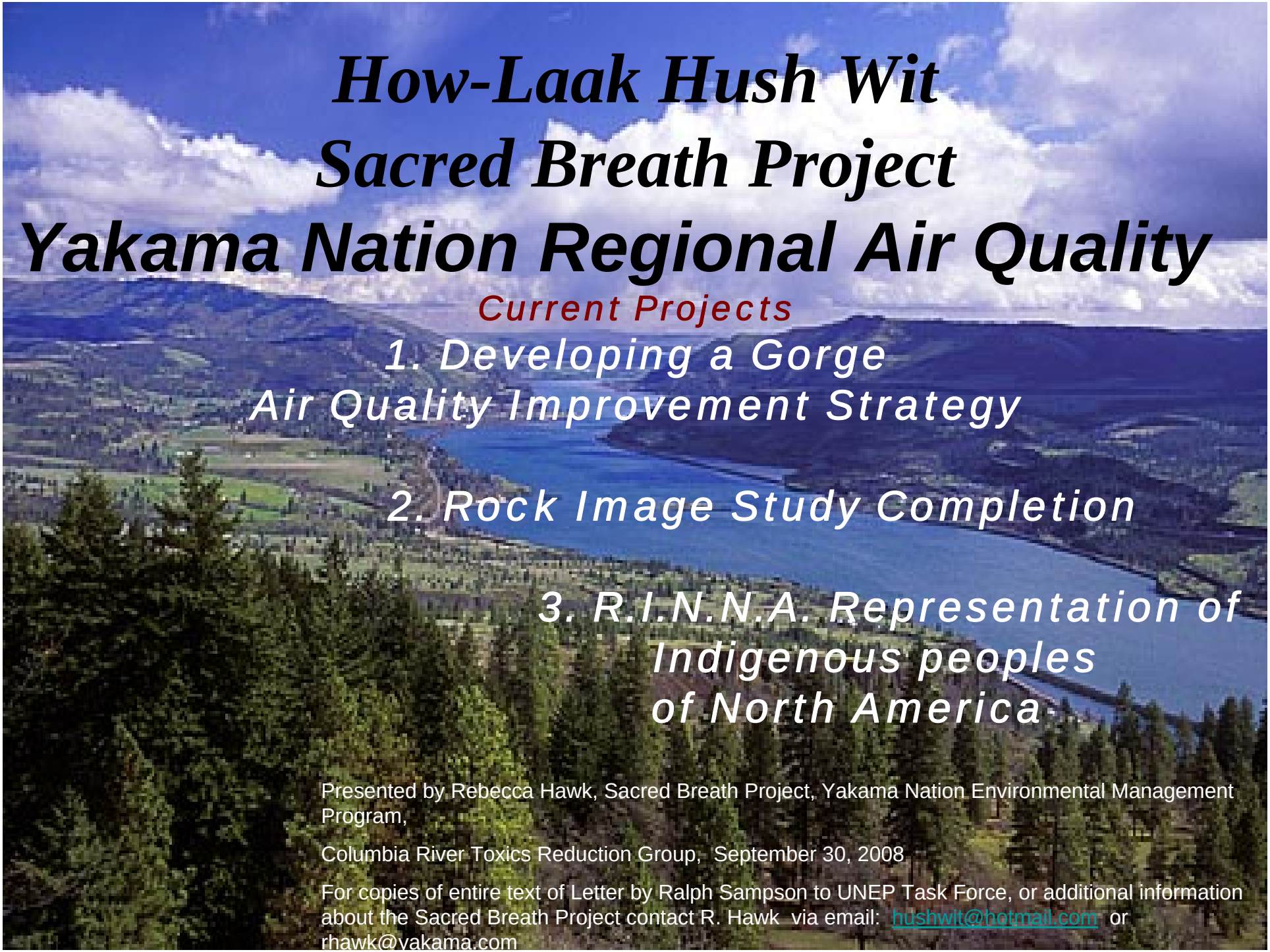


How-Laak Hush Wit
Sacred Breath Project
Yakama Nation Regional Air Quality

Current Projects

1. Developing a Gorge Air Quality Improvement Strategy

2. Rock Image Study Completion

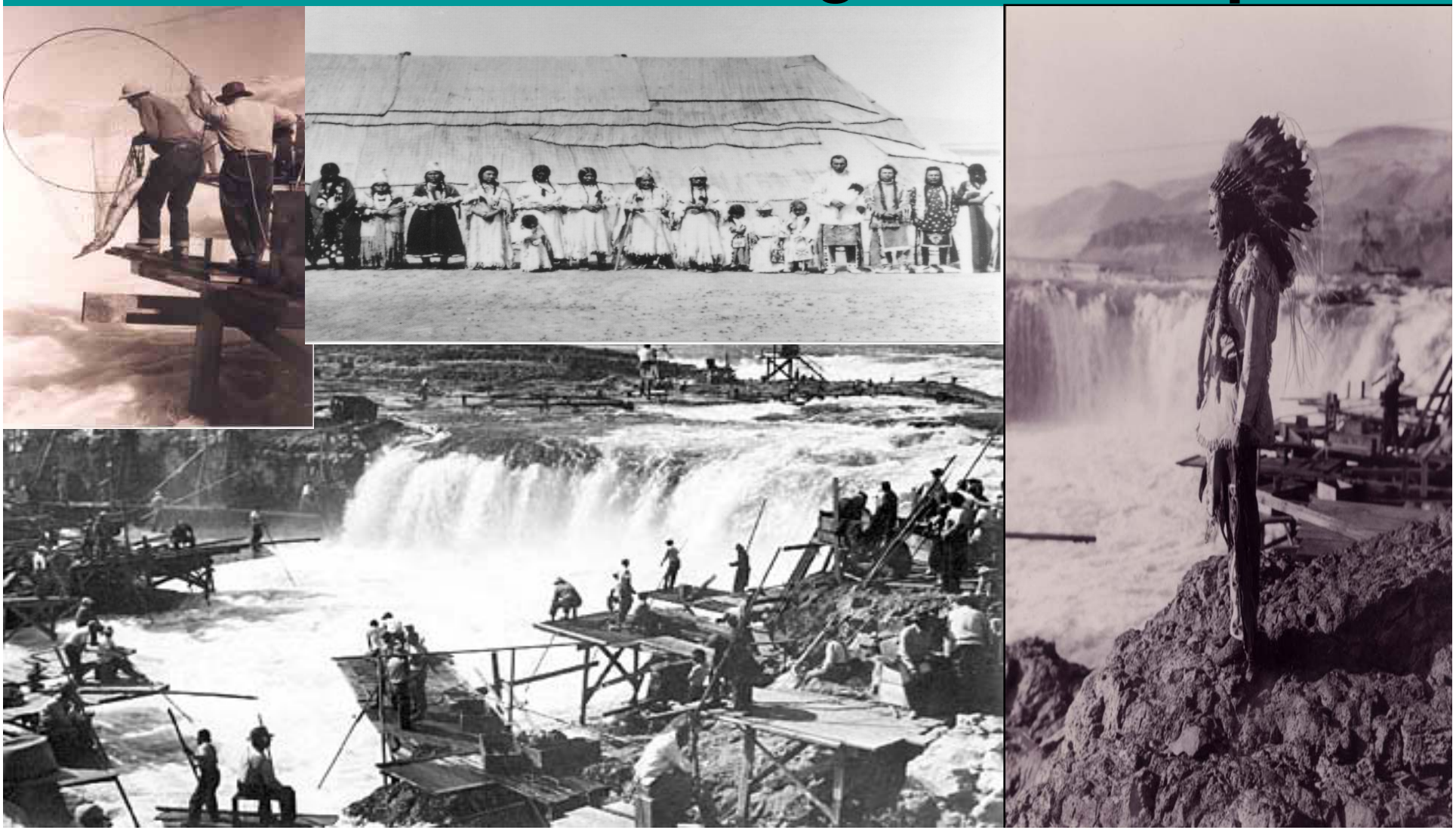
3. R.I.N.N.A. Representation of Indigenous peoples of North America

