Road Salt Pollution

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PARSA
Pennsylvania Road Salt Action

Photo Jennifer L

Agenda

1. Introduction of PARSA and its goals
2. Causes and impacts of road salt pollution
3. Best management practices
4. Questions

Review of PARSA Goals

- Develop protocols for talking to municipalities and large landowners about winter salting.
- Create a central resource of high-quality materials for advocacy
- Work with state lawmakers to address road salt overuse.
- Encourage PennDOT to emphasize road salt reduction in Municipal trainings
- Initiate a Chapter 23 Petition Process asking EQB to develop a water quality standard for Chlorides, protective of aquatic life.
- Create a state-wide training for private contractors

Pennsylvania Road Salt Action

Statewide working group organizing actions needed to reduce salt pollution

Statewide Network of Partners working locally and in coordination statewide.

- Advocate to municipalities, property owners etc.
- Contribute State-wide calls to action
- Educate locally about road salt impacts and overuse- Hearts and Minds

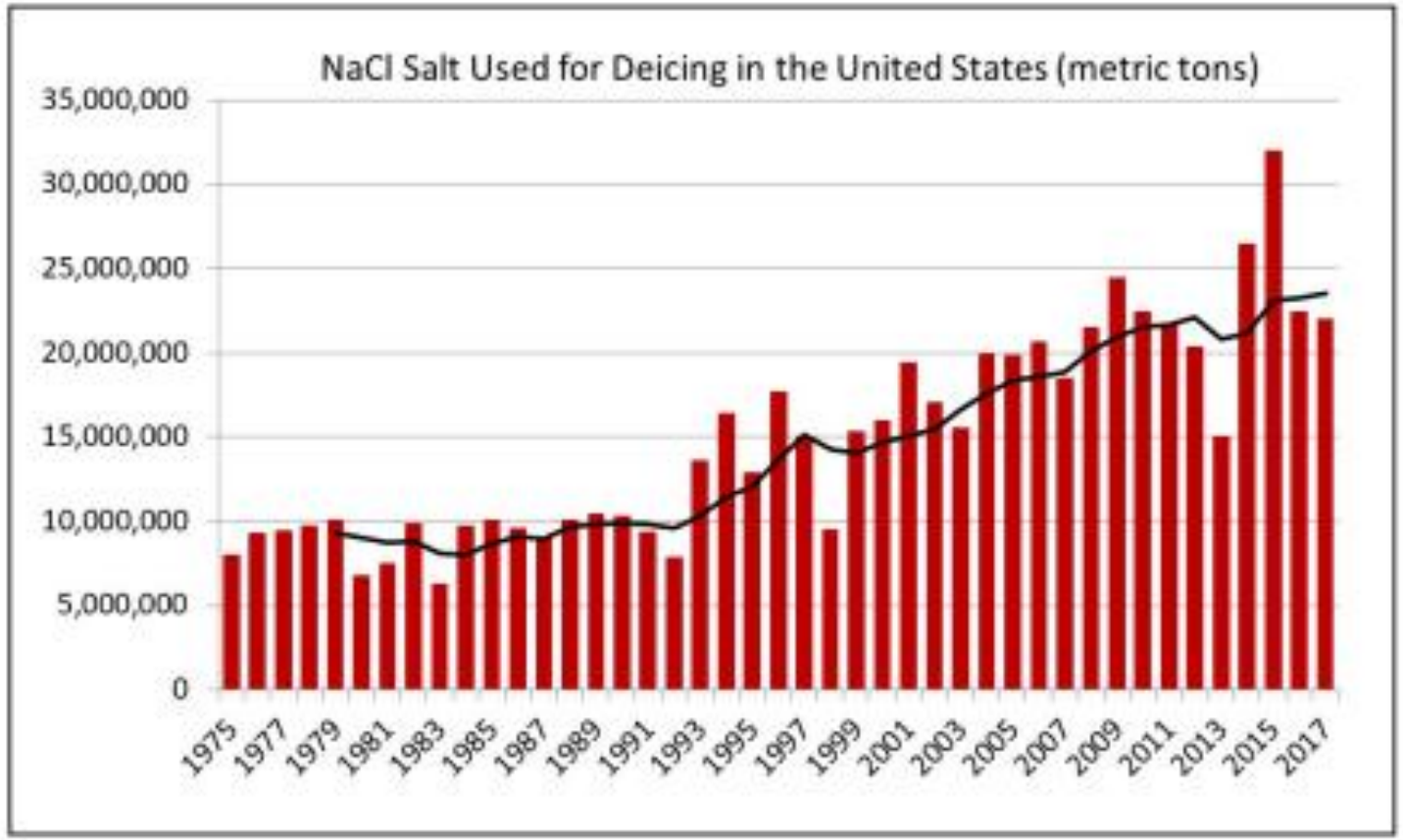
PARSA Resources

- **Working Group Documents**
  Meeting minutes, slide decks, chloride data
- **Outreach Materials**
  Facebook posts, letter-to-the-editor template, township outreach questionnaires.
- **Chloride Trend Graphs**
  Long-term creek trends; custom graphs available
- **Salt Education Slide Decks**
  Ready-to-use presentations with graphics and space for local data.
- **Property Manager Resources**
  Trainings, contracting guidance etc.

https://www.littlelehigh.org/salt-deep-dive

Causes and Impacts of Salt Pollution

Road salt use has doubled in the past 50 years



(US Geological Survey, 2017, Salt statistics, in Kelly, T.D., and Matos, G.R., comps., Historical statistics for mineral and material commodities in the United States: US Geological Survey Data Series 140, available online at http://pubs.usgs.gov/ds/2005/140/)

Why the increase?

1. Increased development = more roads, parking lots, impervious surfaces that need deicers in winter
2. Fear of liability for slips and falls
3. Change in public expectations

