

NATIONAL TRIBAL AIR ASSOCIATION

Wood Smoke Work Group

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WOOD SMOKE WORK GROUP OVERVIEW

Improving Indoor Air

- NTAA and EPA established a work group to collaborate with Tribal, state, EPA and other involved entities
- Purpose of researching, developing, and implementing a national residential wood stove program
 - indoor air
 - ambient air quality impacts from residential wood/coal burning stoves
 - wood smoke related issues on Tribal lands



MANY TRIBAL HOMES USE
OLD, INEFFICIENT AND
DIRTY BURNING STOVES
FOR HEATING AND
COOKING

Outdated stoves may
also release wood
smoke that is harmful
to the health of
residents, especially
the young and the
old

2021 WHITE PAPER ON THE WOOD HEATER EMISSION PILOT PROJECT FOR INDIAN COUNTRY

Written by NTAA Policy Advisory Committee Member,
Laura McKelvey

CARPER, MURKOWSKI WOOD HEATERS EMISSIONS REDUCTION ACT (WHERA), 2019

Authorize \$75 million Annually



From Fiscal year 2020 through 2025 for a new EPA grant program that provides incentives to households to change-out their old wood heaters for cleaner burning stoves.

Replace Old Wood Heaters



with new, efficient heaters and encourage the recycling of old heaters. The bill creates a voluntary program to replace older wood stoves with new, efficient, cleaner burning and properly installed heaters that at least meet stringent EPA emission standards.

Require funds for Tribes



EPA would make available no less than 4 percent of the funds for Indian tribes to use for maintenance and installation of the new stoves.

CARPER, MURKOWSKI WOOD HEATERS EMISSIONS REDUCTION ACT (WHERA), 2019

Result in Cleaner Air



EPA has determined that replacing just one old, inefficient wood heater is equivalent to taking five dirty diesel engines off the road.

A pilot effort to support changeouts modeled after WHERA would be appropriate to support and protect public health in Indian Country



WHY A CHANGEOUT PILOT?

- Tribes have a long **successful history of conducting changeout programs** and improving public health
- **11.5 million homes use wood** as a primary or secondary heat source; **58% are in rural areas** or in Indian Country
- Large areas of Indian Country are rural there are **special considerations for changeout programs**
 - EX: finding providers and retailers that service Tribal communities
 - EX: Lack of certified installers/technicians
- Develop a **training and job creation** program that can support the Tribes and surrounding communities
- Many Tribal elders' homes **need new wood heating devices**





WHY A CHANGEOUT PILOT?

- Woodstoves are a widespread **form of home heating** in Tribal households
- Disproportionate impacts of air pollution are exacerbated by **wood smoke exposure**
- Replacing uncertified wood heaters is an evidence-based **public health intervention**
- As part of a successful changeout program **additional support** will be required including:
 - Education and outreach prior to implementation and after
 - Fuel supply support
- Monitoring prior to- and post-changeout should be included to **provide accountability and document success** is needed for a pilot project
- If a program included donated stoves there are **additional factors to consider** such as providing for parts and replacement, transportation, and other special needs

