



Residential Wood Combustion Tool

Demonstration for
EPA's Emissions
Inventory Conference
April 13, 2015



Contents



- Source Categories
- Calculation Methodology Overview
- Appliance Fractions
- Burn Rates
- Density of Firewood
- Tool Demonstration

Source Categories



| SCC | Description |
|------------|------------------------------------------------------------|
| 2104008100 | Fireplace: general |
| 2104008210 | Woodstove: fireplace inserts; non-EPA certified |
| 2104008220 | Woodstove: fireplace inserts; EPA certified; non-catalytic |
| 2104008230 | Woodstove: fireplace inserts; EPA certified; catalytic |
| 2104008310 | Woodstove: freestanding, non-EPA certified |
| 2104008320 | Woodstove: freestanding, EPA certified, non-catalytic |
| 2104008330 | Woodstove: freestanding, EPA certified, catalytic |
| 2104008400 | Woodstove: pellet-fired, general |
| 2104008500 | Furnace: Indoor, general |
| 2104008610 | Hydronic heater: outdoor |
| 2104008700 | Outdoor wood burning device, NEC |
| 2104009000 | Residential Firelogs Total: All Combustor Types |

RWC Emissions Calculations



RWC Calculation Methodology:

- Emissions (tons) =

Number of homes × Appliance Fraction ×



Number of appliances

Burn Rate (cords/year) ×



Number of cords

Density of firewood (tons/cord) ×



Convert cords to tons

Emission factor (tons of pollution/tons of wood)



Calculate tons of pollution

Appliance Fractions



- Percentage of homes in each county that use each type of wood-burning appliance
- Calculated from survey data
 - American Housing Survey (U.S. Census Bureau)
 - State and local surveys

■ Appliance Fraction =

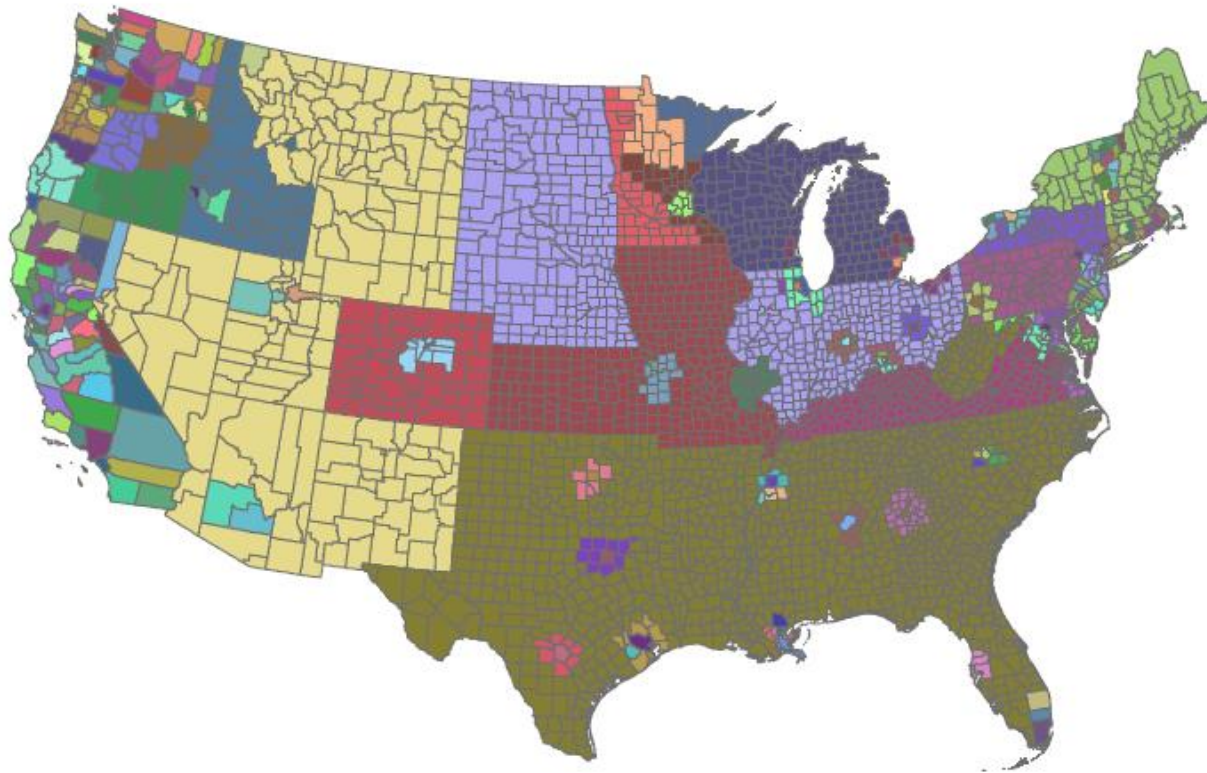
Number of Homes with Appliance ÷ Total Homes in Survey

