34	L6 Private Lands (Forestry Companies)				
35	L7 Private Lands (All Others)				
36	L8 Other. Specify in comments as needed.				
37					

# What to Expect Once the Data Is Submitted

- Likely a delay before we can start looking at your data (bureaucracy)
- We will examine for qa/qc
- If there are questions we will contact you
- We will process the data into emissions
- You will have a chance to review the draft emissions
  
- Ideally: more communication, interaction



# Emissions Results

Returned to you in 3 ways:

- 2 Comma Separated Value files:
  - Summary Fire Emissions  
(summary totals by fire)
  - Daily Fire Emissions  
(daily emissions from each fire)
- Google Earth KMZ map

Report issues:

- Using web link from Google Earth
- Using designated columns in CSV file