Presented by Rebecca Hawk, Sacred Breath Project, Yakama Nation Environmental Management Program,

Columbia River Toxics Reduction Group, September 30, 2008

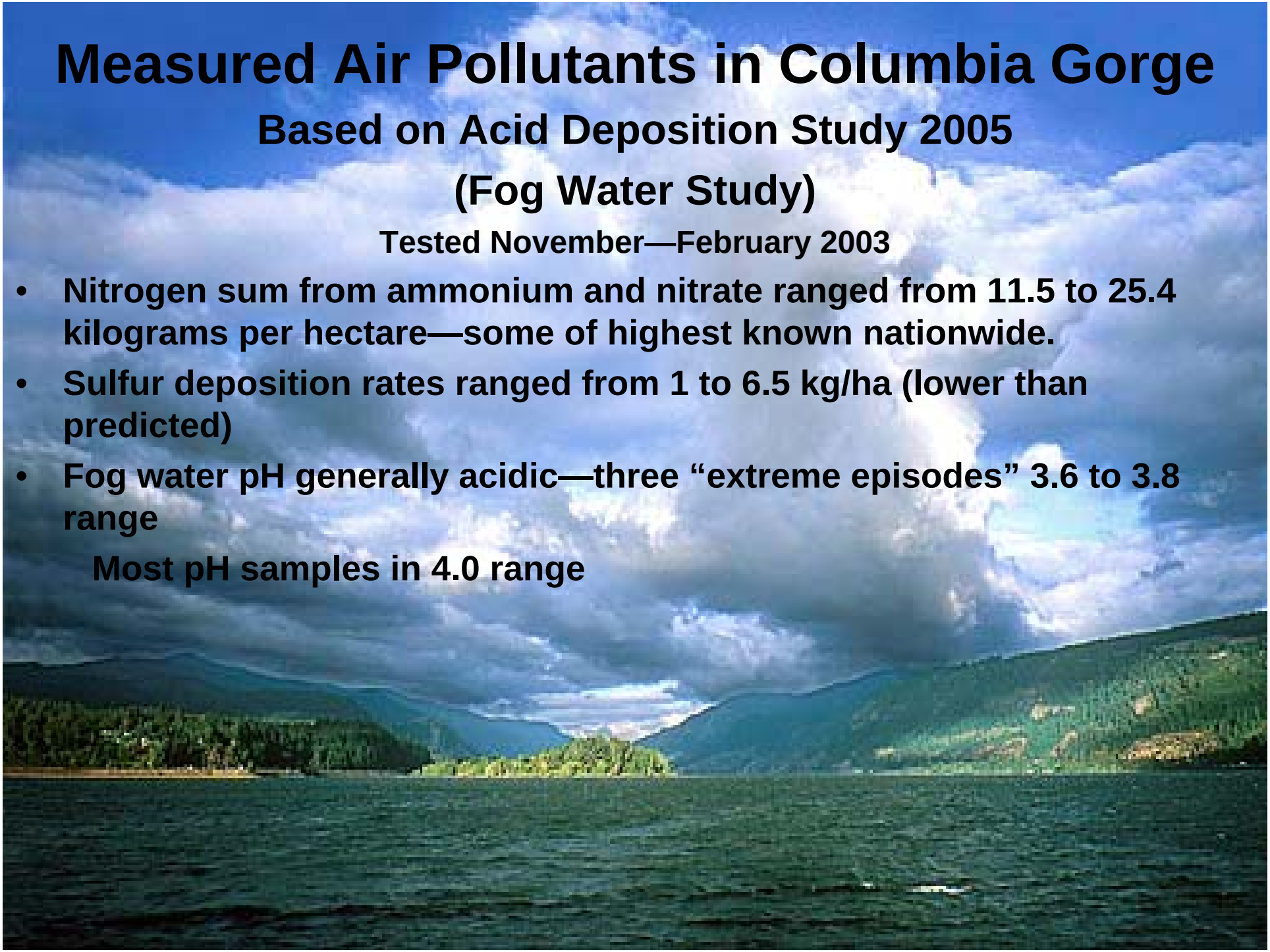
For copies of entire text of Letter by Ralph Sampson to UNEP Task Force, or additional information about the Sacred Breath Project contact R. Hawk via email: hushwit@hotmail.com or rhawk@yakama.com