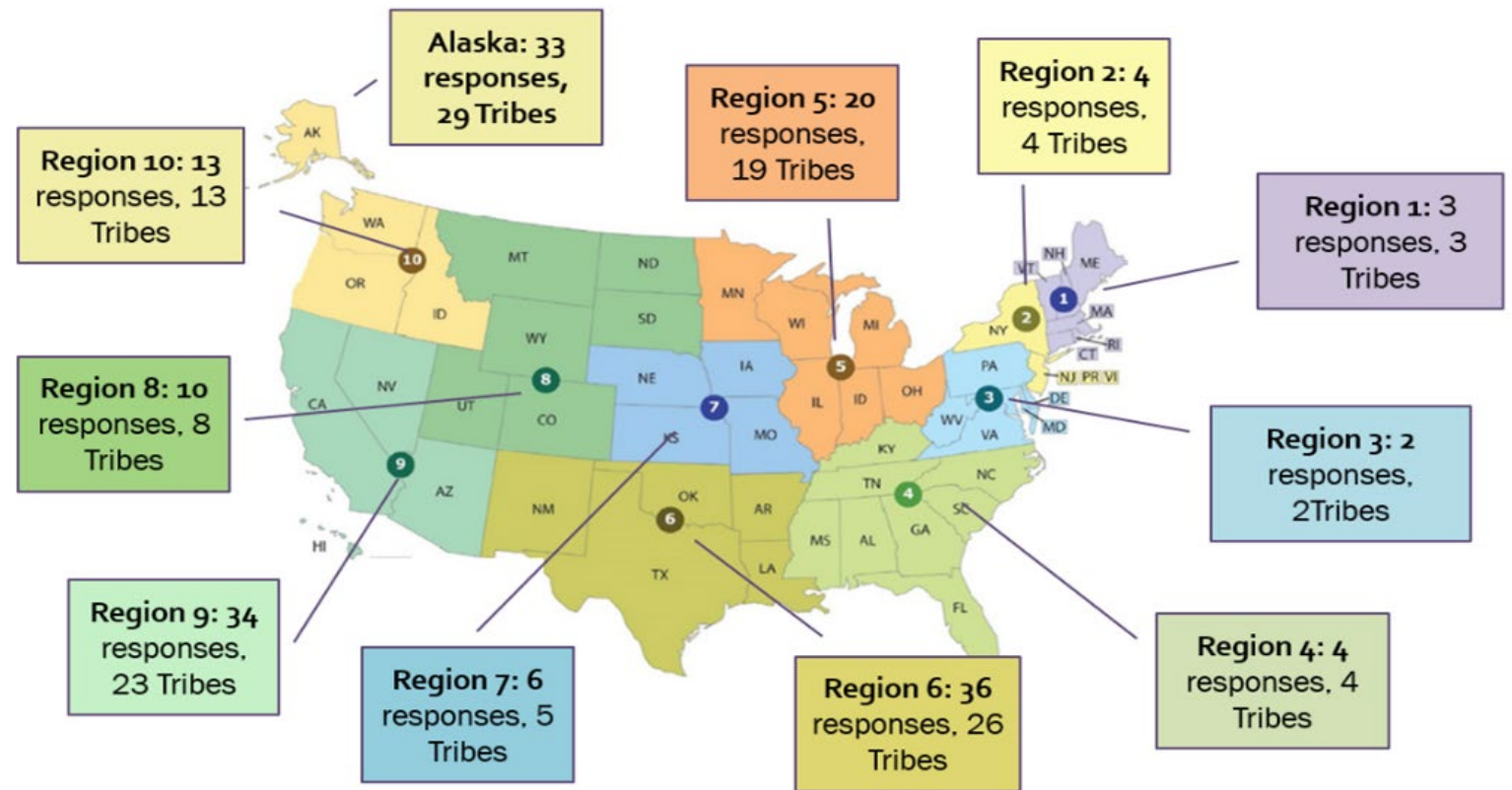


TRIBES HAVE A SUCCESSFUL HISTORY OF CHANGEOUT PROGRAMS

- **Swinomish Indian Tribal Community conducted a multi-phase changeout program**
 - Changed out 120 stoves for community members
 - PM_{2.5} concentrations in the Truckee area of the reservation, were reduced by approximately 30%. Studies also showed a dramatic reduction of indoor concentrations of PM and other elements of wood smoke
- **Wisteqn'eemit & Nez Perce Tribe Air Quality Program**
 - Received 4 stoves and developed an advisory committee
 - Found additional funding support to assist with changeout costs and developed partnership. Their program also resulted in a 52% reduction of indoor PM concentrations
- **Red Feather Development Group is a non-profit organization, based out of Flagstaff, Arizona**
 - Partner with American Indian nations to develop sustainable solutions to the housing needs within their communities
 - Received 3 donated stoves and obtained additional funding for replacement costs
- **Environmental Initiative based in Minneapolis, Minnesota**
 - Received 6 stoves and found additional funding support to assist with changeout costs and develop partnerships

