
Metals in the Los Angeles River after the Lineage Fire

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Collaborators

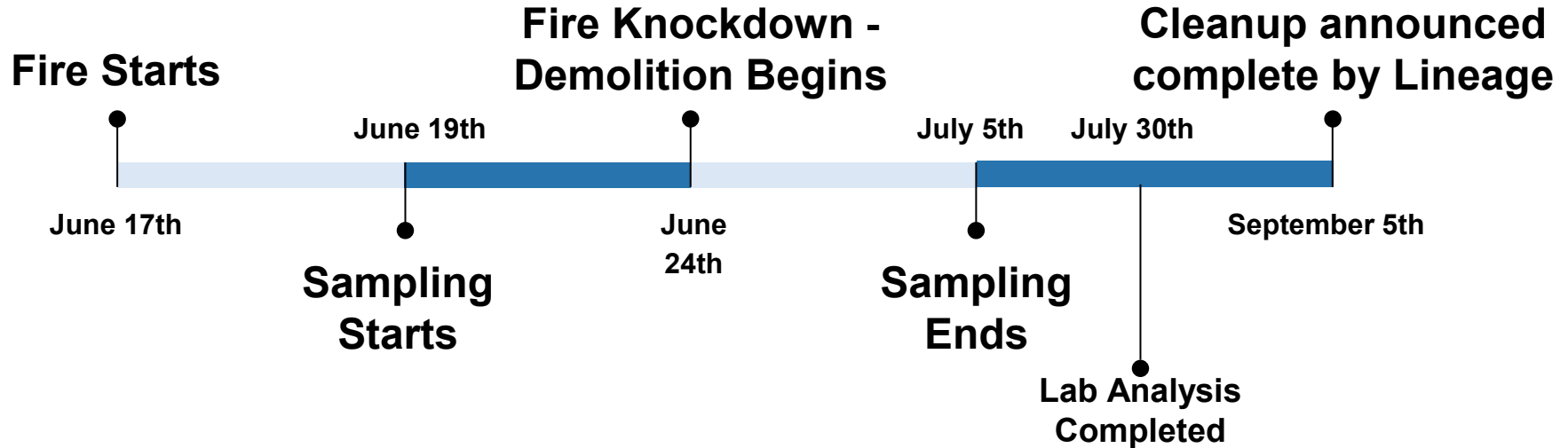


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Community Identified Concern: Contaminants impacting the Los Angeles River



Fire + Sampling Timeline



Analytical Methods and Quality Control

- Analyzed by the METLab Core Facility, Columbia University Mailman School of Public Health
- Metals measured by ICP-MS (Agilent 8900 Triple Quadrupole)
- Samples filtered at 0.22 μm (PES) syringe—results represent the dissolved metal fraction
- Quality assurance / quality control (QA/QC):
 - Replicates: 5 single, 29 duplicate, 8 triplicate samples
 - Certified Reference Material: NIST 1643e (trace elements in water)
 - All samples were blank corrected



Statistical Methods

- Raw data files were imported into R-Studio and Excel
 - Two individuals checked data summaries and had 100% agreement
- We summarize averages for Cr, Pb, Fe, and Zn based on time and sample location
- We compare averages with historical maximum recorded concentrations
 - 2018-2024 Los Angeles River Watershed Monitoring Program from The Council for Watershed Health
- We compare averages to LA River Metals TMDL

