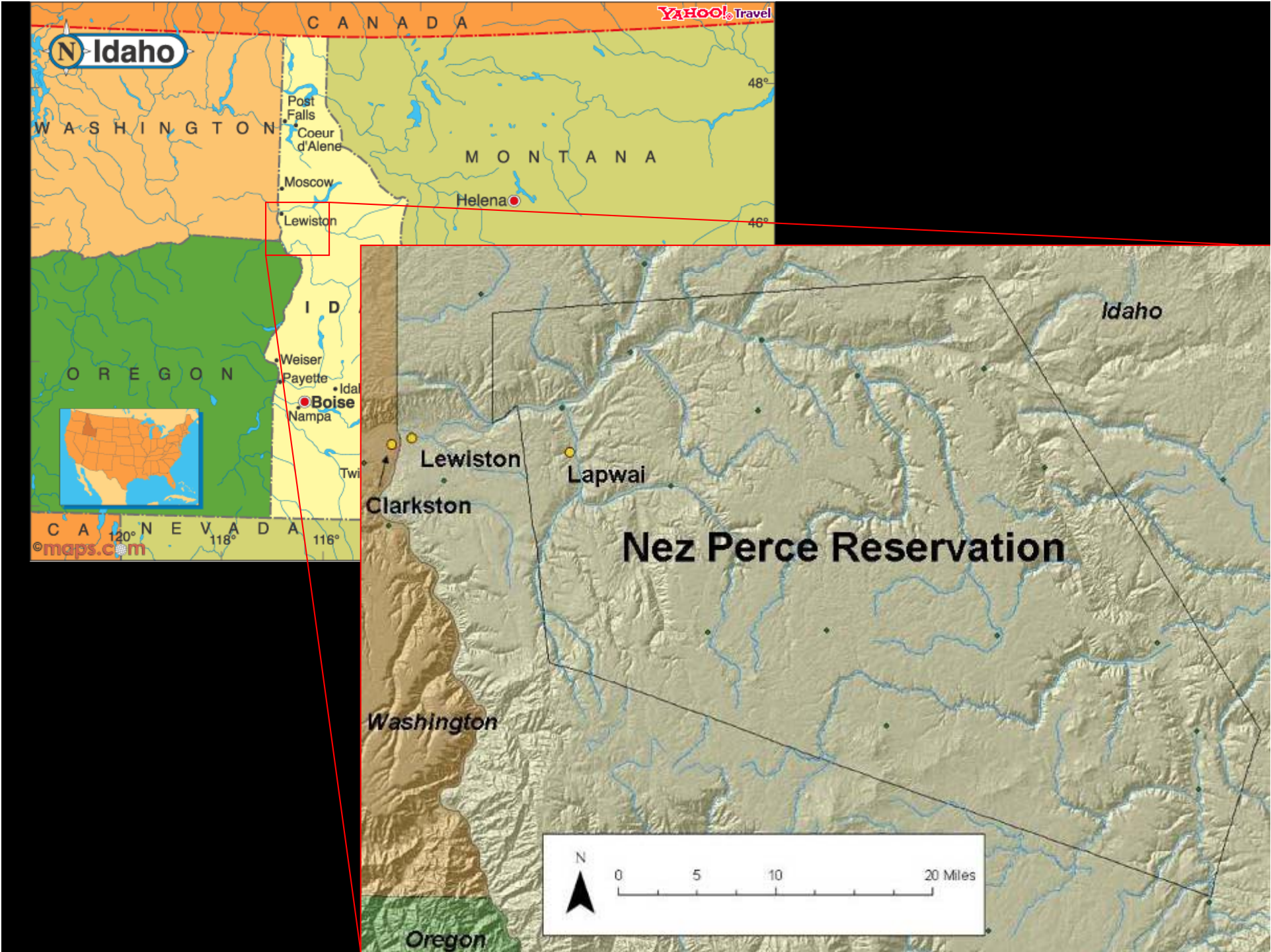



A landscape photograph of rolling hills under a grey sky with a rainbow on the left side. The hills are covered in dry, golden-brown grass. The rainbow is positioned on the left side of the frame, arching over the hills. The text is centered in the upper half of the image.