NTAA'S BASELINE NEEDS ASSESSMENT (BNA)

- Survey was open for 4 months
 - 339 total responses
- After data cleaning:
- Total of 169 responses
 - All 10 regions were represented
 - 129 Tribes & 4 organizations responses across 28 states



BNA EMERGED THEMES:

- I. EPA's investment in Tribal air programs is impactful, yet the majority of Tribes report that limited funding has far-reaching impacts.
- II. The federal investment in Tribal air quality programs is smaller than the federal investment in Tribal natural resources and environmental management.
- III. The modest allocation of \$12.5 million for Tribal air programs places a strain on some Tribes, through over-burdened air quality staff, while leaving other Tribes without any air quality presence.
- IV. Wildfire smoke is an emerging concern, but long-standing air quality issues continue to impact Tribes, including but not limited to road dust, diesel emissions, **woodsmoke**, and air toxics.
- V. When asked about indoor air pollution, Tribes were nearly unanimous in reporting that mold and moisture was a factor, with **woodsmoke and radon also among high priority issues**.

Figure 42. Sources of ambient air pollution that impact Tribes. ($n = 138$)

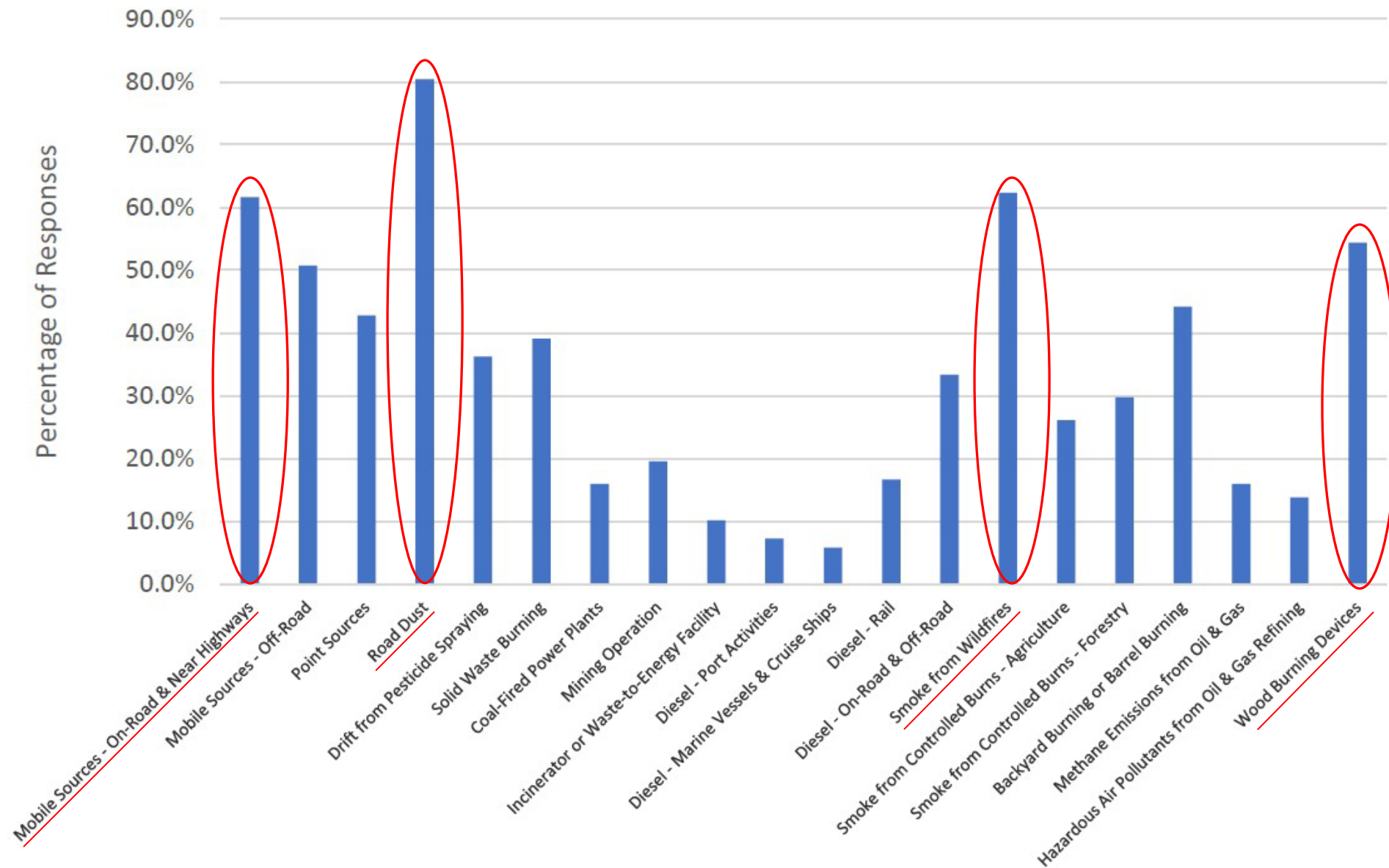


Figure 51. Indoor air pollutant concerns for Tribal housing. (*n* = 131)