From Time Immemorial it has been the Homeland of Multitudes of Indigenous People



Traditional Cultural ways Still Practiced, Taught to Youth

Impacted by Air Quality



Measured Air Pollutants in Columbia Gorge

Based on Acid Deposition Study 2005

(Fog Water Study)

Tested November—February 2003

- **Nitrogen sum from ammonium and nitrate ranged from 11.5 to 25.4 kilograms per hectare—some of highest known nationwide.**
- **Sulfur deposition rates ranged from 1 to 6.5 kg/ha (lower than predicted)**
- **Fog water pH generally acidic—three "extreme episodes" 3.6 to 3.8 range**

  Most pH samples in 4.0 range

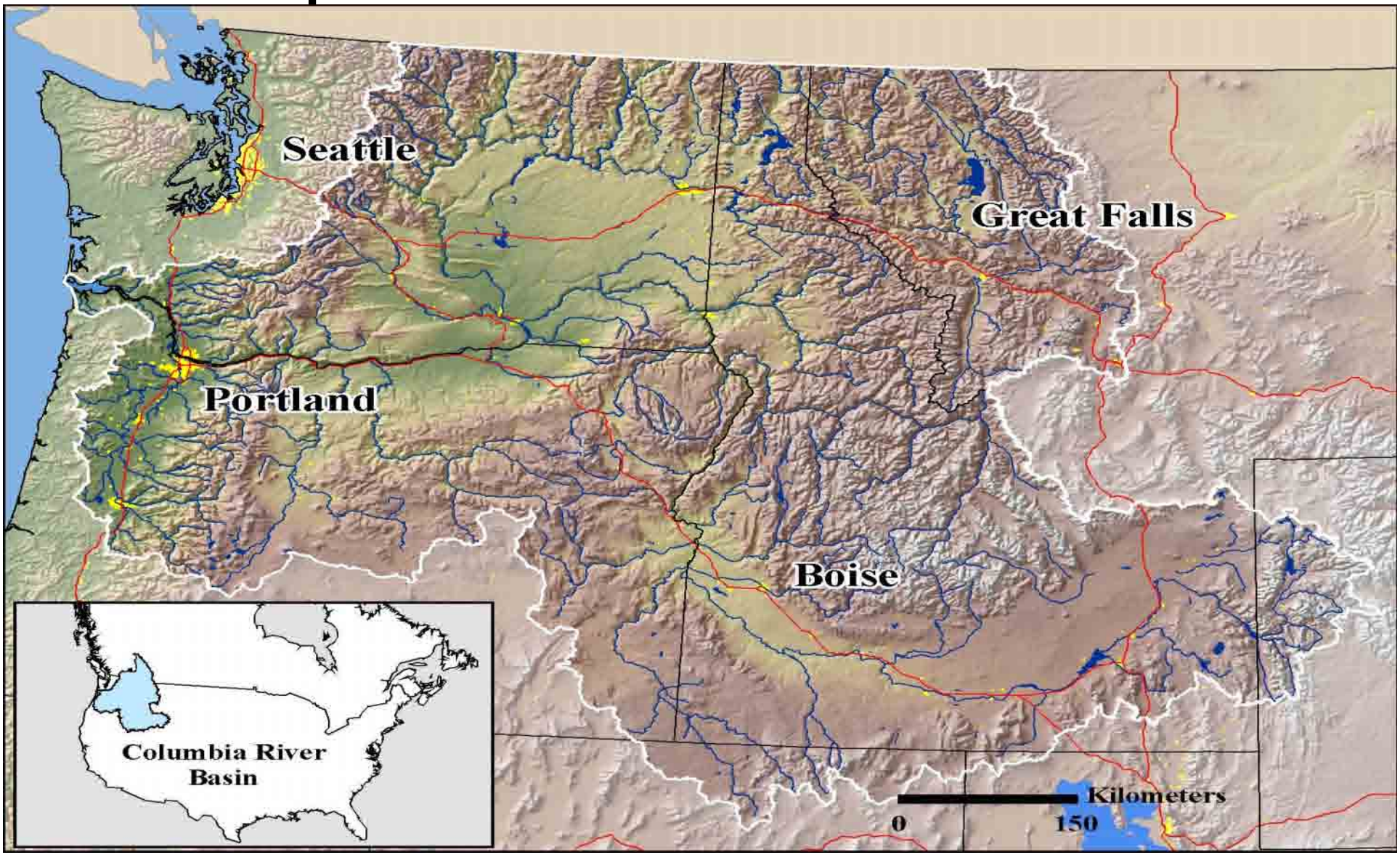
Lichen Research

1995 **Study—Air pollution has caused chemical changes in plant life in the Gorge. Lichen species that thrives on acidity in the air is growing on rock surfaces, choking the healthy life forms and causing damage to rock surfaces.**

