# Can passive sediment samplers predict clam contamination?

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## Polycyclic aromatic hydrocarbons (PAHs)

- Products of combustion, such as:
  - Fires
  - Fossil fuels
  - Car exhaust
- Health concerns associated with ingestion



#### Concern about clam contamination

 Concern about potential clam contamination on Swinomish and Samish Tribal beaches (near Anacortes, WA)



• Nearby oil refinery

### Passive sampling

• Passive sampling

 Membrane takes up similar contaminants as shellfish

#### Passive Sampling Device







#### Passive sampling and shellfish

Forsberg 2014

 used passive
 sampler data to
 predict PAH levels
 in crayfish (right)

Phenanthrene



#### Study Aim and hypothesis

• **Specific Aim** 3 of this Superfund Research Program's Project 4:

Develop PSD-bioaccumulation models that can predict chemical load in aquatic tissues with useful accuracy on the basis of measured PSD extracts.

• **Hypothesis:** Passive samplers can be used to predict levels of organic contaminants in clams with useful accuracy

### Planning (2012-2014)

- Researchers from OSU, Swinomish and Samish worked together to identify 4 sampling sites to sample butter clams
   Sampling delayed due
  - Sampling delayed du to tides
- Data sharing agreements finalized between OSU and each Tribe



#### Clam Sampling (Fall 2014)









#### Sediment sampling (Fall 2014)











#### Sample Processing



- Passive samplers have been cleaned and extracted
- Clams have been organized in the lab

#### What's next?

- Analyze sediment samplers
- Process and analyze clams
- Build models
- Communicate results
- Tribes own data





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  - Help locating sampling sites
- Rosie James and Bill Bailey of the Samish Indian Nation
  - Clam-digging expertise
  - Help locating sampling sites
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#### Thank you! Questions?

