



Tribal LifeLine™ Project

Modifying the Risk Assessment Model for Relevance to Unique Tribal Scenarios

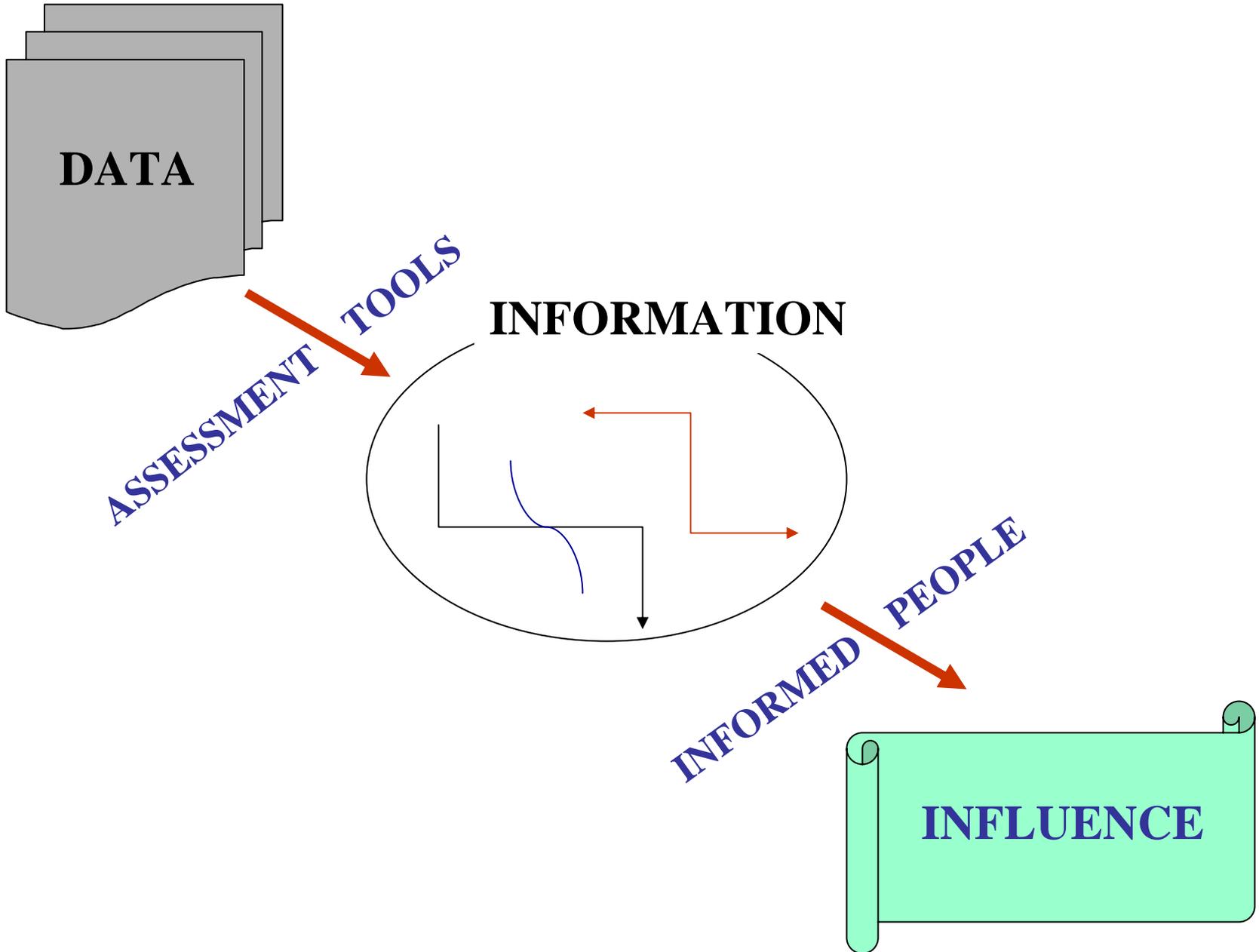
Introductory Training: Using Models In Risk Assessment

