

*Protocol Development for Tribal and
Community Assessment of
Multimedia Impacts of Pollutants*

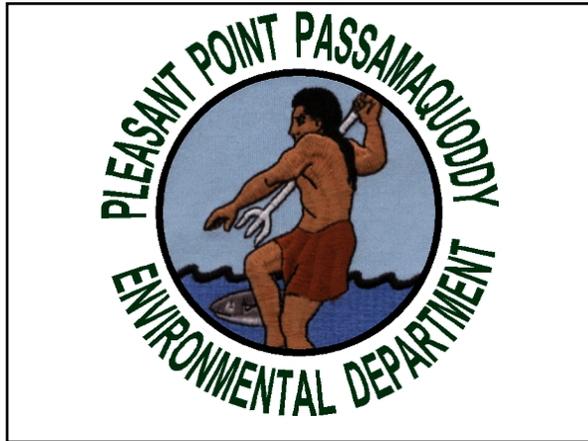
Project Leaders:

*Christine Davis. OAQPS/Climate,
International and Multimedia Group*

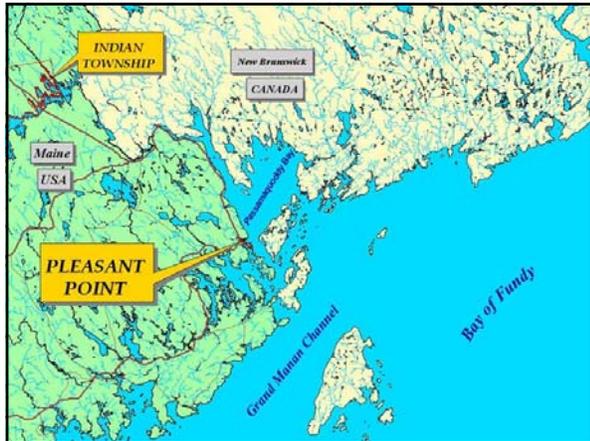
*Ann Williams. ORD/NHEERL/Human
Studies Division*

Steve Crawford. Passamaquoddy Tribe

Tony Bynam. Portage Environmental









Passamaquoddy Tribe Vital Statistics

- *Population: 1976*
- *Life Span: 53 years*
- *Unemployment: 62.1%*
- *Causes of mortality:*
 - *Accidents*
 - *Drug/alcohol abuse*
 - *CVD*
 - *Diabetes*

Goals, Objectives, Deliverables

- *Identify potential air toxins to community from plume studies*
- *Sample sustenance foods for pollutants*
- *Determine risk level to Tribe*

Identify Toxins: Mine Existing Data

- *RTI International, Research Triangle Park.*

- 1. Point Sources*
- 2. Non-point Sources*
- 3. Mobile Sources*

Modeling:

*AERMOD: (AERMET and AERMAP)
met air preprocessor, terrain preprocessor*

*HYSPLIT
Trajectory Model*

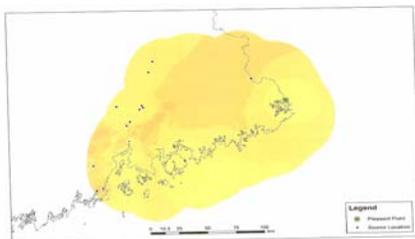


Figure 42. Mercury concentrations within 50 km of HUC8 drainage basin

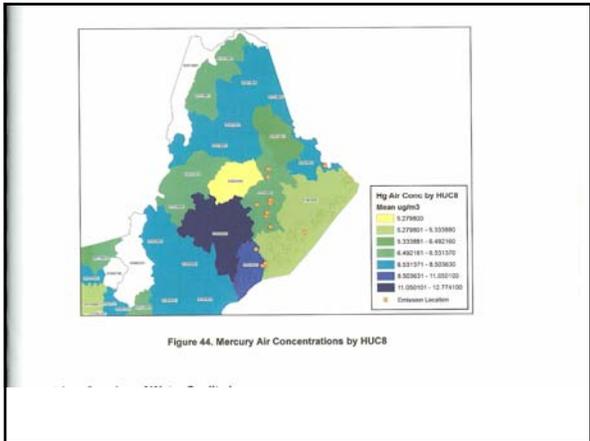


Figure 44. Mercury Air Concentrations by HUC8

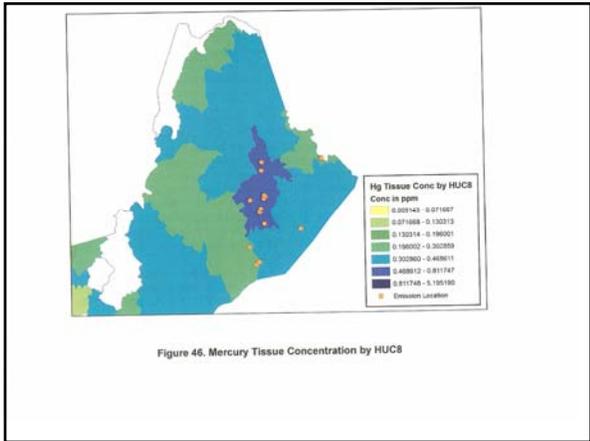


Figure 46. Mercury Tissue Concentration by HUC8

Legacy Sources for Sediment Data

Table 2: Data Resource Name and Pollutants for Sediment

Data Resource Name	Pollutants				
	Cadmium	Lead	Mercury	PCBs (Total)	PAHs (Total)
National Sediment Inventory	X	X	X	(*)	(*)
NOAA Mussel Watch Database	X	X	X	(*)	(*)
EMAP National Coastal Assessment (Download Web site pre-2000)		X	X	X	X

(*) Information contained in these data sources was reported primarily for specific PCB congeners or specific PAH

Fish Sampling

- *Results of the Toxics Monitoring Program:*
 - *Final Report: Identifying Pollutants in Species Regularly consumed by Native Americans in the Passamaquoddy Bay Region.*
 - *FY 1997 EJ project: March 9, 2001*
 - *Lobster, soft-shelled clam, cod, sea scallop.*
 - *Heavy metals, dioxin.*
 - *Composites not correctly sampled, UMO Water resources lab failed QMP.*
 - *EPA Region 1 asked that the study be repeated, additional \$20 k provided.*

Fish Samples Revisited

- *QAPP approved Dec. 13, 2006.*
Region 1, EPA Quality Assurance Chemist Steve DiMattei
- *Heavy metals, Hg, dioxins/furans, PCB's*
- *Lobster, mackerel, scallops, clams, porpoise*
- *2 samples; one following lab protocol, one representative of tribal food.*

Fish Consumption CAPI Survey

- *Computer Assisted Personal Interview (CAPI) software*
- *Developed by EPA Region 10, for Suquamish Nation*
- *Survey consists of:*
 - *24 hr recall section*
 - *Seasonal Consumption recall*
 - *Children's consumption*
 - *general section, how consumption changed over time, tribal gatherings, etc*

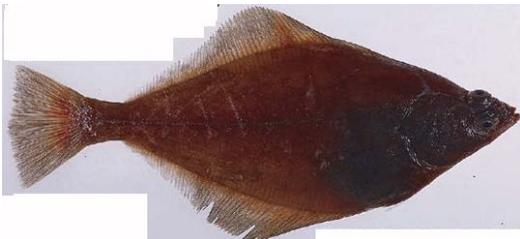
CAPI modifications

- *Northeast coast diet*
- *Software modifications:*
 - *photos of fish*
 - *photos, weights of pre and post-cooked portions.*
 - *historic consumption*

Scallop



Flounder



Mackere1





Historic Consumption Confounds

- *Memory and statistical rigor*
- *1979*
 - *Land Claims Settlement Act*
 - *Transition from wards of State towards sovereignty*
 - *dramatic change in lifestyle*
 - *Fish consumption advisories*

Bureaucratic BS

- *Non-compete grant; enter Portage*
- *\$75k down to 35k down to 13k to Tribe*
- *Health and Safety Plan for sampling*
- *IRB for survey*
- *IMB concerns, survey funding*

Deliverables

- *Identify Pollutants of concern from multimedia sources in Downeast Maine*
- *Sustenance food contamination levels*
- *Fish consumption survey completed*
- *Re-Evaluation of fish consumption advisories, specifically in regard to selenium*

The Goal:

To Improve the Health and Vitality of the Passamaquoddy Tribe