# Nez Perce Tribe Air Quality Program

Air Toxics Program  
Updates and Challenges



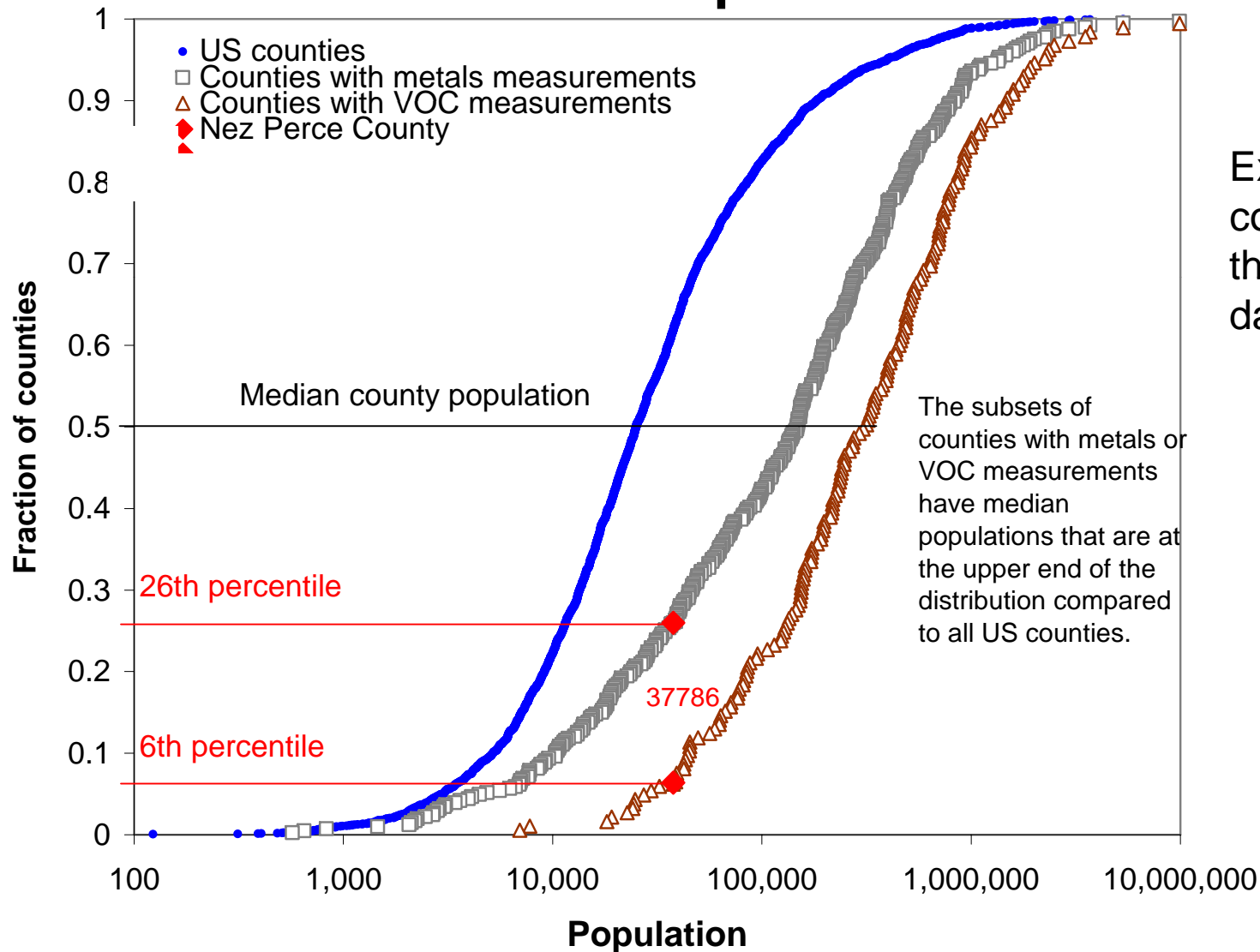


Community-Scale Air Toxics Study  
2006-2007

**Toxics Monitoring Around a Kraft Pulp  
and Paper Mill in Lewiston, Idaho**

<http://www.nezperce.org/Official/Air%20Quality/Airtoxics/airtoxics.htm>

# Nez Perce County Demographic Comparison



Expect lower concentrations than in other U.S. data.