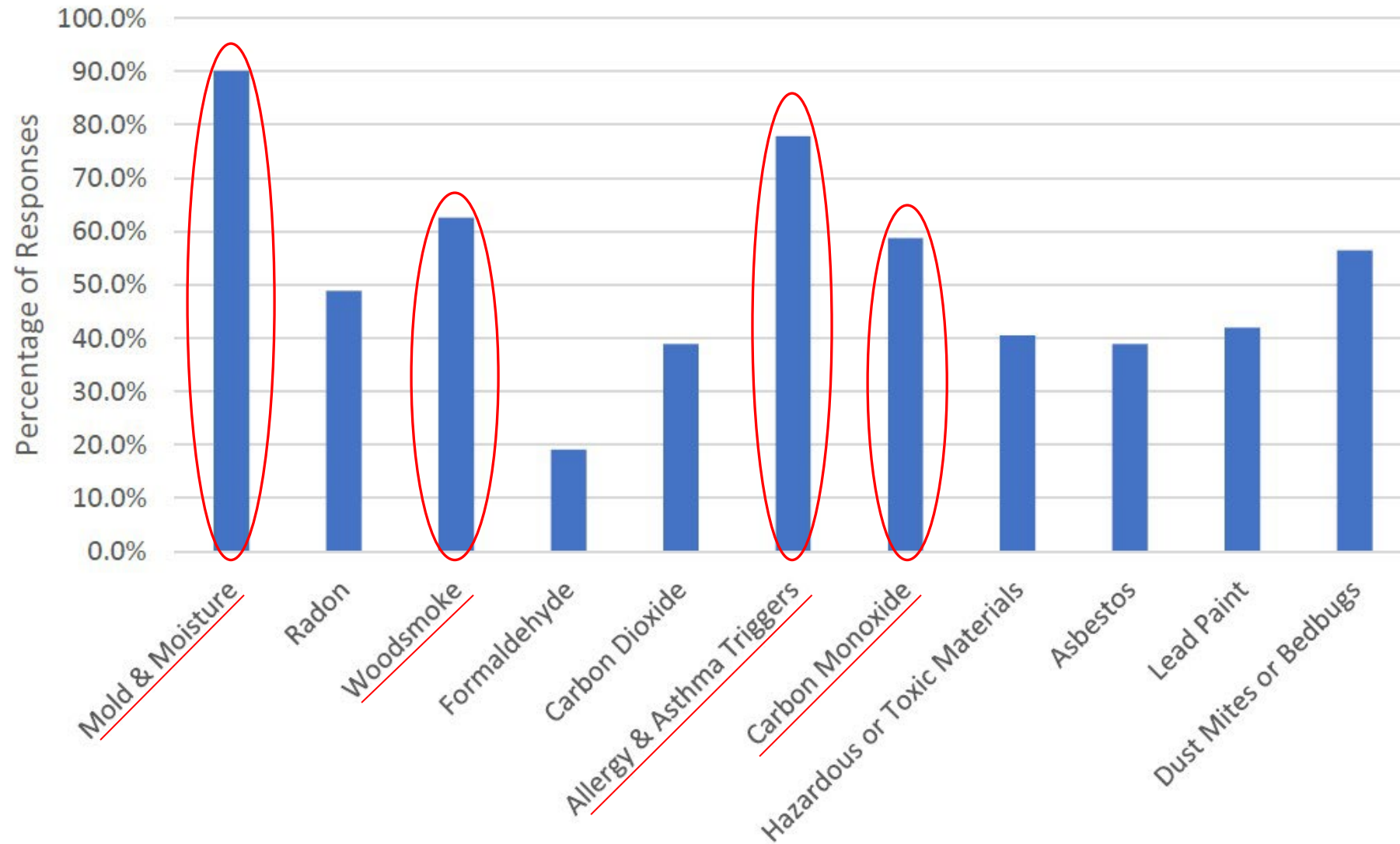




Figure 54. Funding need to replace old or uncertified woodstoves. (*n* = 128)

