

Benzyl Alcohol – Current state of the science

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State of the science

- Sediment samples analyzed since 2010 have had higher detection frequencies and exceedances of the SCO than those analyzed before 2010
- These increases are a result of improvements in analytical methodology for SVOCs
- Fourie and Fox (2016) presented a comprehensive review
- The SCO established in 1986 was based on MicroTox bioassays (56 µg/kg)
- Benzyl alcohol is not a hazardous substance under CERCLA

Key points from Fourie and Fox (2016)

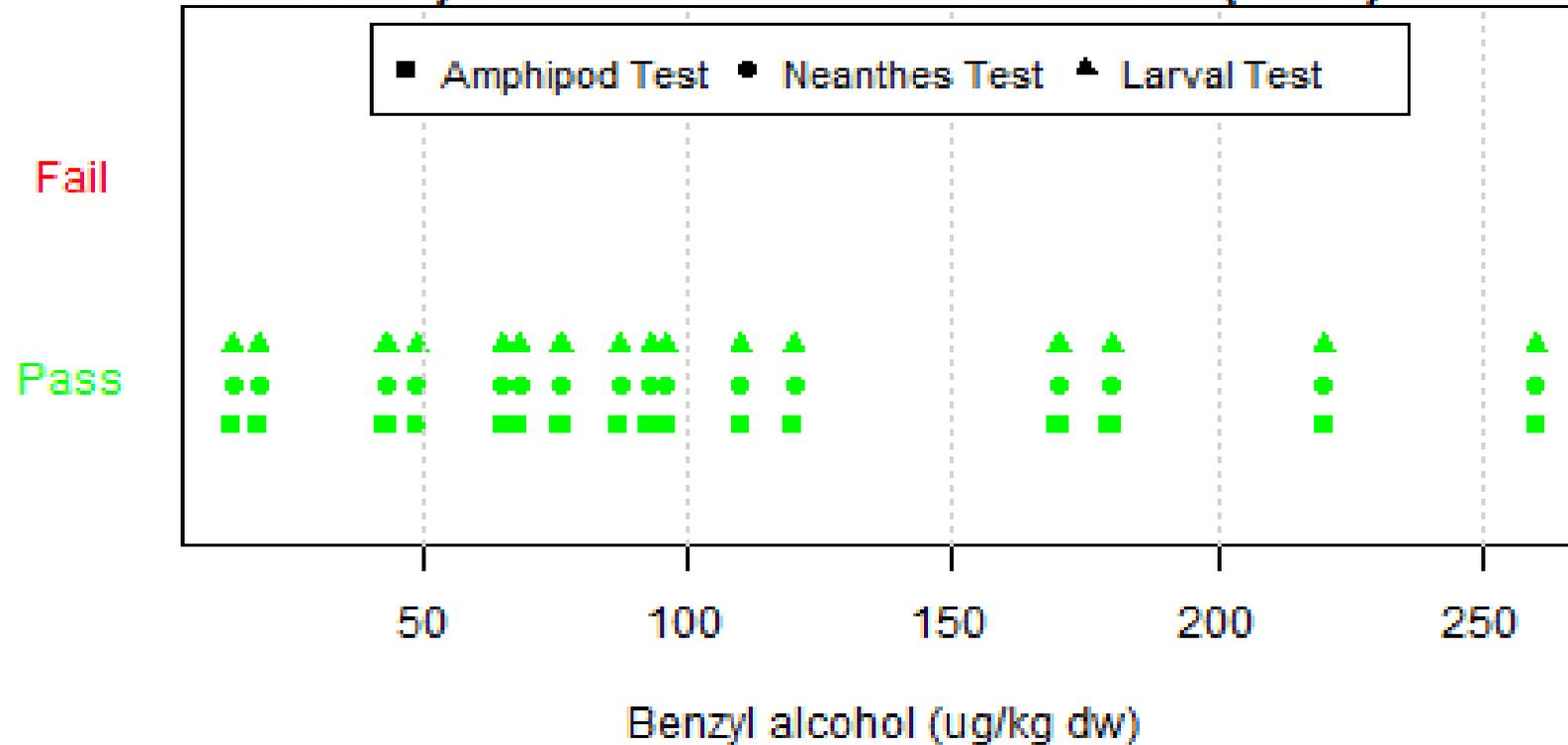
- *Benzyl alcohol likely occurs naturally in plant-derived material in marine sediment.*
- *Benzyl alcohol is likely readily biodegraded in the marine environment.*
- *Benzyl alcohol detections are widespread in Washington State and have been found in both urban and non-urban areas.*
- *Benzyl alcohol has seldom been detected at the DMMP non-dispersive disposal sites during monitoring.*
- *Bioassay data indicate that benzyl alcohol has low toxicity.*
- *Sediment benzyl alcohol concentrations derived from aquatic toxicity data using equilibrium partitioning are more than two orders of magnitude greater than the current SL.*