- Divided into Main, Secondary, and Pleasure heating

Appliance Fractions



- Unique appliance profiles



Burn Rates

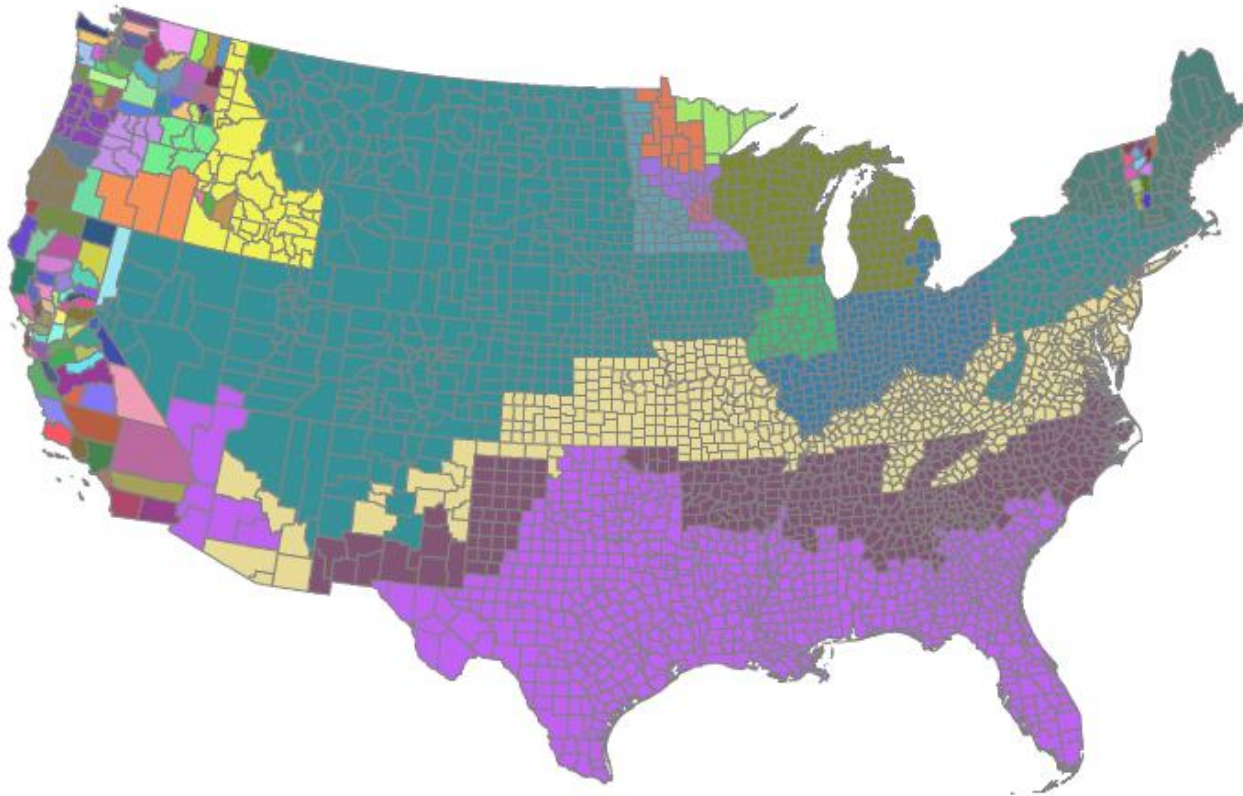


- Amount of wood (tons or cords) burned in each appliance annually
- Estimated based on state and local RWC surveys and expert judgment
- Also separated in the Main, Secondary, and Pleasure