Presented by

Elizabeth Resek, OPPTS

Christine Chaisson, LLG

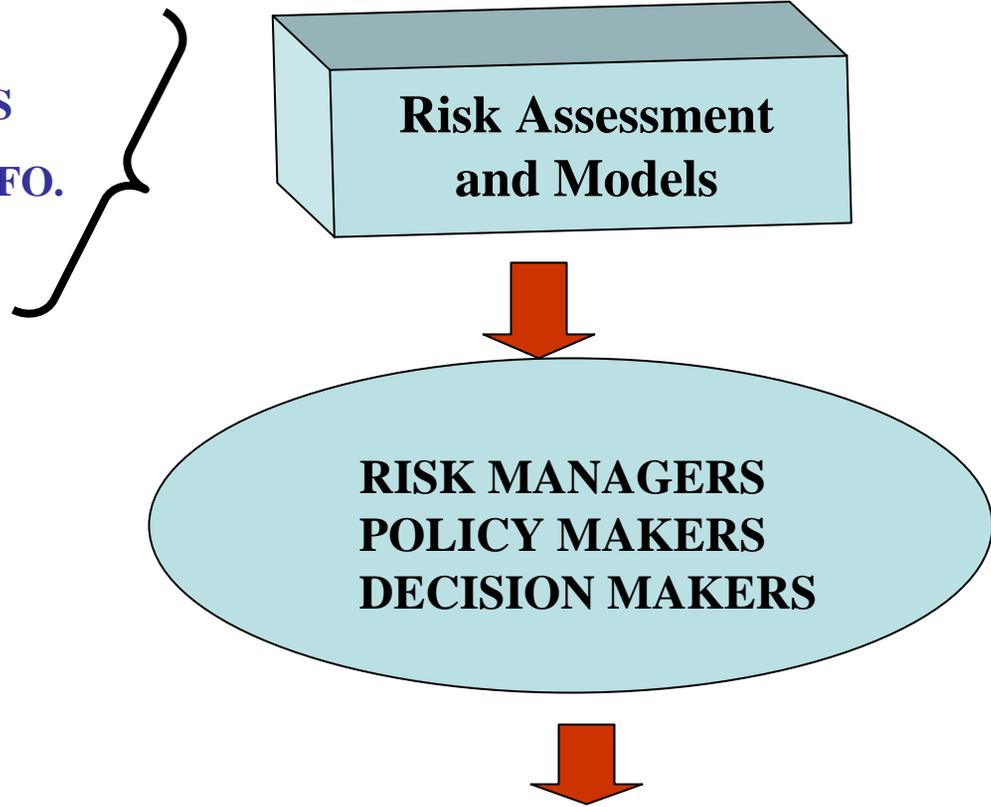
Anne Marie Chaisson, LLG



DATA

ASSUMPTIONS

PREPARED INFO.



- **“ACCEPTABLE LEVELS OF CONCERNS” IN LAND, AIR, FOOD, WATER**
- **PRIORITIES FOR FUNDING RESEARCH/MONITORING**
- **FUNDING DECISIONS FOR HEALTH PROGRAMS**
- **PERMITS FOR LAND USE / PESTICIDE USE**
- **PRIORITIES FOR CLEAN-UP**
- **MANY POLICIES / PERSPECTIVES**

Discussion

- **Use of Models for Human Health Risk Assessment**
- **Why Tribal LifeLine?**
- **EPA's Unique Relationship with Tribal Governments**
- **Focus on Alaska Native Villages**
- **Collaboration**

Previous Software Calculates Possible Chemical Exposures from the “General Population”

- **National Center for Health Statistics**
- **U.S. Census**
- **Third National Health and Nutrition Examination Survey**
- **American Housing Survey**
- **National Human Activity Pattern Survey**
- **The Continuing Survey of Food Intake by Individuals**

Why?

The LifeLine Group

An Introduction...

Not-for-profit organization [501(c)(3)] with mission to:

- Develop **technically excellent tools** for characterizing exposures to chemicals in diet, residences, consumer products, and occupational exposures and resulting risk,
- Make those tools **available to all** interested parties (distributed free)
 - Committed to developing **open tools** (no trade-secret model components—all working elements described in open technical documentation=no “black box” approaches).

Existing Situation and Project Objective

Federal (some state, some international) risk-based decision making utilizes models to transform information about contaminants in the environment to exposure and risk estimations for a defined population

Until now, all models considered only the exposure opportunities presented to individuals of a commercial, “general US” (48 states) population

Objective: Making the tribal communities “visible” and considered when regulators make decisions that affect the health of the tribal communities and their environment.