Benzyl alcohol in Lower Duwamish Waterway surface sediments

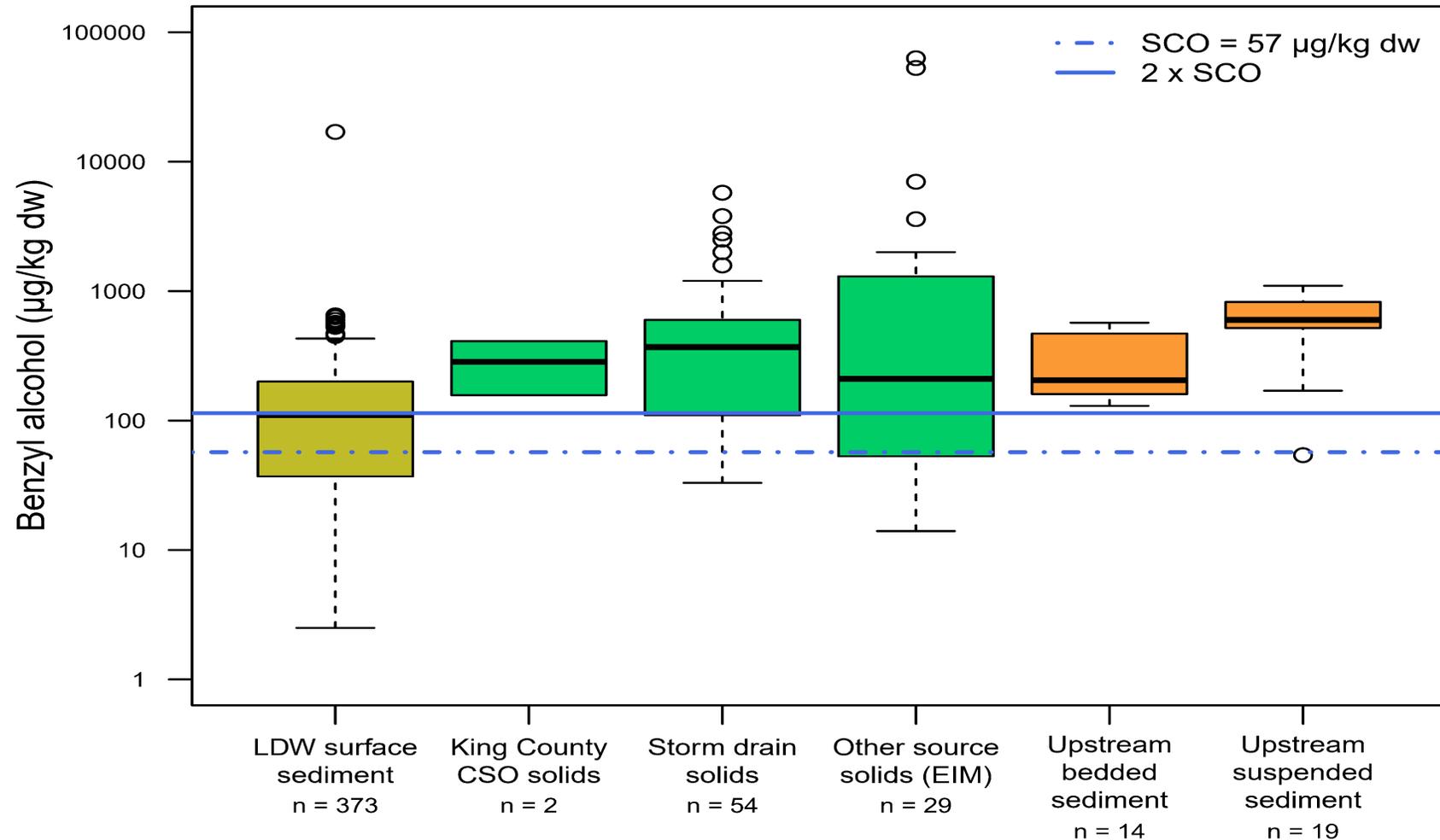


LDW surface sediment bioassay results

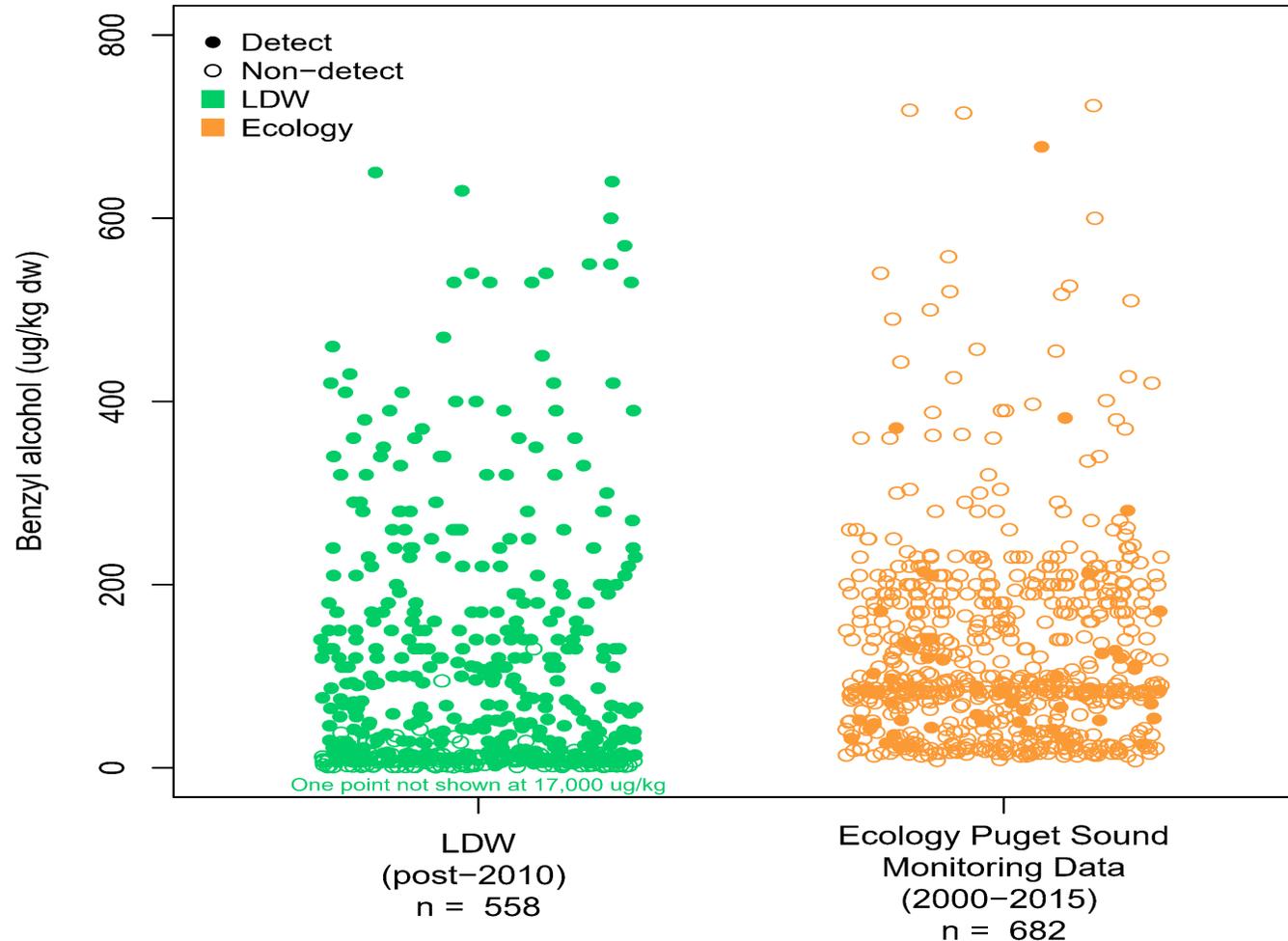
All Toxicity Tests for Surface Sediments (n=20)



Post-2010 benzyl alcohol concentrations: surface sediment, source solids, and upstream sediments



How do LDW concentrations compare to those in Puget Sound?



Conclusions

- Analytical methodology changes have resulted in increased detections exceeding the SCO in sediments and source solids
- The analytical changes have resulted in a situation where the current sediment benzyl alcohol concentrations are not comparable to the concentrations used to set the SCO
- Recent bioassay data suggest that the LAET is greater than the SCO
- Various options are being discussed to resolve this issue