Photo Jennifer Latzgo

Where the salt comes from

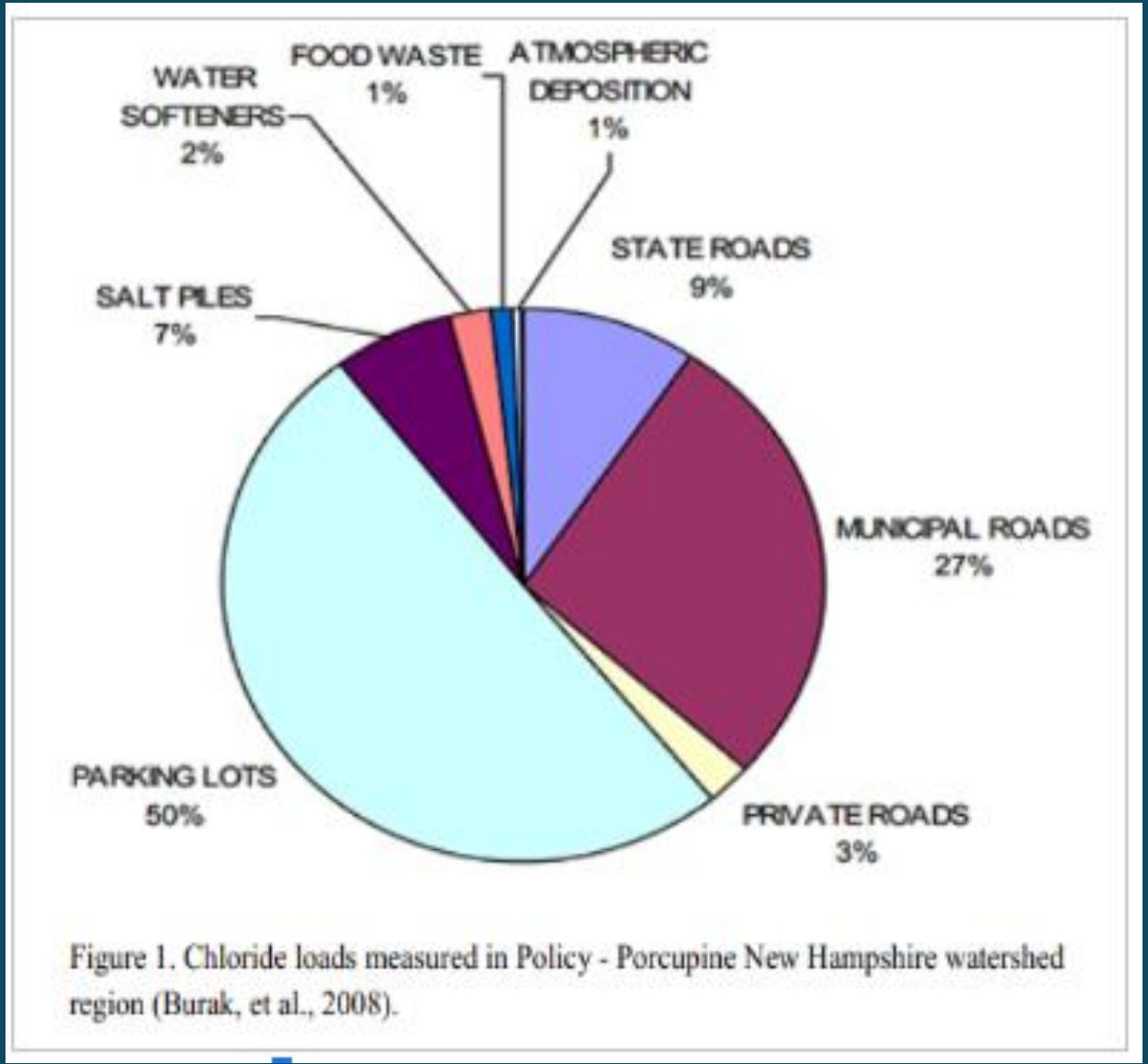


Figure 1. Chloride loads measured in Policy - Porcupine New Hampshire watershed region (Burak, et al., 2008).

Chloride Toxicity Levels

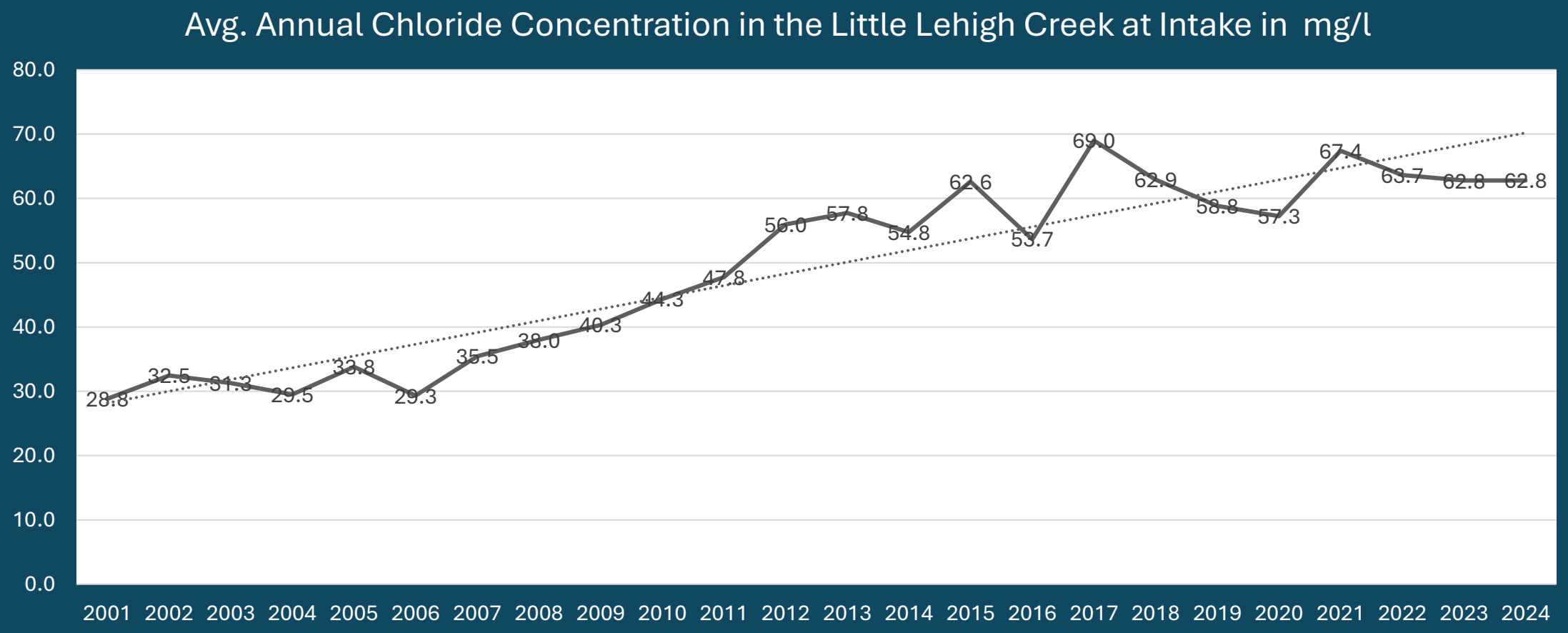
Organization	Long-term (chronic) chloride toxicity criterion (mg/l)	Short-term (acute) chloride toxicity criterion (mg/l
U.S. Environmental Protection Agency (and many states) (1988)	230	860
Canadian Council of Ministers of the Environment (2011)	120	640
Ohio EPA, Macroinvertebrate Hazard Concentration (2021)	52	--
Maryland Biological Stressor Identification Process, Chloride Threshold Level (2009)	50	--
Natural Range in Pennsylvania	5 – 20 mg/l	

