DEQ
State of Oregon
Department of
Environmental
Quality

Update on Willamette Basin Mercury TMDL

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Overview of TMDL Process

- Identify water quality concerns
- Identify sources and conditions contributing to concerns
- Link sources and conditions to water body
- Calculate load reductions to restore water quality

Mercury TMDL Team

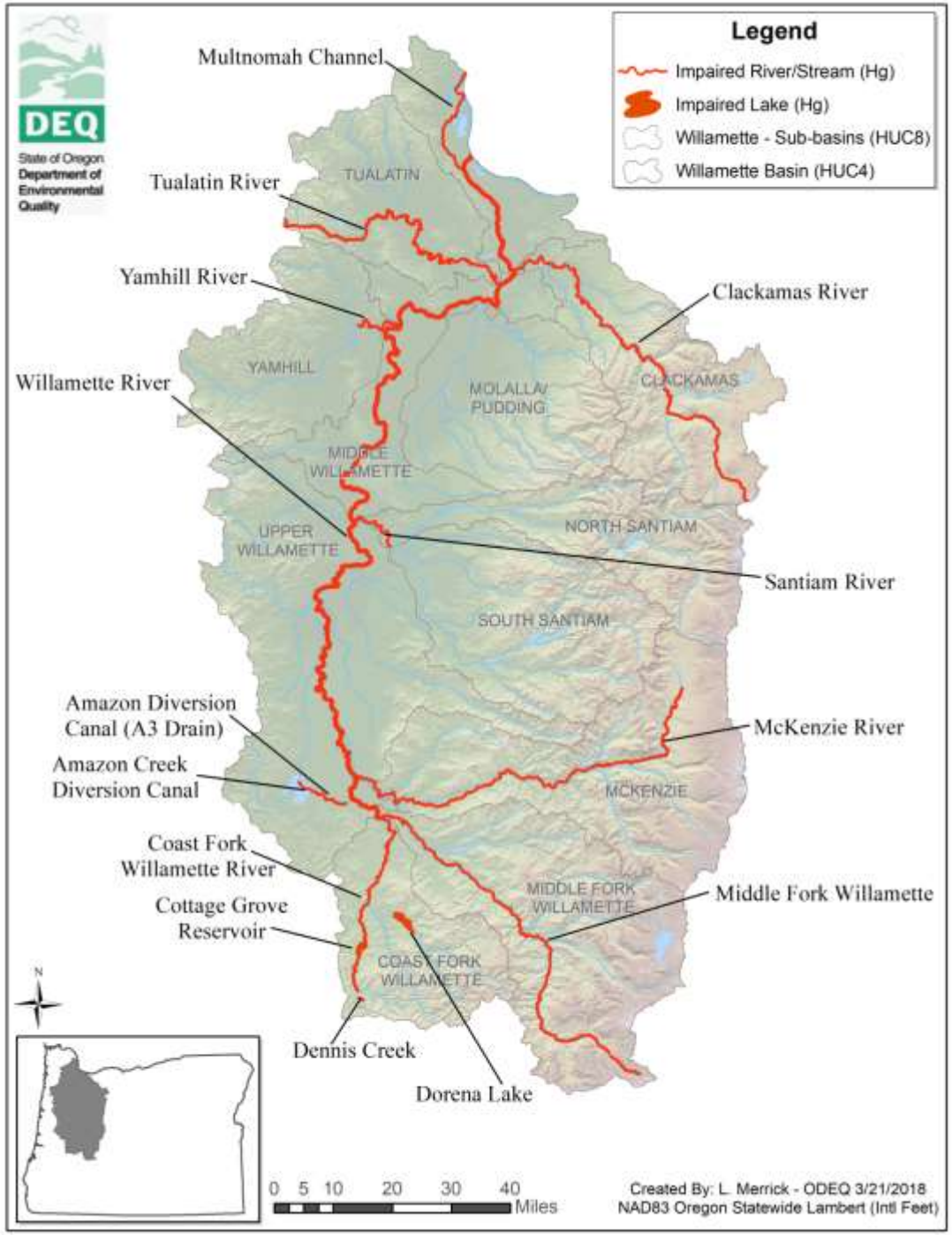
- Advisory Committee: Seven meetings to date
- EPA and DEQ team with contractor support
- DEQ team:
  - Paula Calvert (Project Manager)
  - Priscilla Woolverton
  - Andrea Matzke
  - Kevin Brannan

Mercury Standards to Meet

Develop TMDL to meet WQ standards for protection of human health and aquatic life

- fish/shellfish criterion (2011) = 0.040 mg/kg
  - Allows safe consumption of up to 23 – 8oz meals/month
- water column chronic criterion = 0.012 ug/L