# Potential Concern

>50% detects exceed the chronic screening threshold



Formaldehyde

Benzene

Tetrachloroethylene

Arsenic

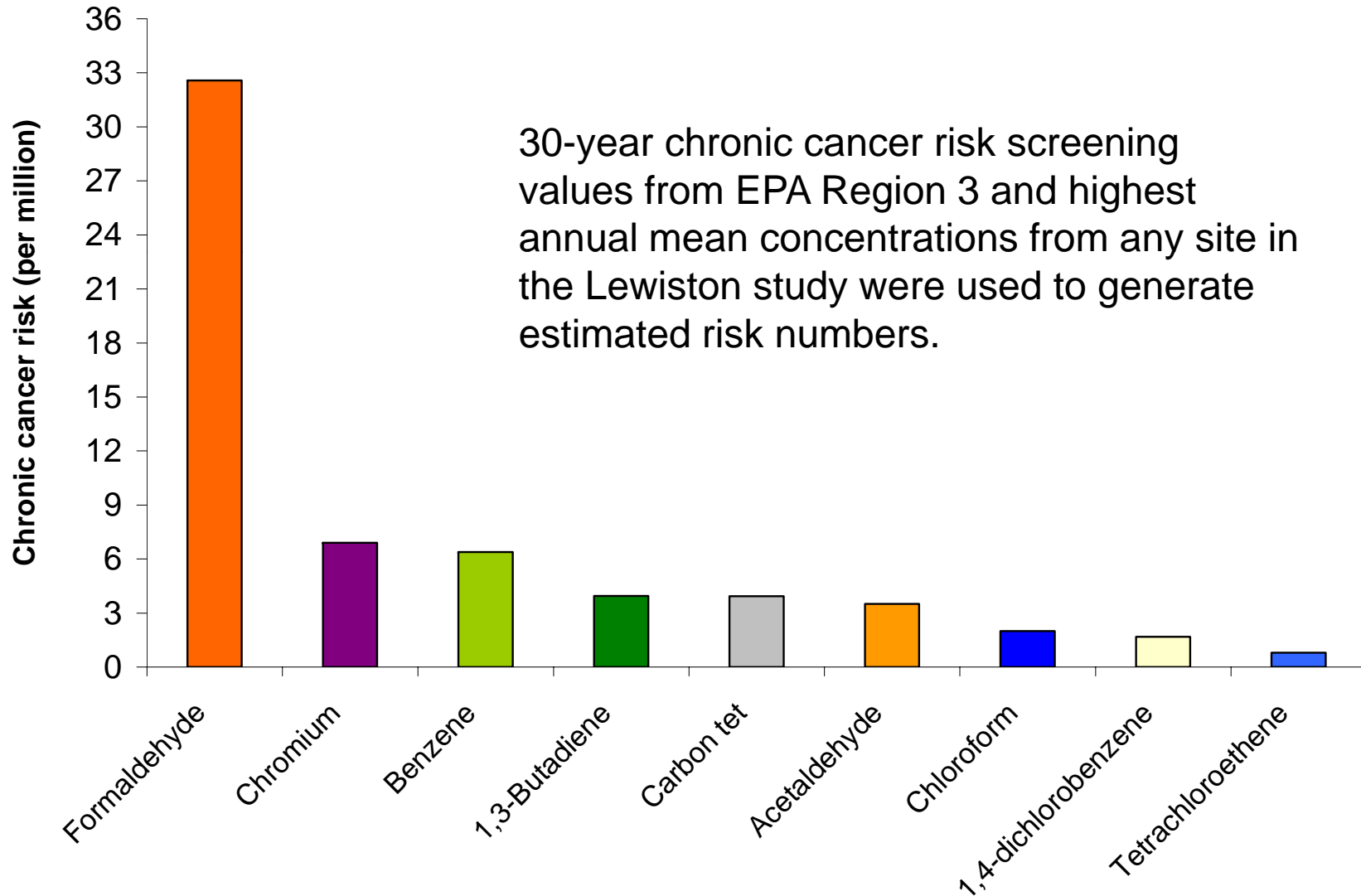
Acetaldehyde

Carbon tetrachloride

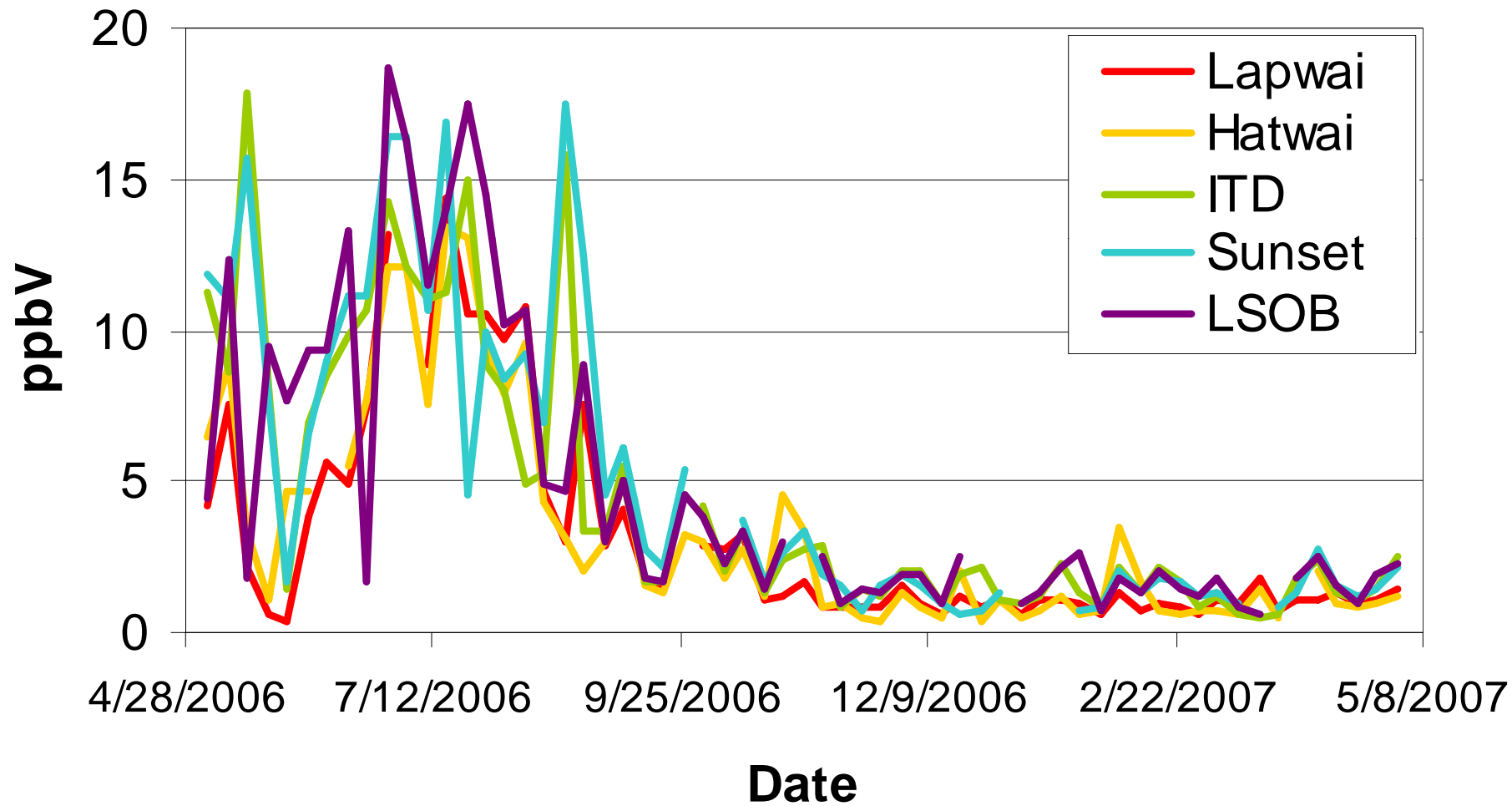
1,3-Butadiene

Manganese

