

Fuel Consumption and Fire Emissions

Track 2, Session B3

May 5, 0900-1215

Roger Ottmar and Don McKenzie

Facilitator: Bob Mutch

Charge

- **To develop a vision of how best to estimate fuel consumption and emissions production from wildland fires**
- **List the key steps we can use today and in the future to estimate fuel consumption and emissions production for wildland fire**

Fuel Consumption and Fire Emissions

May 5, Track 2, Session B3

0900-1215 Facilitator—Bob Mutch

- **Ground rules**
- **Presentations:**
 - Consume 3.0 (Ottmar)
 - FOFEM (Reinhardt)
 - FEPS (Sandberg)
- **Discussion:**
 - What do managers currently use?
 - What can we use today and in the futures to estimate fuel consumption and emissions?
 - What level of accuracy is needed?
 - What is lacking?
- **List key steps we can use today and in the future to estimate fuel consumption and emissions in order to track emissions from wildland fires.**
- **Wrap-up**

In achieving desired outcome, consider:

- **Level of accuracy**
- **Current gaps in models**
- **Fuel consumption defaults**
- **Short term solutions**
- **Longer term solutions**
- **Short term solutions**
- **Site specific and regional**
- **Prescribed fire/wildfire**

Comments

- What is currently used by RPO's (regional scale) and individual States (site specific)?
 - Use FOFEM and Consume
 - Use NFDRS fuels maps and FOFEM with consumption adjustments
 - Use 13 fire behavior fuel models, Consume 2.1, MM5/HYSPLIT
- Models need to be flexible
 - Batch mode
 - Update EF
 - Equations available
- Compare Consume and FOFEM (both have favorable points)
- Refine models based on monitoring
- Regional scale has less reliable inputs available and thus less precise estimates of consumption and emissions than site specific scales

Key steps and elements we can use today for determining fuel consumption and emissions for tracking emissions from wildland fires

- **Short term site specific (individual states)**
 - Fire location, area burned (track 1) (black acres)
 - FCCS 1.0/LANDFIRE protocols to develop site specific fuelbed map and local inventory (fuel characteristics)
 - Consume 2.1, FOFEM (consumption/emissions)
- **Short term regional (RPO's)**
 - Fire location, area burned (track 1) (black acres)
 - FCCS 1.0/LANDFIRE regional fuelbed map, NFDRS (fuel characteristics)
 - Consume 2.1, FOFEM (consumption and emissions)

Key steps (continued)

- **Long term site specific (individual states)**
 - Fire location, area burned (track 1) (black acres)
 - FCCS 2.0/LANDFIRE protocols to develop fuelbed map and local inventories (fuel characteristics)
 - Consume 3.0, FOFEM 6.0 (consumption/emissions)
- **Long term regional (RPO's)**
 - Fire location, area burned (track 1) (black acres)
 - FCCS 2.0/LANDFIRE fuelbed map (fuel characteristics)
 - Consume 3.0, FOFEM 6.0 (consumption/emissions)



The End