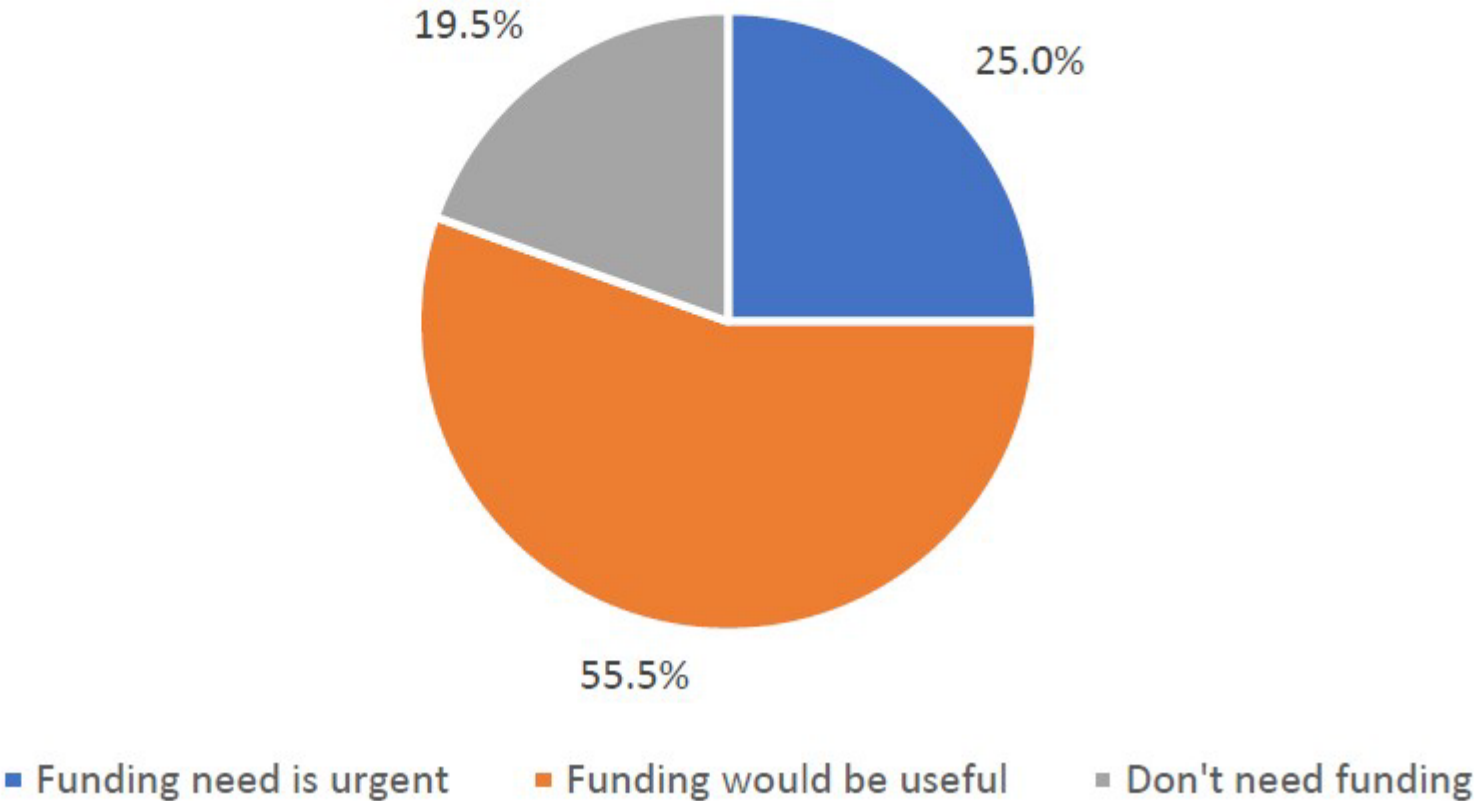