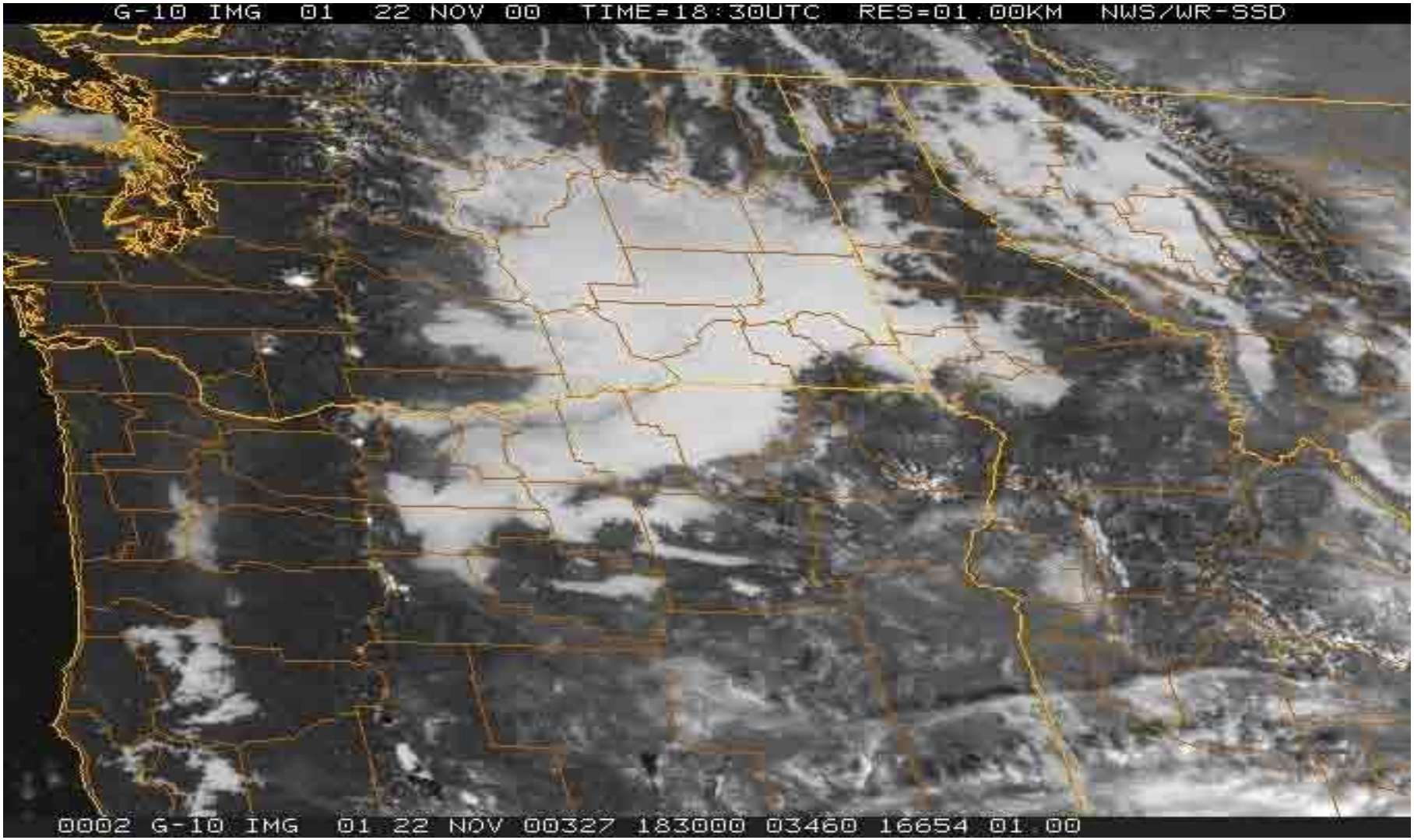
2005 **Update—It's Worse & still Eastern…. Impact analysis part of Rock Image Study.**

Atmospheric Deposition Inputs and Effects on Lichen Chemistry and Indicator Species in the Columbia River Gorge, USA, Fenn, et. Al., June 2006.

Columbia Basin Creates an Air Shed Between the Mountain Ranges that Traps Wintertime Air Inversions