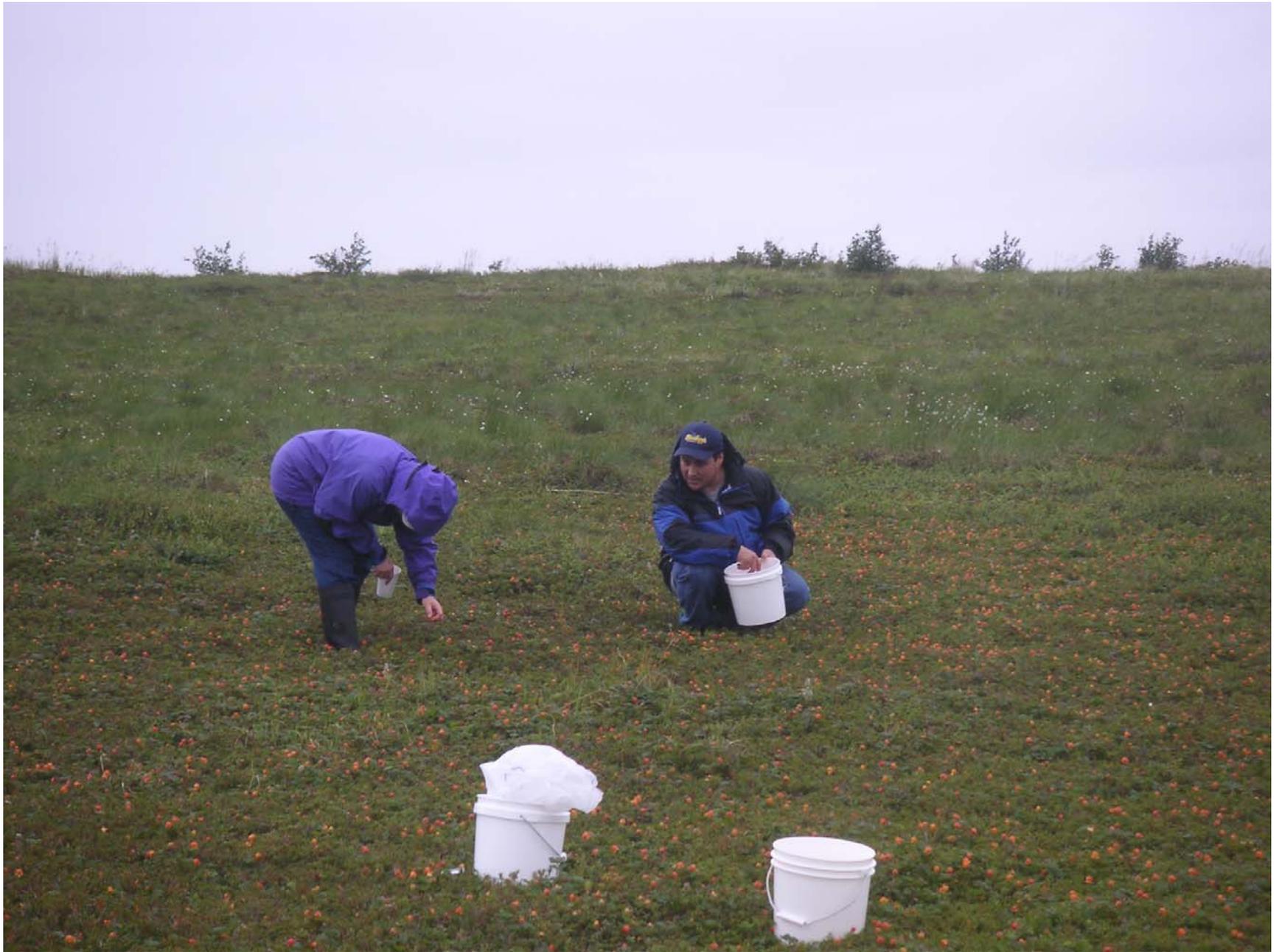
Existing models used at EPA for risk-based decision-making

- Aggregate (all sources)
- Cumulative (multiple chemical of 1 class)
- Probabilistic
- Representative of 48-states general population and age/gender/race/region / urban status subgroups
- NO unique population groups included

Unique Opportunities for Exposure

- **Subsistence Diets**
- **Housing**
- **Water Sources**
- **Cultural Activities**

Why?