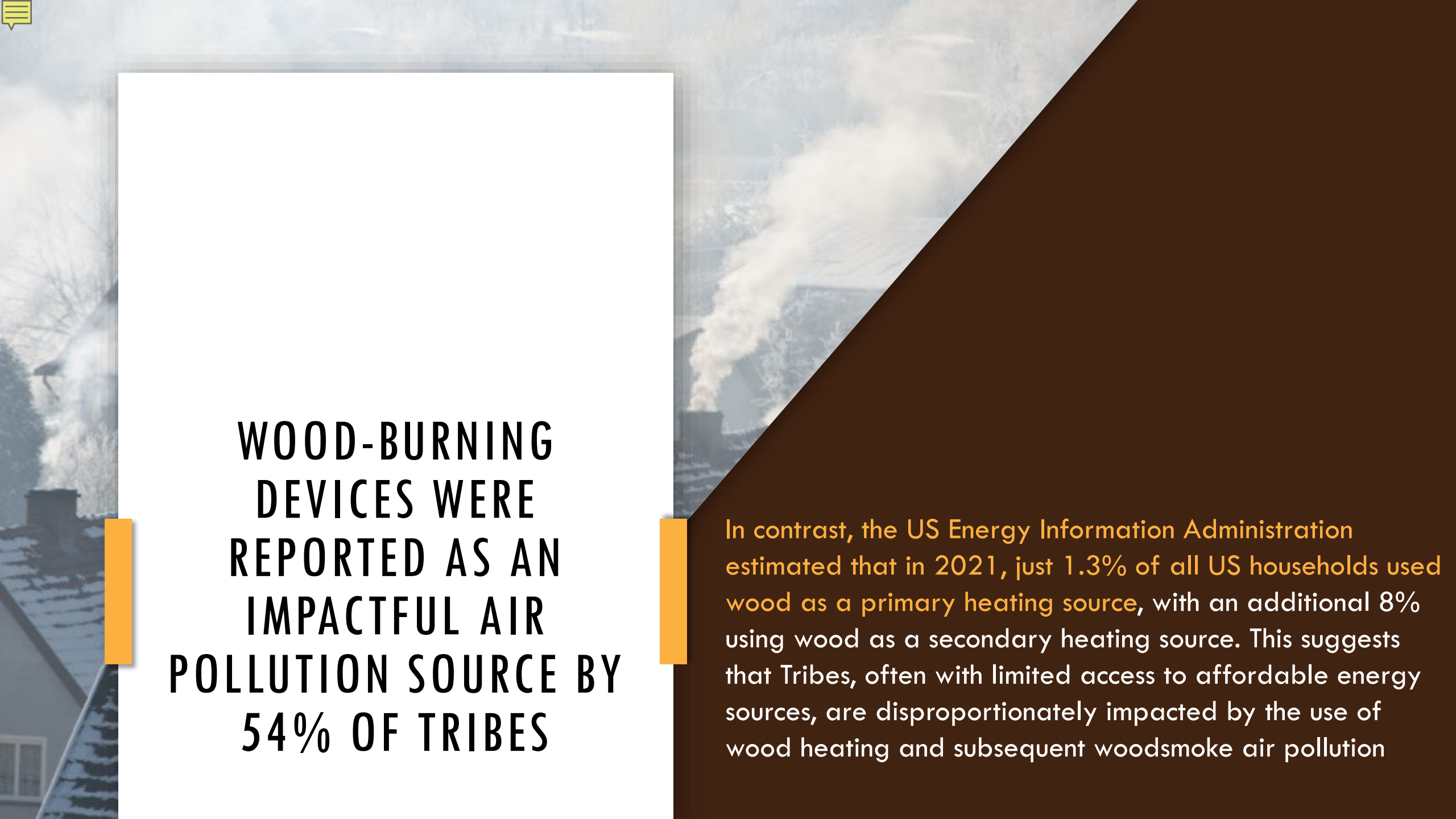