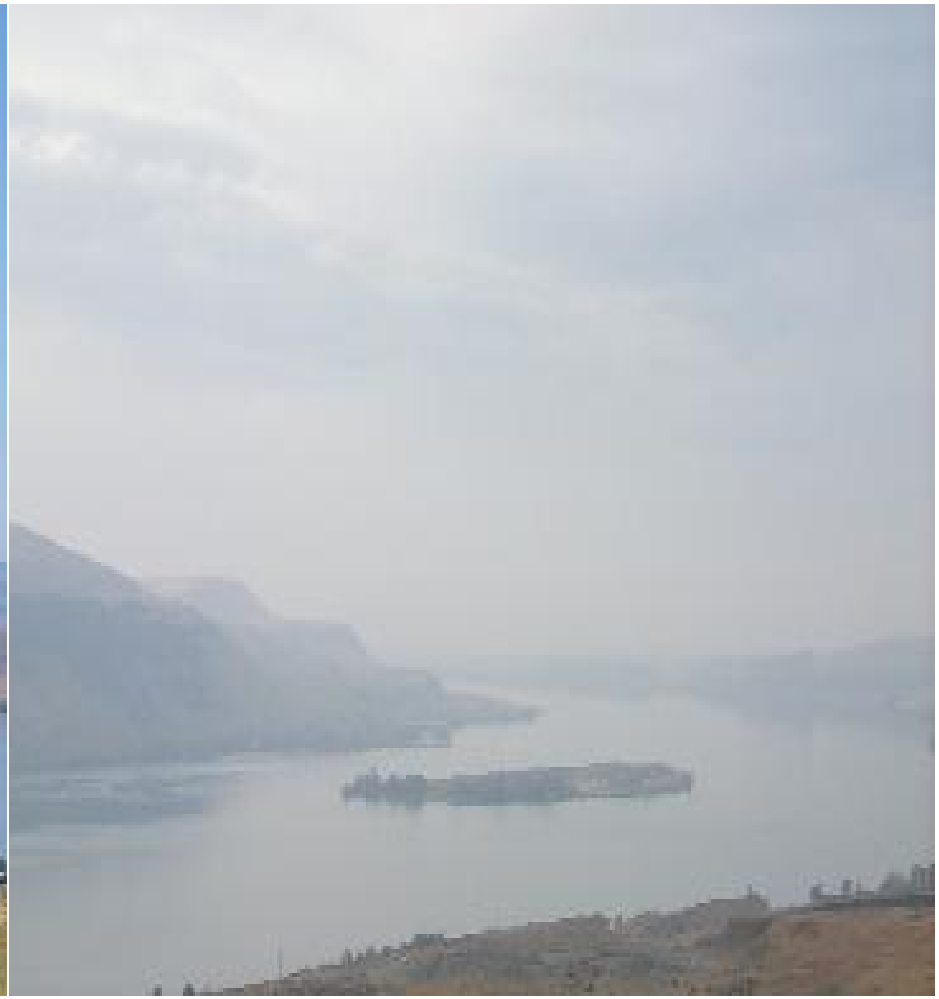
Columbia Basin Satellite Photo showing Cloud stagnation



The Scenic Area has a Problem:
Can You See it?
Visibility is impaired 95% of Time in the Gorge
Oxides from Nitrogen & sulfur and Particulate Matter

Fine Mass=5.1 ug/m3

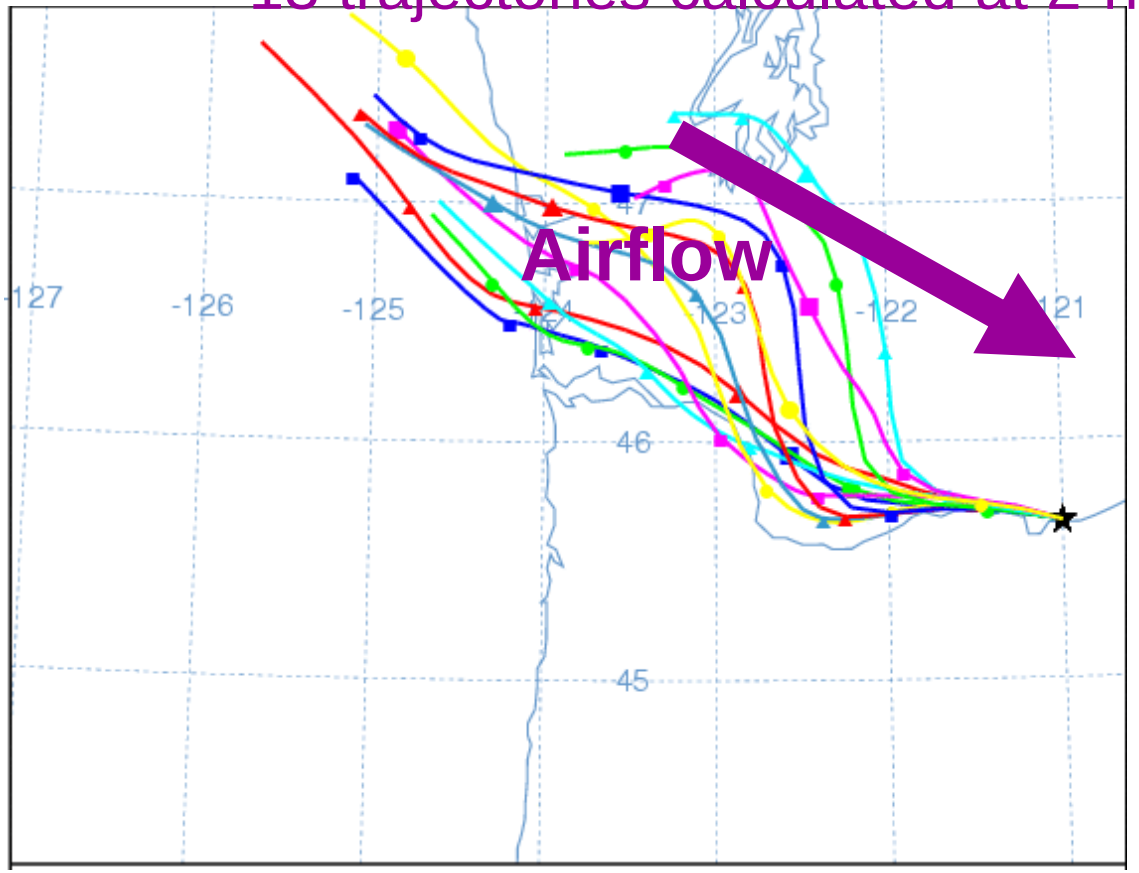
Fine Mass=34.7 ug/m3




Differing World Views-
What to Look at… What to do with the Information…
Traditional Knowledge and "Science"
Need to Supplement Each Other
❖Lichen Research—USDA FS
❖Acid Fog Deposition Study—USDA FS
❖Fish Consumption Survey— Tribes, EPA
❖Who is Polluting the Columbia Gorge—an Analysis of Wintertime Haze in the Gorge—
Sacred Breath
❖Gorge Air Quality Report—2008 ODEQ, SWCAA
❖Impact of PGE's Coal Fired Plant on Gorge AQ—
Sacred Breath
❖ Impact of Nitrogen Deposition on Rock Images–
Sacred Breath
04/16/2008 09:30 AM

