

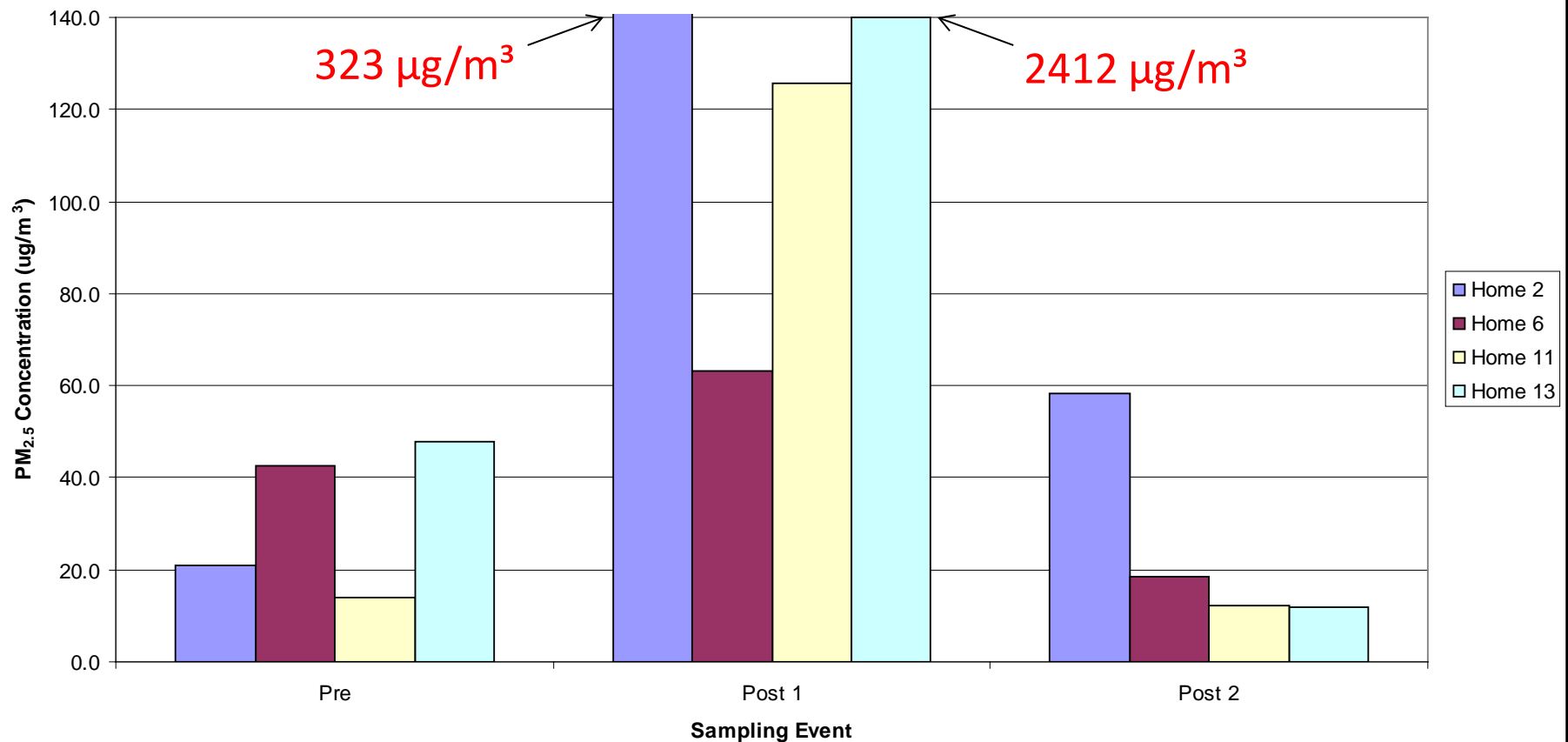
# Wood Stove Studies & Education on the Nez Perce Reservation

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# Measurable Outcomes of a Woodstove Changeout on the Nez Perce Reservation

## Particulate Matter 2.5 Levels Following Outreach & Education



# Other Wood Smoke Related Studies

- ARTIS (asthma randomized trial of indoor wood smoke) (2009-2011)
- Alternative Wood Fuel Study (2013 - 2014)
  - Phase 1: Woodstove Use, Home Heating and Health Effects: A Survey of Attitudes, Knowledge and Behaviors in Tribal Communities
  - Phase 2: Briquette Pilot - Testing the Viability of an Alternative Woodstove Fuel



# R10 Tribal Clean Burning Workgroup

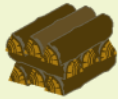
## WET WOOD IS A WASTE

BURN DRY FIREWOOD TO SAVE MONEY AND HEALTH

### Four Easy Steps to Dry Firewood



STEP 1  
SPLIT



STEP 2  
STACK



STEP 3  
COVER



STEP 4  
STORE



EPA 456/F-10-003

## SMOKY FIRES ARE A WASTE

USE DRY FIREWOOD AND BURN EFFICIENTLY



Photo: Gary Ehrlich

Tips and Information to Save Money and Protect Your Family's Health

## SMOKY FIRES ARE A WASTE

BURN EFFICIENTLY

### 3 Steps for Efficient Heating



STEP 1  
START IT HOT\*



STEP 2  
ADJUST AIRFLOW SLOWLY



STEP 3  
CREATE DRAFT TO REFUEL

\*Note: Steps are for non-catalytic stoves. See the stove instruction manual (if available) for further details.

BURN WISE

### How to Burn Wood Efficiently

#### 1. START IT HOT

- Start with a small fire. Use dry kindling and a few pieces of wood (no more than 20% moisture content).
- Completely open the damper or air control to give the fire plenty of air. Older stoves may need the door slightly open at startup.
- Get the chimney or flue hot. Add kindling if necessary.
- Gradually add larger pieces of split, dry firewood.
- Close the door to heat the stove and flue (15-30 minutes depending on the stove).

#### 2. ADJUST AIRFLOW SLOWLY

- Once the stove is fully-heated, add dry firewood.
- Keep space between firewood when adding more fuel to the fire.
- Gradually close the air controls because closing down too quickly can smolder the fire.
- A smoldering fire, "dirty" glass doors or smoke from the chimney are all signs that the fire needs more air or that the firewood is too moist.

#### 3. CREATE DRAFT TO REFUEL

- When more firewood is needed, fully open the air control to create a draft in the chimney first.
- Open the door slowly to prevent smoke from entering the room.
- Add wood and adjust burn rates by adding or reducing airflow.

For More Information Contact:

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For digital copies, contact Sandra Brozusky at brozusky.sandra@epa.gov

# Current Study

- Residential Wood Smoke Interventions Improving Health in Native American Populations (2014 - 2019)
  - National Institute of Health funding: University of Montana, Nimiipuu Health, NPT Forestry & Fire Management, NPT ERWM Air Quality
  - Navajo Nation
  - Community and home level interventions
  - Community Advisory Board



# Community Level Intervention



Lapwai  
Wood Yard

# Home Level: Health Measures & Indoor Air Sampling





# Home Education Intervention

- Digital stories combining Nimiipuu stories with Burn Wise messaging
  - How to Treat Firewood
  - How to Optimize Your Wood Burning
- Tools received: moisture meter, stove thermometer, fire starters





# EPA Burn Wise

- Burn Wise Awareness Kit
- How & Why to Use a Moisture Meter
- Two Videos:
  - “Split, Stack, Cover, Store”
  - “Wet Wood is a Waste”
- Wood Smoke Activity Book



# Thank You!

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