Table 5. Woodstoves in Use Among Tribe. ($n = 138$)

Amount	n	%
Do Not Know	54	39.1%
None	3	2.2%
1 - 25	16	11.6%
26 - 50	14	10.1%
51 - 75	12	8.7%
76 - 100	8	5.8%
101 - 125	3	2.2%
126 - 150	6	4.3%
151 - 175	2	1.4%
176 - 200	5	3.6%
201 - 225	1	0.7%
226 - 250	1	0.7%
251 or Greater	13	9.4%



**WOOD-BURNING
DEVICES WERE
REPORTED AS AN
IMPACTFUL AIR
POLLUTION SOURCE BY
54% OF TRIBES**

In contrast, the US Energy Information Administration estimated that in 2021, just 1.3% of all US households used wood as a primary heating source, with an additional 8% using wood as a secondary heating source. This suggests that Tribes, often with limited access to affordable energy sources, are disproportionately impacted by the use of wood heating and subsequent woodsmoke air pollution

ADDITIONAL RESOURCES

- Woodstove Use & Safety Infographic
- October 2021 – [National Tribal Air Association's White Paper on the Wood Heater Emission Pilot Project for Indian Country](#)
- EPA: Burn Wise Program
- EPA: Changeout Campaigns Case Studies
- Tribal Healthy Homes Network: Woodsmoke and Smoke Events
- Join the Residential Woodsmoke Monthly Call

WOODSTOVE USE & SAFETY



SEASONED FIREWOOD

BETTER FOR YOU AND YOUR HOME

Pre-seasoned fire wood burns more efficient, starts easier, and creates less smoke. Less smoke leads to healthier indoor and outdoor air. **Burn wood with a moisture reading under 20% moisture content for best results** (especially with new stoves)

Resource: "Wet Wood is a Waste: How to Test Your Firewood with a Moisture Meter"

<https://www.youtube.com/watch?v=M2Wg8cnm0>

Plan six months in advance to the expected first burn. **Split, Stack, Cover & Store** wood to increase the life expectancy of your woodstove, save money because of a more efficient burn, and create a healthier environment for your family



BACKDRAFT ISSUES

DANGERS OF BACKDRAFT & SOLUTIONS

- **Negative pressure** in the home can cause smoke to pull into the house (open a window, shut off fans to help create positive pressure in home)
- **Backdraft/cold chimney** - Slowly heating up the chimney will cause smoke to start rising as it should rather than into your home
- **Blocked chimneys** can cause backdraft rather than air pressure. Inspect and clean if necessary
- **Apply Proper Burn techniques** (use of kindling and starter) - Wet wood can cause a lot more smoke



PRE SEASON CLEANING

DANGERS OF CREOSOTE BUILDUP

Creosote is the number one cause of chimney fires. Be aware of how much creosote is in your chimney by inspecting it before each burning season. Depending on the amount of wood burned and moisture percentage of the wood, this may need to be done much more often to remove the threat. Always keep your chimney clear to keep your family out of danger

CORRECT METHOD



USE moisture meter on the inside of firewood (burn 20% or lower for best results)

WRONG METHOD



DO NOT use moisture meter on the end or on the outside of firewood

NOTE: For an accurate reading, the moisture meter should test the newly/freshly split side. Testing the end will not typically provide an accurate reading.