# Chronic Inhalation Cancer Risk Comparison



# Formaldehyde



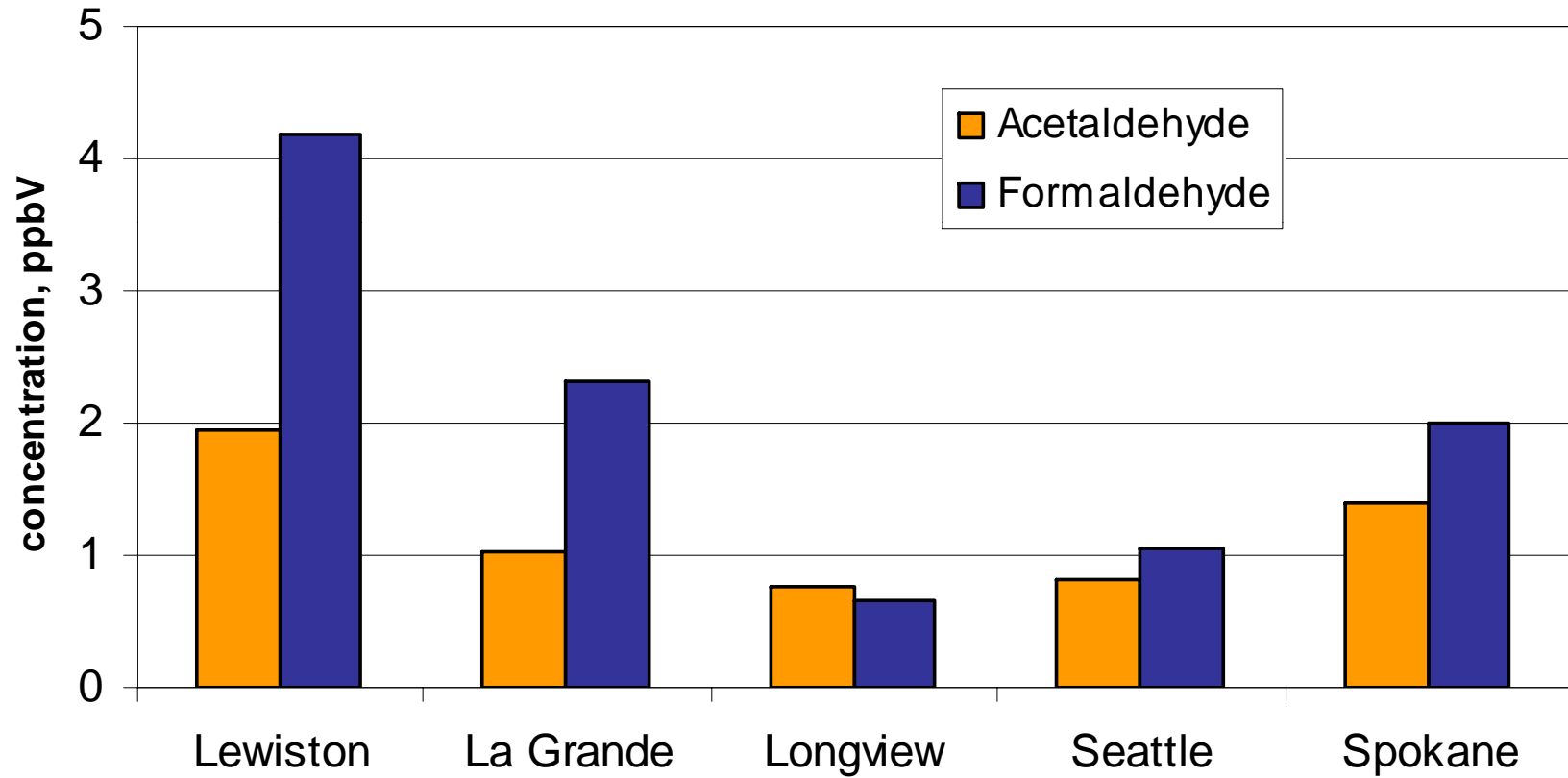
# Regional Comparison



**La Grande, OR** May 2006-April 2007 rural NATTS site  
**Longview, WA** May 2004-May 2005 Pulp & paper, urban setting  
**Seattle, WA** 2005  
**Spokane, WA** 2005