Burn Rates



- Unique burn profiles



Density of Firewood

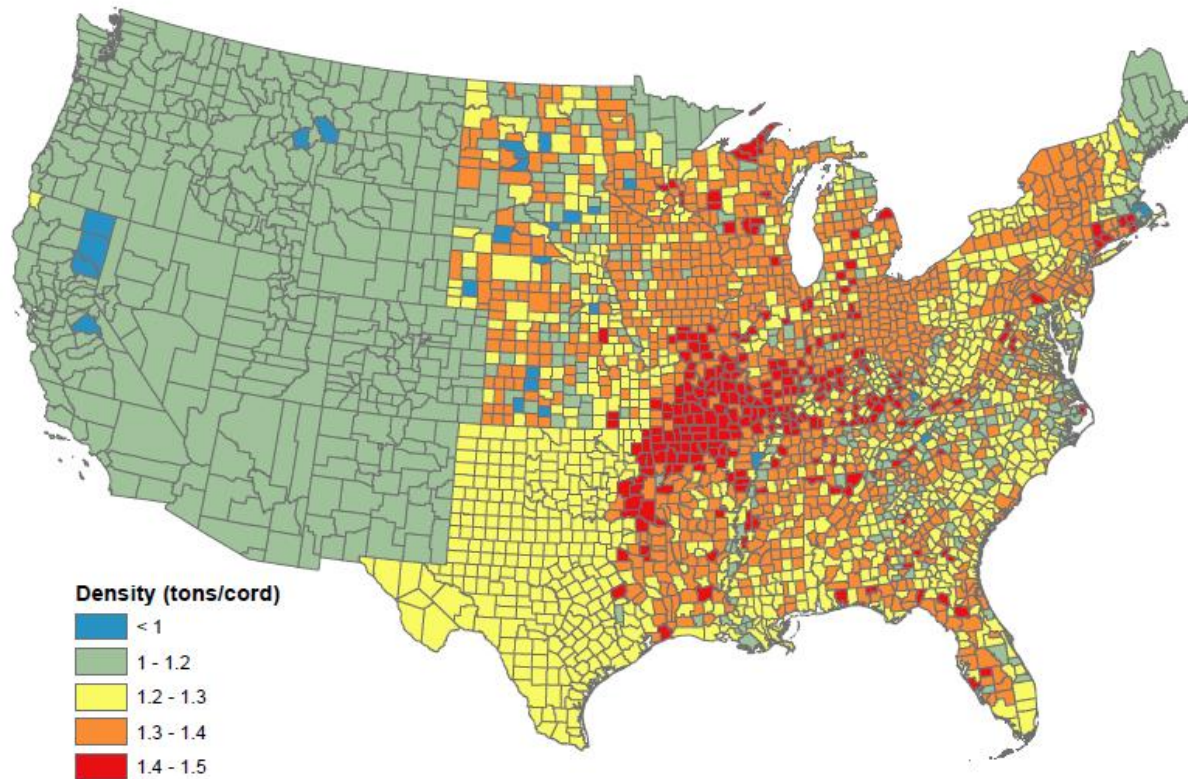


- Used to covert data on cords of firewood to tons
- County-level data from U.S. Forest Service Timber Products Output database

Density of Firewood



- Density of firewood by county



Questions?



BOLD
THINKERS
DRIVING
REAL-WORLD
IMPACT