HOME CARE

PROTECT YOUR HOME

- **Have a Fire Extinguisher** (fully charged) ready to use, with the knowledge on how to properly use it. Make sure it is one for putting out fires and not other chemicals
- **Fire Detectors** - Replace batteries in order to help keep peace of mind knowing alarms will go off when danger occurs
- **Carbon Monoxide Alarms** - If there is danger of smoke or live fire burning in your home this alarm is a must have for keeping your family safe. (True Story: An elder had to go to the hospital because, unfortunately when her son cleaned her chimney, he did not do it properly and the harmful gas was getting back into the home. They're lucky that no one died.)



BUILDING A FIRE

HAVING TROUBLE?

- **Crisscross various sized pieces** to create better air flow with flames. Work from bottom up for more heat build
- **Use kindling starter** (newspaper, wood shavings, etc.) to get the first flames going



National Tribal Air Association's

White Paper on the Wood Heater Emission Pilot Project for Indian Country

By Laura McKelvey¹

NTAA's Policy Advisory Committee

October 2021

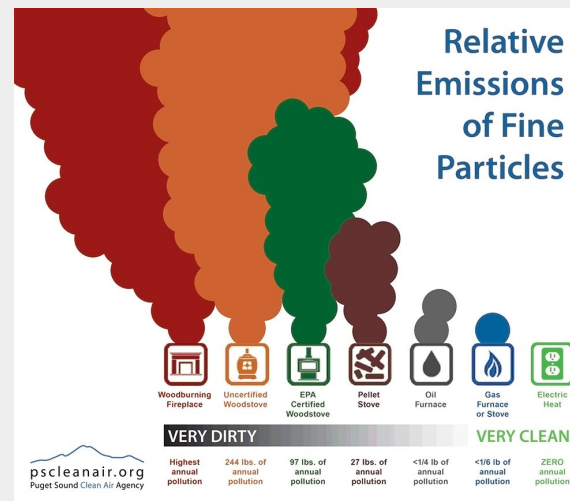
I. The Wood Heater Emission Pilot Project for Indian Country White Paper Summary

An earlier proposal of the CARPER-MURKOWSKI Wood Heaters Emissions Reduction Act (WHERA) was to be a 5-year grant program to provide states, Tribal entities, and local governments access to competitive grants for wood heater changeout programs for their communities. This program would have set aside 4% for Indian Tribes and rural communities. The program's goal was to reduce air toxics pollution and particulate matter to protect public health and support American jobs. However, WHERA is no longer being considered in this year's budget process.

Nonetheless, NTAA believes that this an important effort for protecting public health and is crucial particularly in Indian Country. There is a large body of evidence that shows American Indians and Alaskan Natives (AI/AN) are disproportionately impacted by air pollution, that AI/AN adults and children alike have higher rates of asthma, and that AI/AN adults suffer higher rates of diabetes, heart disease and chronic obstructive pulmonary disorders than do other people of non-AI/AN descent. All these can be exacerbated by exposure to both indoor and outdoor wood smoke.

¹ Ms. McKelvey serves as a member of NTAA's Policy Advisory Committee (PAC). Thank you to fellow NTAA PAC member Bill Droege from the Minnesota Environmental Initiative for his early input and providing content for this White Paper. For more information on the National Tribal Air Association, please visit www.ntaa-tribalair.org

Relative Emissions of Fine Particles



NTAA WOOD SMOKE WORK GROUP LEADS



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STAY IN TOUCH

Calls are typically held on the 3rd Thursday of the month at 2 pm ET.

For information on the next call, please check our [Calendar](#) or [NTAA's Weekly Update](#)

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