Back trajectories for July 30, 2004

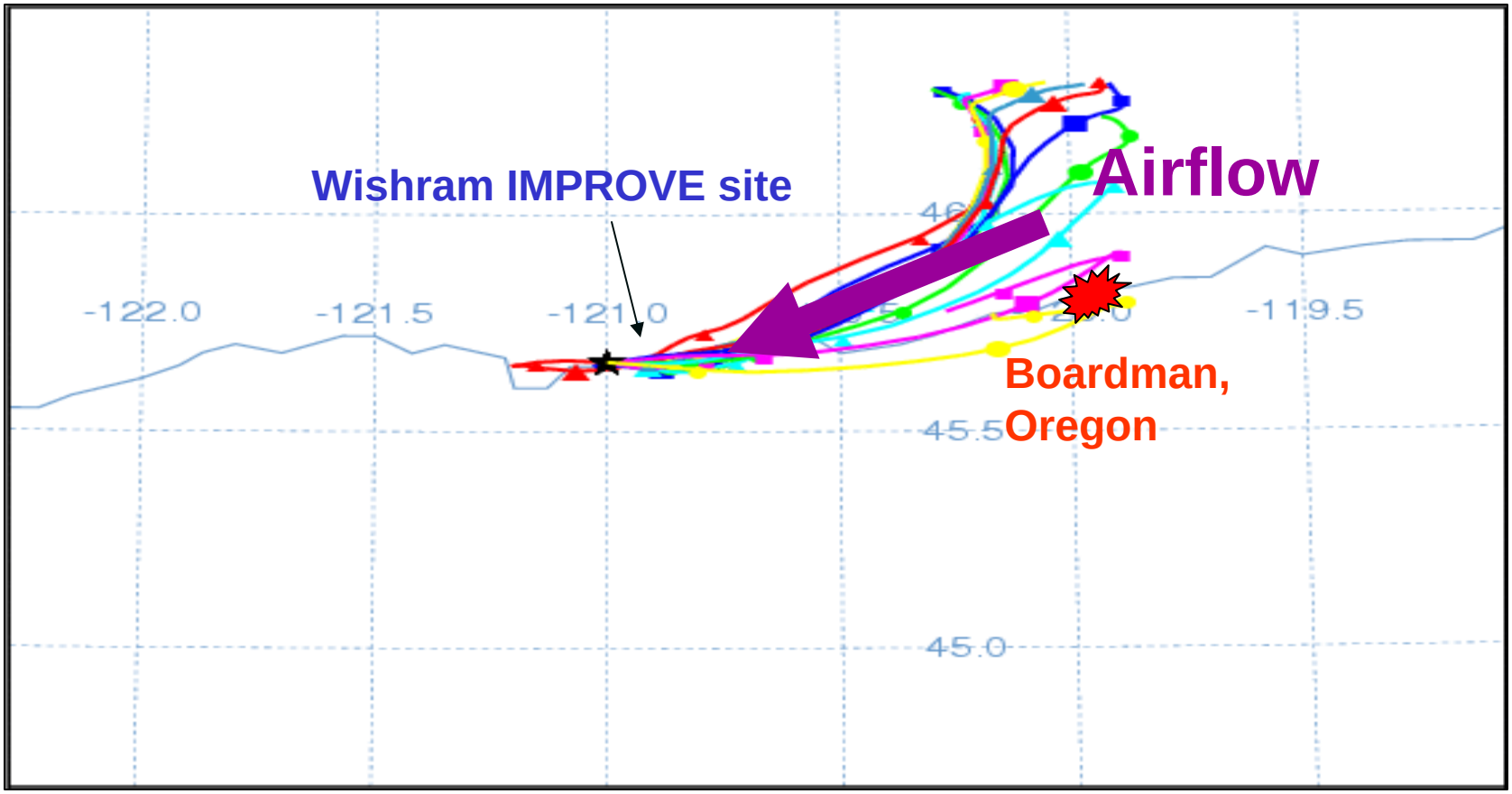
13 trajectories calculated at 2-hour intervals



Wishram

Measured PM2.5 at Wishram = 14.2 ug/m3

Back-trajectories to Wishram for November 8th, 2004



Measured PM 2.5 on this date = 26.0 ug/m3

Sources in the Eastern Gorge Significant Contributors to Pollution Load

Collaborative Words…

PGE's Coal Fired Power Plant Contributes 55.5% to the PM Concentrations on the worst wintertime loads… Analysis of Impact of PGE's Coal Plant to Gorge Wintertime Haze, March 2008

"Oregon (*Department* of Environmental Quality) has repeatedly suggested that no single dominant source is responsible for haze problems in the Gorge, and this study directly refutes that claim."