Mercury Water Quality Impairments Across Basin



Technical Approach

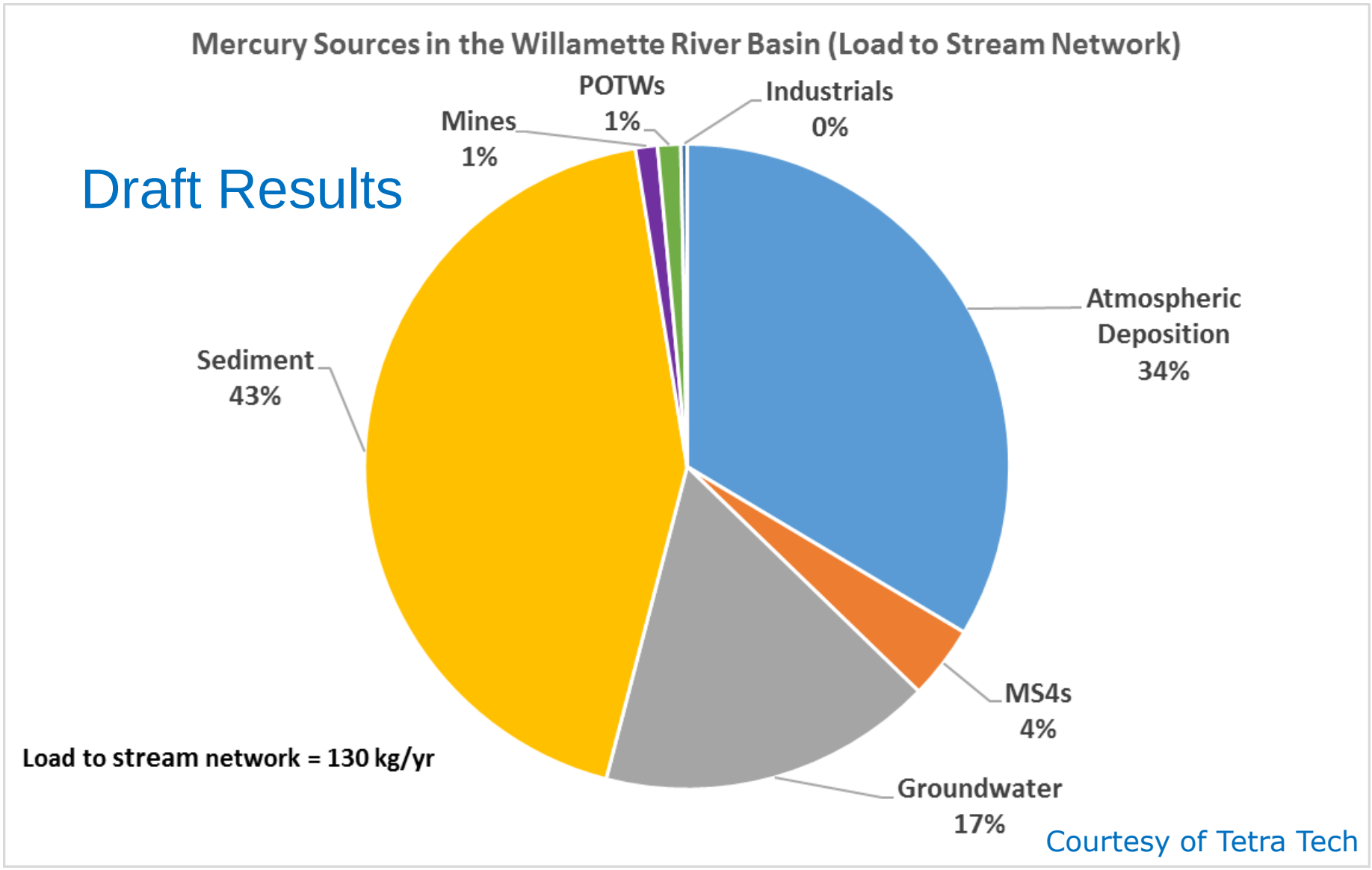
Objective: Link sources of total Hg to meHg in fish

- meHg is bioaccumulative
- Potent neurotoxin: Primary human risk is from consuming fish/shellfish with high levels of meHg.

Technical Approach

Three Components:

- Mass Balance Model
  - Link Hg sources in watershed to water concentrations—both point sources and nonpoint sources
- Mercury Translator
  - Link total Hg to meHg
- Food Web Model
  - Links Hg in environment to Hg contamination in fish



Note: A majority of the sediment and groundwater loads ultimately originate from historic atmospheric deposition of mercury.

Draft Modeling Results

- To meet tissue criterion, instream total Hg water target = **0.14 ng/L** (0.00014 ug/L)
  - ➢ based on northern pike minnow BMF (conservative assumption)

- Draft results indicate large % total Hg reductions needed to meet instream water target (calculated for 12 8-digit HUCs)

Management Measures

- Majority of Hg originating from air deposition to land surfaces
- “Controllable” Strategies:
  - NPS—reduce erosion to streams
  - PS—variances, mercury minimization plans
- Designated Management Agencies: ODA, ODF, ODOT, cities, counties, BLM, USFS, ACOE, etc.
- Water Quality Management Plan not yet completed

Wrap Up

- Litigation deadline: April 2019
  - EPA and DEQ request for extension
- Public Comment: Winter
- For more information:

https://www.oregon.gov/deq/wq/tmdls/Pages/willhgtmdlac2018.aspx

Story Map Discussion

What key partners, activities, and efforts are missing?

http://bit.ly/WWTRPStoryMap

Where Are We Going?

Partnership Principles:

- to compile existing watershed contamination data and identify data gaps;
- to describe existing efforts, and evaluate the efficacy of these programs;
- to investigate potential upstream sources of contamination to the Portland Harbor Superfund site, considering any data gaps identified; and
- to identify new strategies to reduce contaminant loading.