# Carbonyls

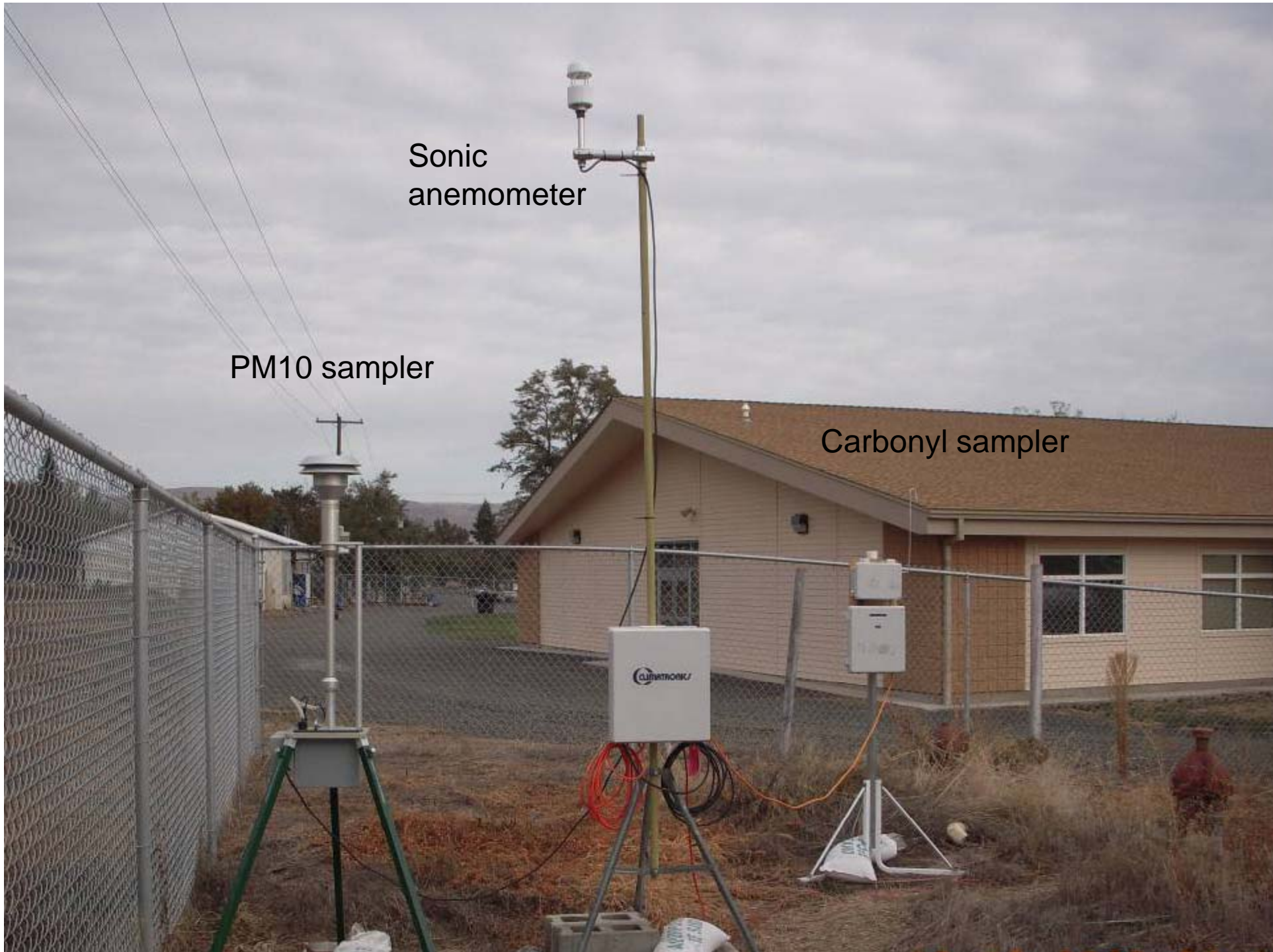


# ATSDR health consultation



# School Air Toxics Study 2009



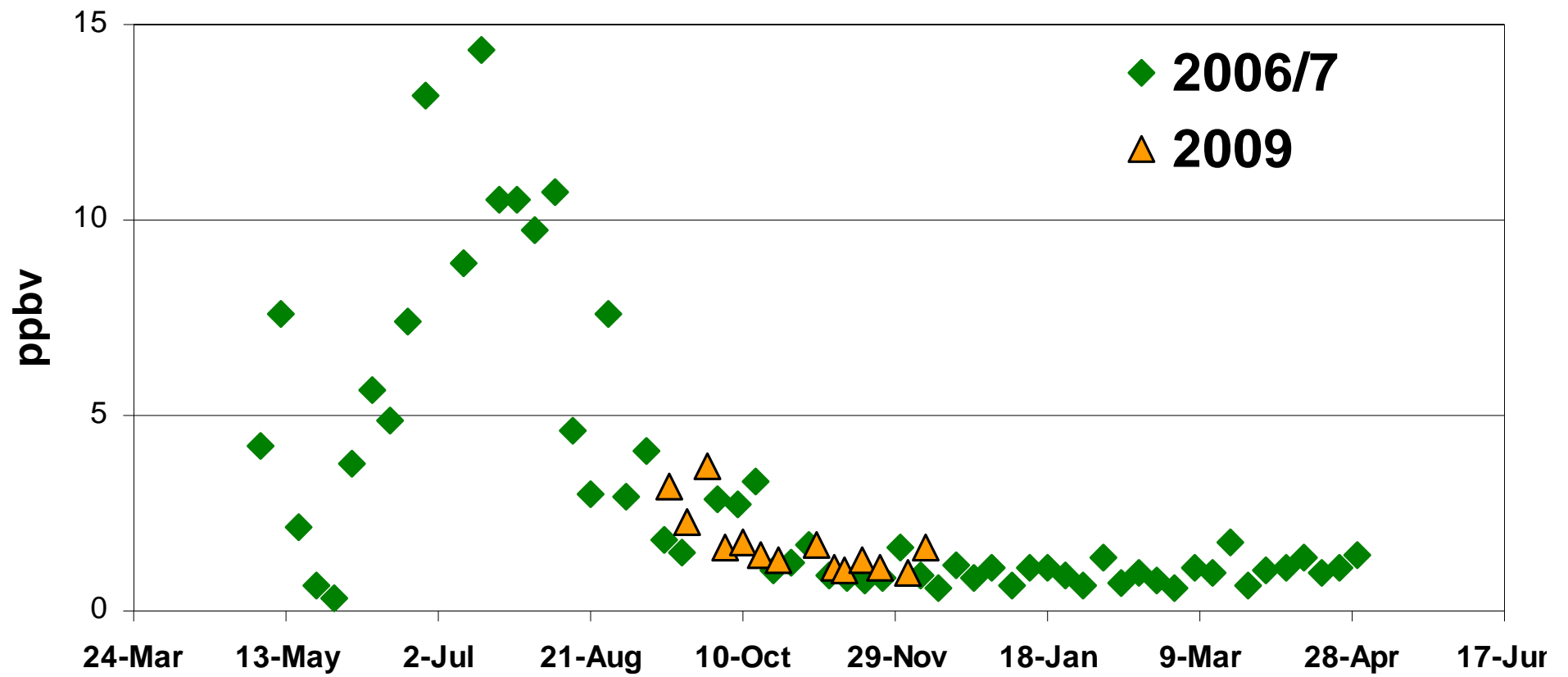


Sonic  
anemometer

PM10 sampler

Carbonyl sampler

# Formaldehyde





### VOC species to be measured by PTR-MS

Ion (m/z)	Species	Notes
Oxygenated species		
31	formaldehyde	direct emissions / photoproduct
33	methanol	solvents
45	acetaldehyde	direct emission / photochemical product
59	acetone / propanal	solvents
73	2-butanone / butanal	solvents
Aromatic compounds		
79	benzene	air toxic / vehicle emissions
93	toluene	vehicle emissions
105	styrene	industrial
107	Sum of C <sub>2</sub> -alkylbenzenes (C <sub>8</sub> H <sub>10</sub> )	vehicle emissions
121	Sum of C <sub>3</sub> -alkylbenzenes (C <sub>9</sub> H <sub>12</sub> )	vehicle emissions
135	Sum of C <sub>4</sub> -alkylbenzenes (C <sub>10</sub> H <sub>14</sub> )	vehicle emissions
Biogenic emissions		
69	isoprene <sup>(1)</sup>	biogenic emission
71	MVK + MACR <sup>(2)</sup>	isoprene photoproducts
137	monoterpenes	biogenic emission
Others		
54	acrylonitrile	air toxic: plastics industry
42	acetonitrile	CH <sub>3</sub> CN : wood smoke tracer

(1) subject to positive interferences from other hydrocarbons at low isoprene mixing ratios (< 100 pptv)