"….so based on… our analysis… The Gorge air is getting better…"
Klickitat County, September 2006

"The frequency of bad air days is not changing and the peak concentrations (of pollution particles) are not improving," he told the Columbia River Gorge Commission."
Dan Jaffe, *The Oregonian, September 2007*

World Views

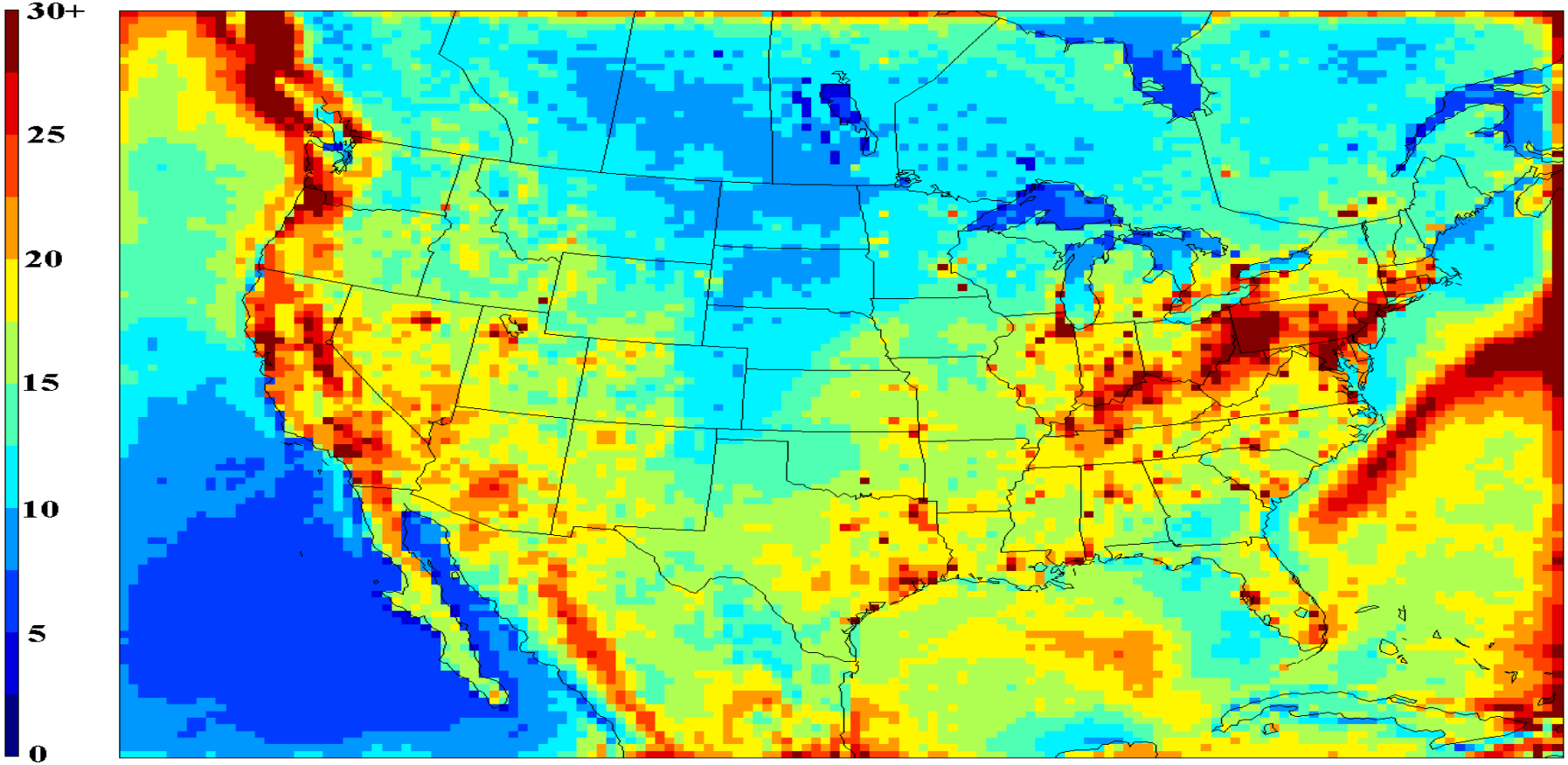
Traditional / Settlement

- **Stewardship of Resources / Ownership and Exploitation**
- **Wholistic Thinking / Compartmentalization**
- **Traditional Knowledge / Scientific Research**
- **A Sacred Trust / a Public Trust**

The Sacred Breath Project goes to Rome **Rome**

Simulated Total Hg Deposition for the CAMR Analysis

(micrograms per square meter)



New Data: 30% of mercury load comes from Asia on “worst days analyzed
13% on other days…. Univ. of Washington Monitoring Program

Sources of Mercury

- **Natural Sources**
- Volcano
- 50% Ocean (recycled)*
- Fires

- **Anthropogenic Sources**
  - **Fossil Fuels**
  - **Coal burning**
  - **Gold Mining**
  - **Cement Production**
  - **Nano Technology**
  - **Merc. Lamps & Batteries**

- **Impact of Climate Change**
- Water Vapor sources are increasing with Climate Change
- Fires

HTAP- Hemispheric Transport of Hazardous Air Pollutants

- Global Transport of Mercury Pollution

  Documented Transport from Asia (China) to West Coast

- **Characteristics of Mercury**
  - **Emissions may be "elemental"**
  - **Chemical Changes methylmercury**