Where does the salt go?

- Directly to streams: causes chloride and conductivity concentration spikes
- Infiltrates ground → groundwater (45%)

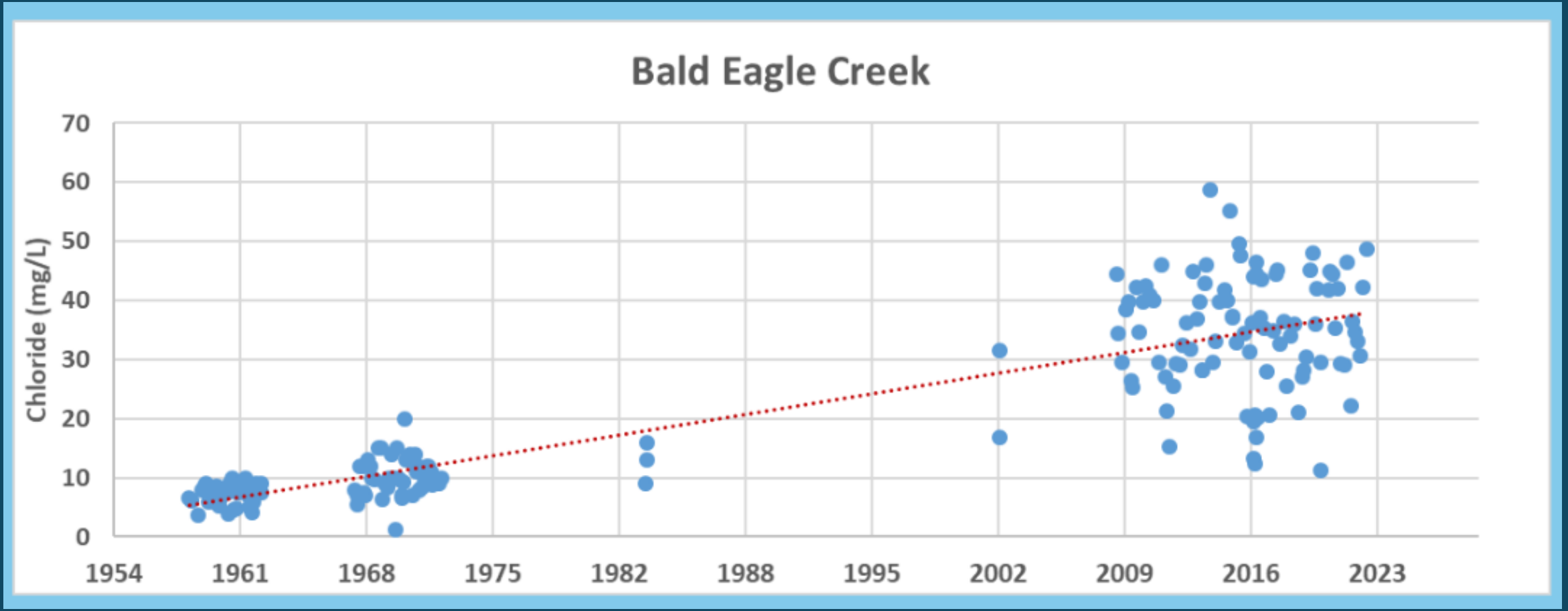
Photo Mary Rooney

Effects on Drinking Water

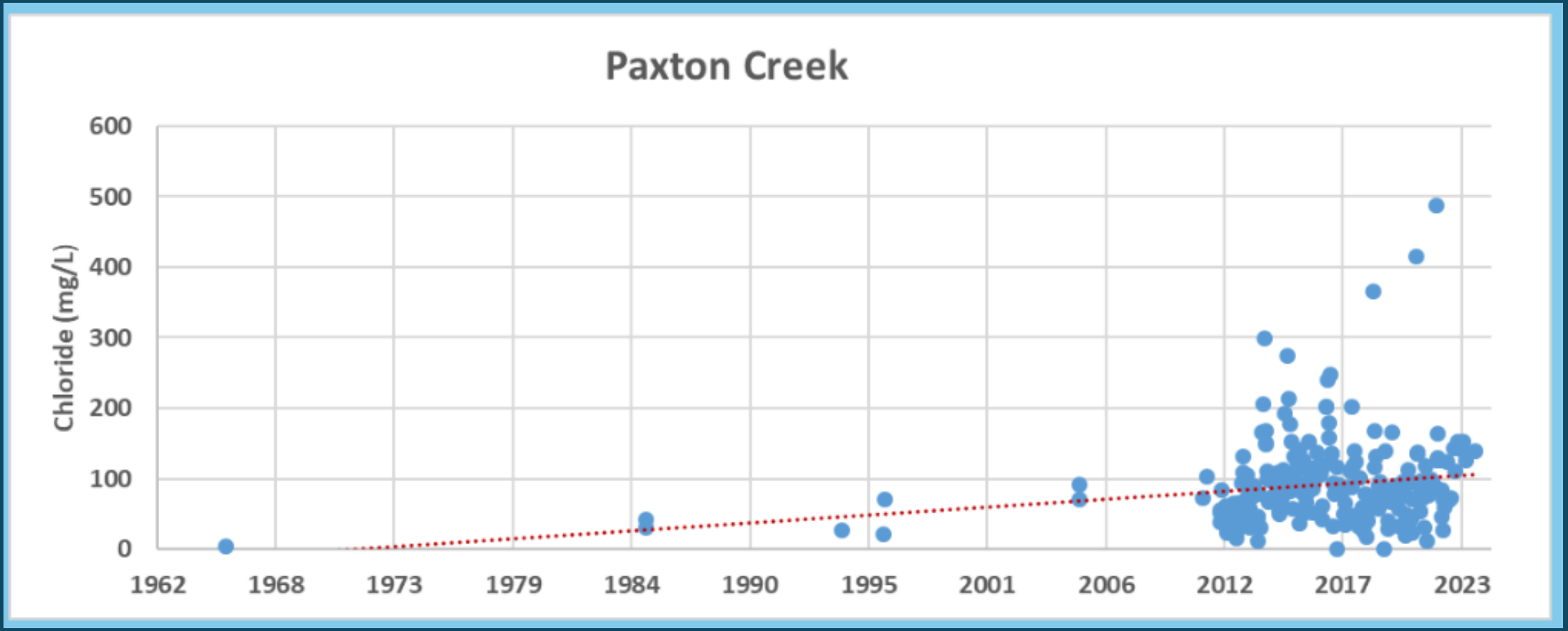


Chlorides trends in three Susquehanna Tributaries

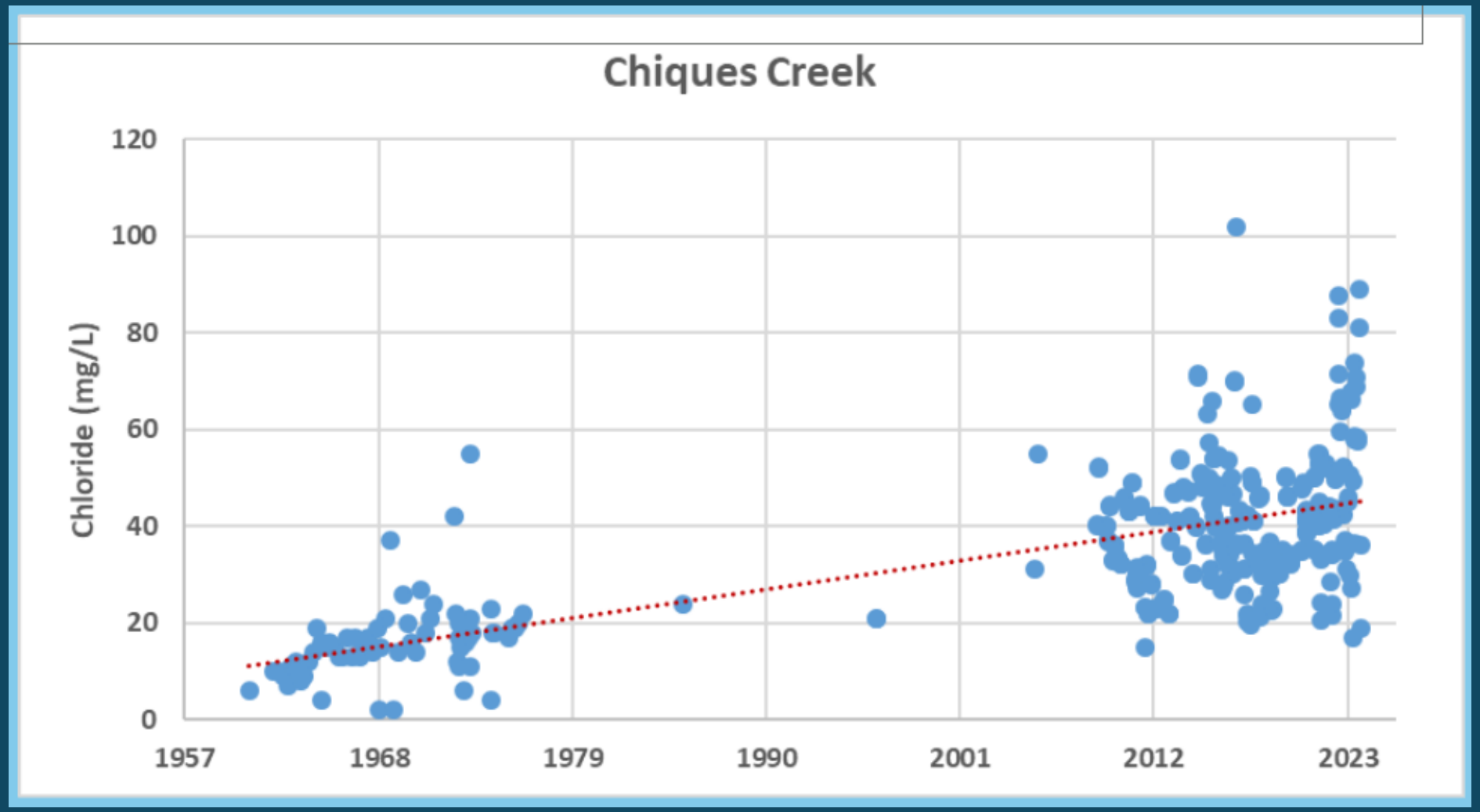