Data Set: Sub Arctic Freshwater Pt

Annual Residues

Season Selected

Annual

Spring

Summer

Fall

Winter

Inputs

Outputs

Translate to Food Residues

Residues Factors

| | Code | Crop Group | Code | Commodity | Code | FoodForm | Residue #1 (ppm) | Residue #2 (ppm) |
|----|------|---------------|------|-----------------------|------|----------|------------------|------------------|
| 1 | 1 | Berries | | All | | All | | |
| 2 | 2 | Nuts | | All | | All | | |
| 4 | 3 | Oil | 7 | seal | | All | | |
| 5 | 3 | Oil | 8 | beluga | | All | | |
| 6 | 3 | Oil | 9 | oogruk (bearded seal) | | All | | |
| 7 | 3 | Oil | 10 | walrus | | All | | |
| 8 | 3 | Oil | 11 | whale | | All | | |
| 9 | 3 | Oil | 12 | corn | | All | | |
| 10 | 4 | Shortening | | All | | All | | |
| 11 | 5 | Sugar | | All | | All | | |
| 12 | 6 | Fish | | All | | All | | |
| 13 | 7 | Water animals | | All | | All | | |
| 15 | 8 | Game mammals | 36 | carribou | | All | | |
| 16 | 8 | Game mammals | 37 | beef | | All | | |
| 17 | 8 | Game mammals | 38 | bear | | All | | |
| 18 | 8 | Game mammals | 39 | beaver | | All | | |
| 19 | 8 | Game mammals | 40 | deer | | All | | |
| 20 | 8 | Game mammals | 41 | mink | | All | | |
| 21 | 8 | Game mammals | 42 | moose | | All | | |
| 22 | 8 | Game mammals | 43 | muskrat | | All | | |
| 23 | 8 | Game mammals | 44 | rabbit | | All | | |
| 24 | 8 | Game mammals | 45 | squirrel | | All | | |
| 25 | 8 | Game mammals | 46 | elk | | All | | |
| 26 | 9 | Bread | | All | | All | | |
| 27 | 10 | Vegetables | | All | | All | | |
| 28 | 11 | Sea mammals | | All | | All | | |
| 29 | 12 | Fowl | | All | | All | | |















EPA's Unique Relationship with Tribal Governments

- **Government-to-Government Relationship**
- **EPA Policy (1984)**
 - American Indian Environmental Office
 - Tribal Operations Committee
- **OPPTS Tribal Strategy (2004)**
 - Tribal Pesticide Program Council
 - Forum on States and Tribal Toxics Action

Alaska Native Villages

- **Greater Amount of Subsistence**
- **Cancer Concerns**
- **Open Dumps**
- **DOD Abandoned Military Sites**
- **Total of 5-6 Biogeographical Areas Needed to Characterize Alaska**
- **Complete Module**

Collaboration

- **Tribes and Tribal Organizations**
- **Health Canada**
- **Bureau of Indian Affairs**
- **Smithsonian**
- **Department of Defense**
- **Health and Environmental Organizations**
- **EPA Office of Water**
- **EPA Office of Research and Development**

Introduction and Training

Objective:

Overview of Aggregate (multiple sources of the same chemical) Risk Assessment Technique

Introduction to Dietary Record Generator – applying information about tribal diets to the risk assessment process

Introduction to Tribal LifeLine™ Exposure and Risk Assessment Software

Overview of Future Work, Training/Support Plans – Listening to You !

Part 1

What Goes Into a Risk Assessment??

**Chris Chaisson,
Toxicologist/modeller
Director, The LifeLine Group**

Using Your Information About Diets

**Annie Chaisson
Nutritionist, Dietitian**

Part 2

Using the Tribal LifeLine™ Exposure and Risk Assessment Software

Interpreting the Results

What Can It Answer

What Can It NOT Answer

Continuing Development: Making the Models Reflect the **Real World** of Tribal Communities

Making the Models **Available, Useable,**

Tools for Tribal Communities

Training, Support

Listening to YOU !!