    <u>Biomagnifying</u>, <u>Bioaccumulating</u>, <u>Persistent</u>

United Nations Environment Programme
Chemicals

UNEP

Persistent Organic Pollutants

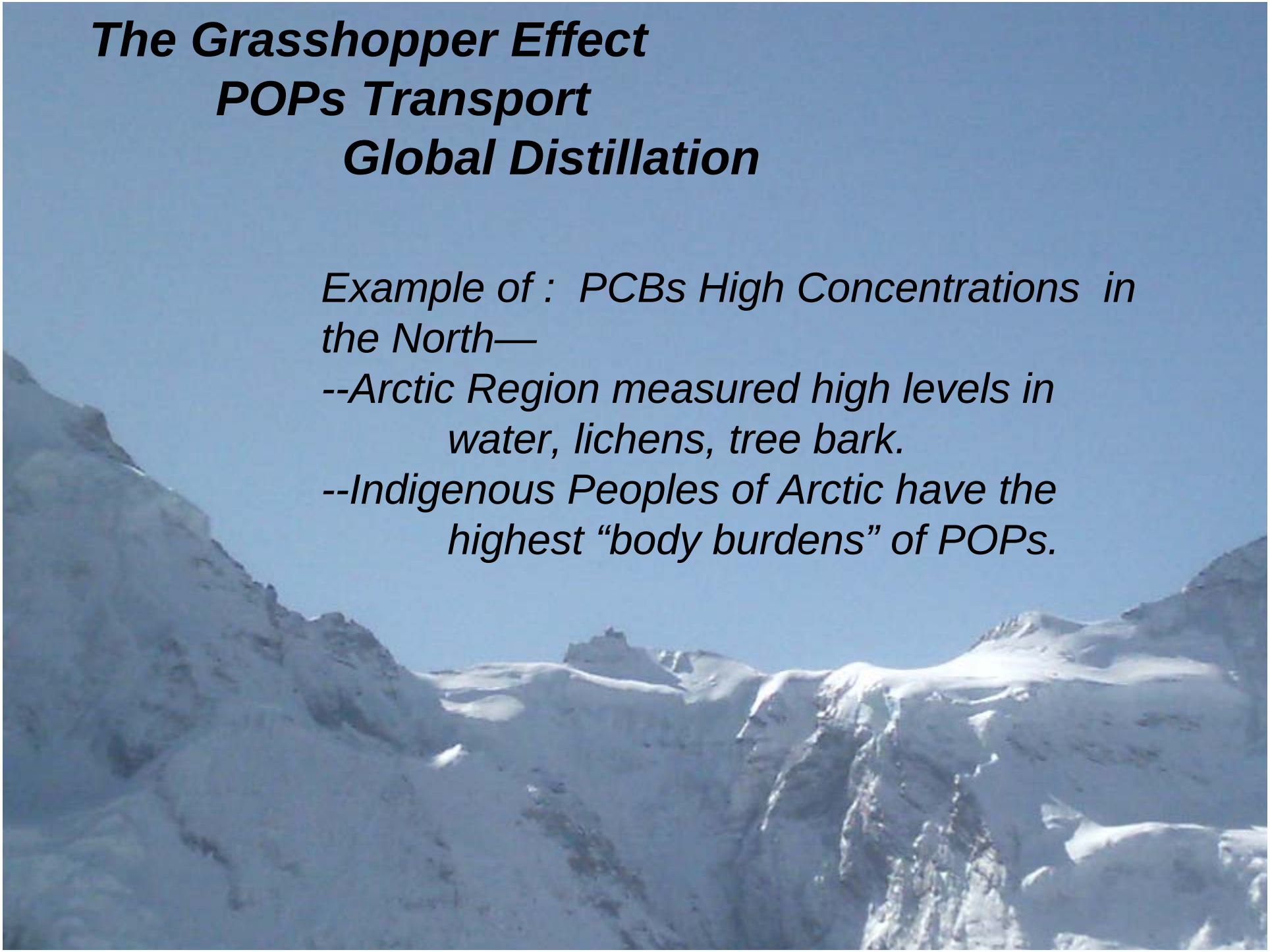
Mission—

- **To provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.**

- Persistent Organic Pollutants (POPs) are chemical substances that persist in the environment, bioaccumulate through the food web, and pose a risk of causing adverse effects to human health and the environment.

- With the evidence of long-range transport of these substances to regions where they have never been used or produced and the consequent threats they pose to the environment of the whole globe, the international community has now, at several occasions called for urgent global actions to reduce and eliminate releases of these chemicals.

- GEF POPs project on Laboratory Capacity
- Proceedings, Reports and Documents
- Information on POPs, their Alternatives and Alternative Approaches
- Global Monitoring of POPs
- PCB Activities
  PCDD/PCDF Activities
- POPs related GEF Projects



The Grasshopper Effect
POPs Transport
Global Distillation

Example of : PCBs High Concentrations in the North—

--Arctic Region measured high levels in water, lichens, tree bark.

--Indigenous Peoples of Arctic have the highest “body burdens” of POPs.

Human Health Impacts of Persistent Toxins

- Cancers
- Immune System Diseases and Disorders
- Neurotoxin related disorders and diseases
  - Autism
  - Learning Disabilities
  - Etc..
- Diabetes* (Diabetes and Persistent Organic Pollutants)
- Cardiovascular
- Lung Diseases and Disorders

“ONLY WHEN THE LAST TREE HAS BEEN CUT

AND THE LAST RIVER POISONED

AND THE LAST FISH CAUGHT

WILL WE REALIZE THAT WE CAN'T EAT MONEY.”

Lester Wahsise, Sr., Yakama Nation

Yakama Nation Tribal Council Chairman Ralph Sampson Jr.'s Letter is Presented

- Tribal Gov'ts of the U.S. have developed organizations to share information and build capacity to take active role in participation in Environmental Issues.
- We were once plentiful, have lost many, but proven we can surviv e against great threats and stresses against us. These threats are not just of the past. Our people now at great risk of survival by eating our traditional foods--fish, wild animals, roots, berries, medicinal plants.
- Our people are at greater risk than general population, yet U.S. policies ignore our level of risk and our cultural practices—Human Rights Issue.
- Our rights for land/water usage are dependent on the PLACES that have been designated as belonging to us.
- Contamination of our food, air and water supply from persistent pollutants is of grave concern to us—our people have high rates of cancer, immune diseases, lung and heart diseases, diabetes. Our children vulnerable to learning disabilities.
- What is happening to us will eventually happen to all segments of population.
- We have the sovereign right to protect these elements but we are smaller in number and our voice is not always heard. It will take leadership of all world leaders working together to reduce the impact of these pollutants to the world's health and well-being.

Presented to United Nations HTAP/POPs Task Force Meeting April 2008