Bald Eagle Creek, Centre County



Paxton Creek, Dauphin County



Chiques Creek, Lancaster County



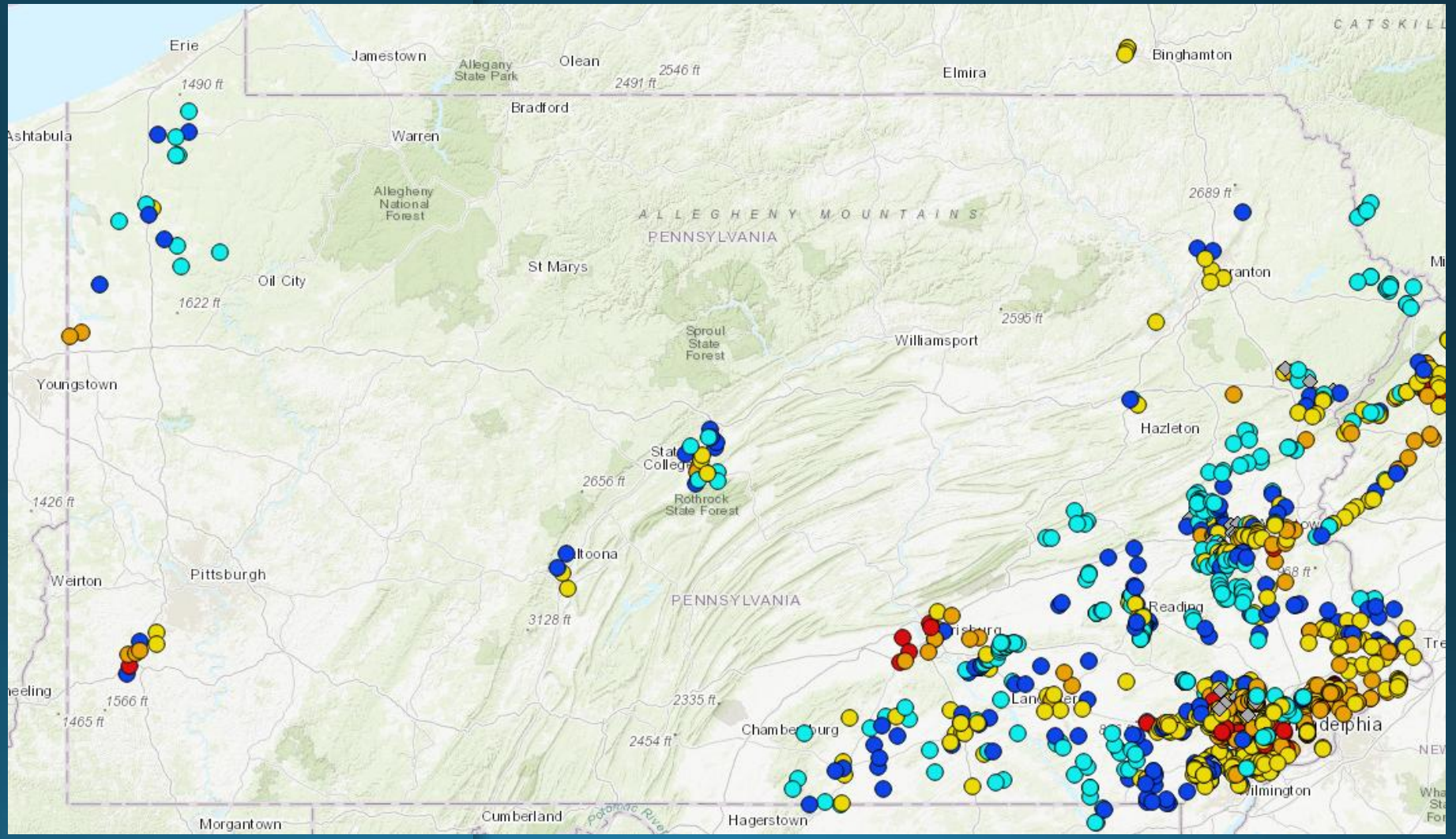
October 2025

Stroud Salt Snapshot

Chloride Concentrations across PA.

Light Blue - lowest concentrations

Red - Highest readings in mg/l



NPDES/Stormwater Regulations

NPDES regulations govern the quantity and quality of stormwater that leaves a site. The program focuses on:

- Implementing best management practices (BMPs)
- Reducing pollutants to the “maximum extent practicable” (for MS4s)
- Meeting water-quality standards

PARSA is working to address each of these points

Green Infrastructure & Stormwater storage

- Riparian buffers and rain gardens only slow the impact of salt – they do not mitigate salt pollution
- Green Infrastructure and Stormwater Basins infiltrate salt laden runoff into groundwater or slows its discharge to waterways.

Photo : Tyler Groh

Effects on drinking water

- Drinking water comes from rivers and groundwater
- Standard Water treatment does not remove salt pollutants