(2) methylvinyl ketone + methacrolein

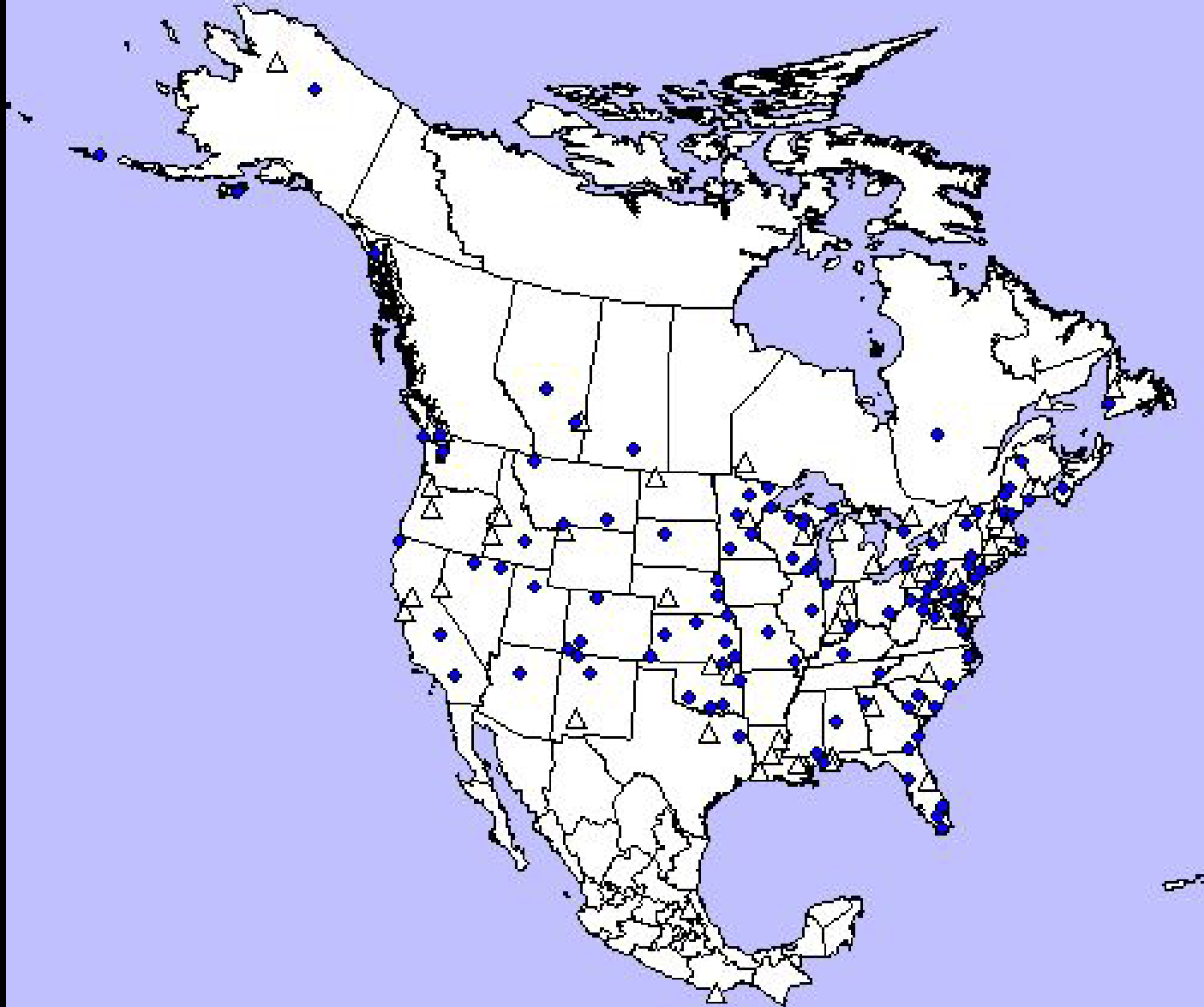




# Wet Mercury Monitoring

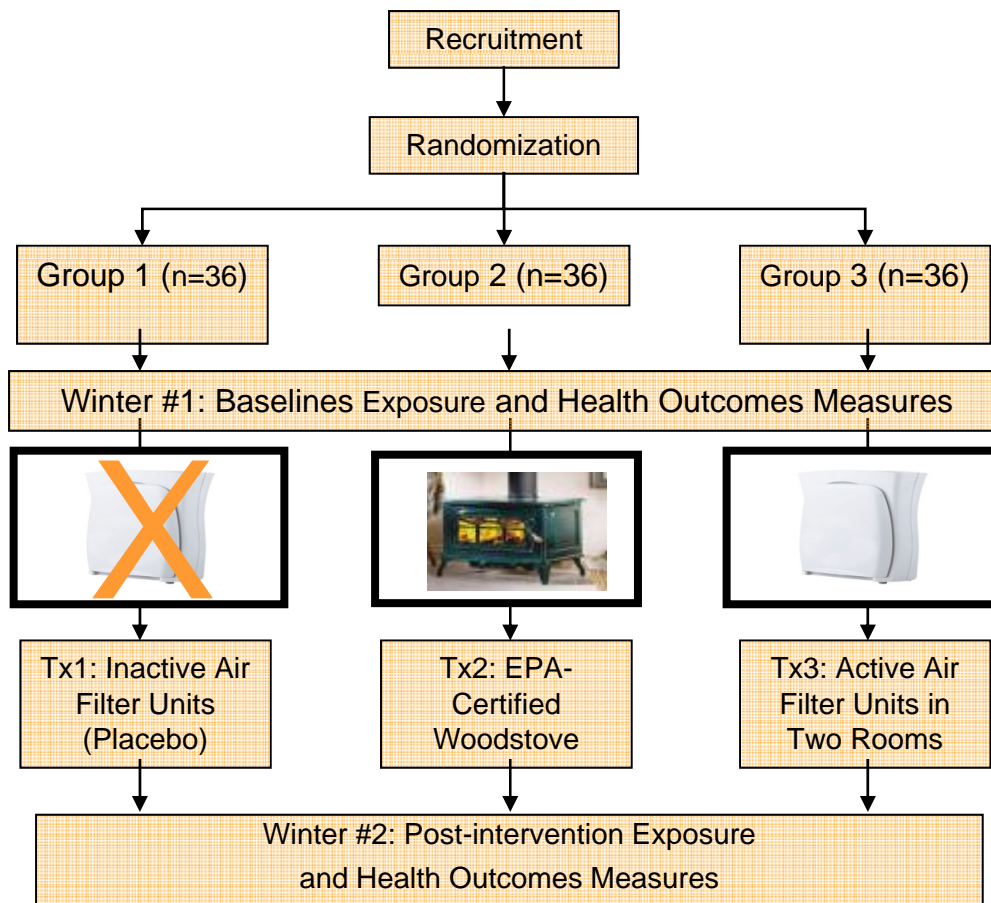


# Mercury Deposition Network Sites



# The ARTIS Study:

## A randomized trial of indoor wood smoke

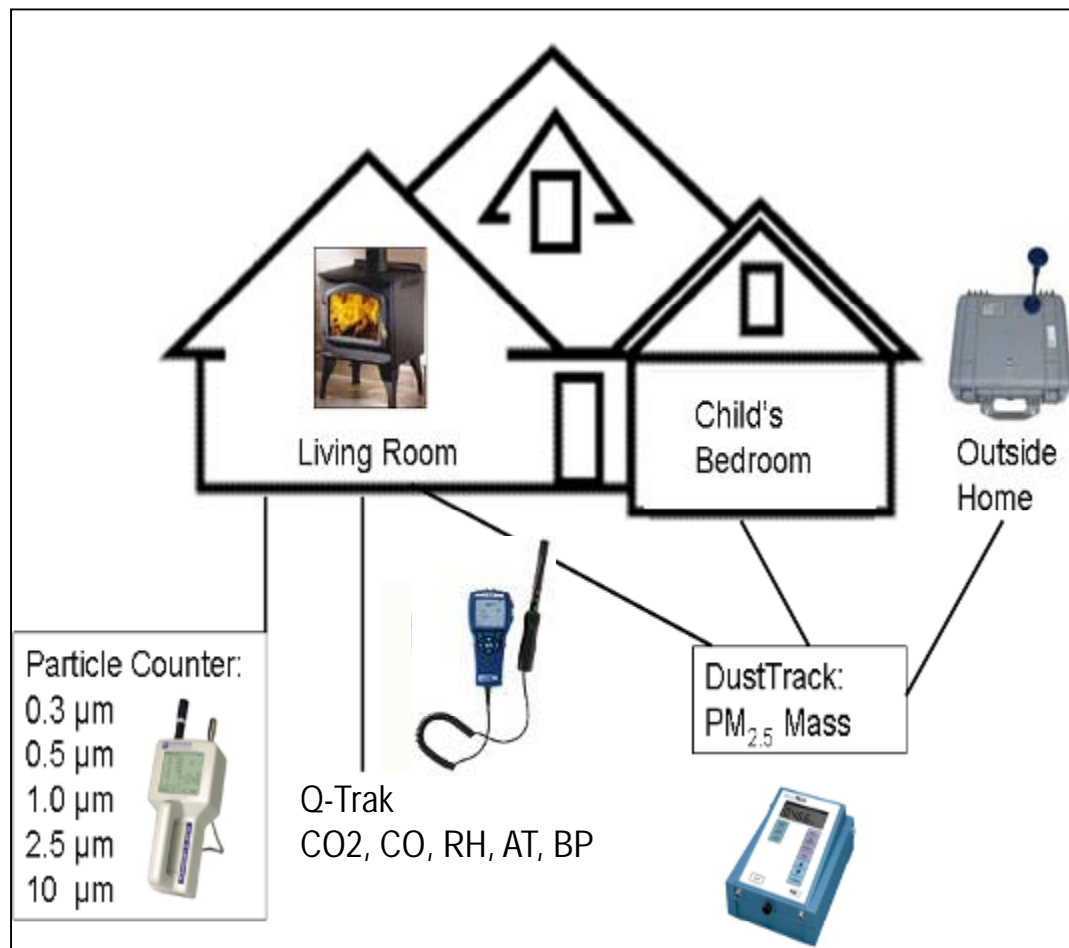


Participating Communities:

Missoula County, MT  
Ravalli County, MT  
Nez Perce Indian Reservation, ID  
Butte/Silver Bow County, MT  
Fairbanks, AK

This research is supported by the National Institute of Environmental Health Sciences (1R01ES016336-01 and 3R01ES016336-02S1).

# The ARTIS Study: Sampling strategy



This research is supported by the National Institute of Environmental Health Sciences (1R01ES016336-01 and 3R01ES016336-02S1).



# Nez Perce Tribe Air Quality Program

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