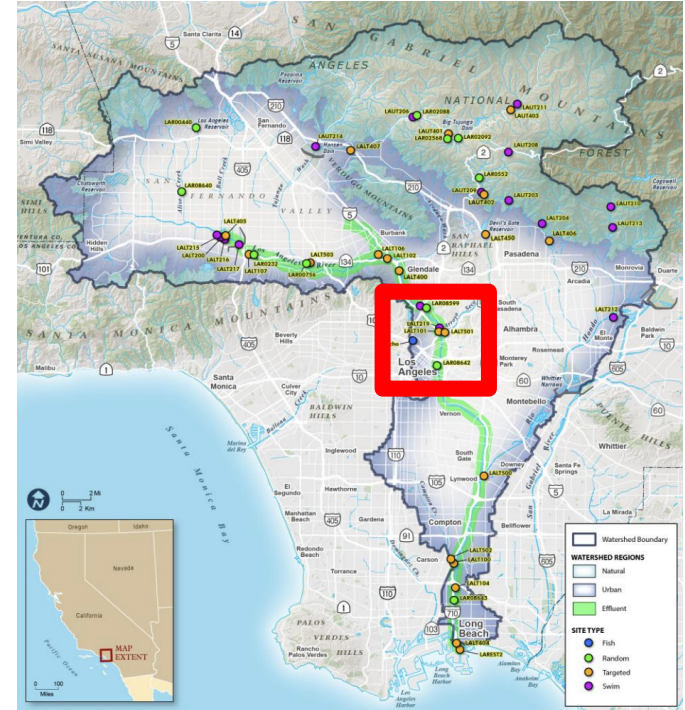
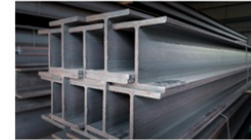
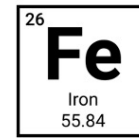
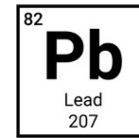
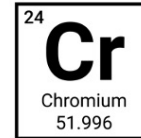


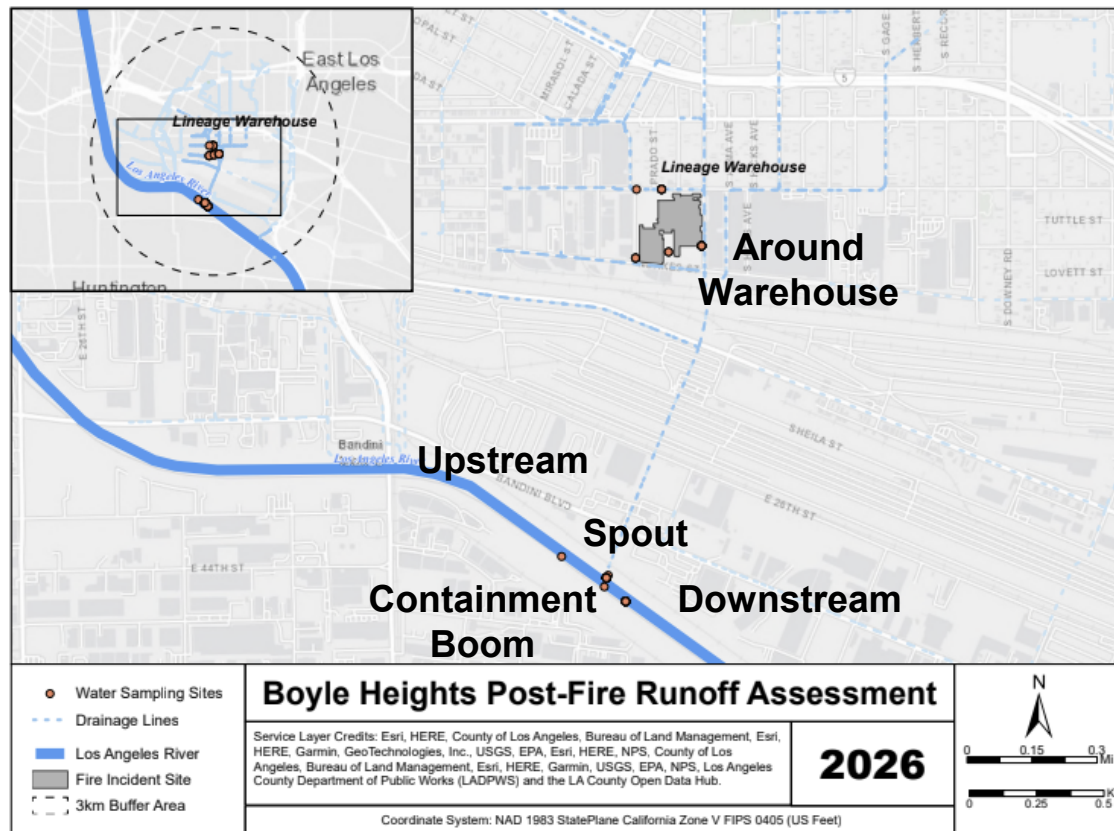
Figure. Sampling locations for LARWMP obtained from <https://www.watershedhealth.org/reports>

Why focus on only 4 metals?

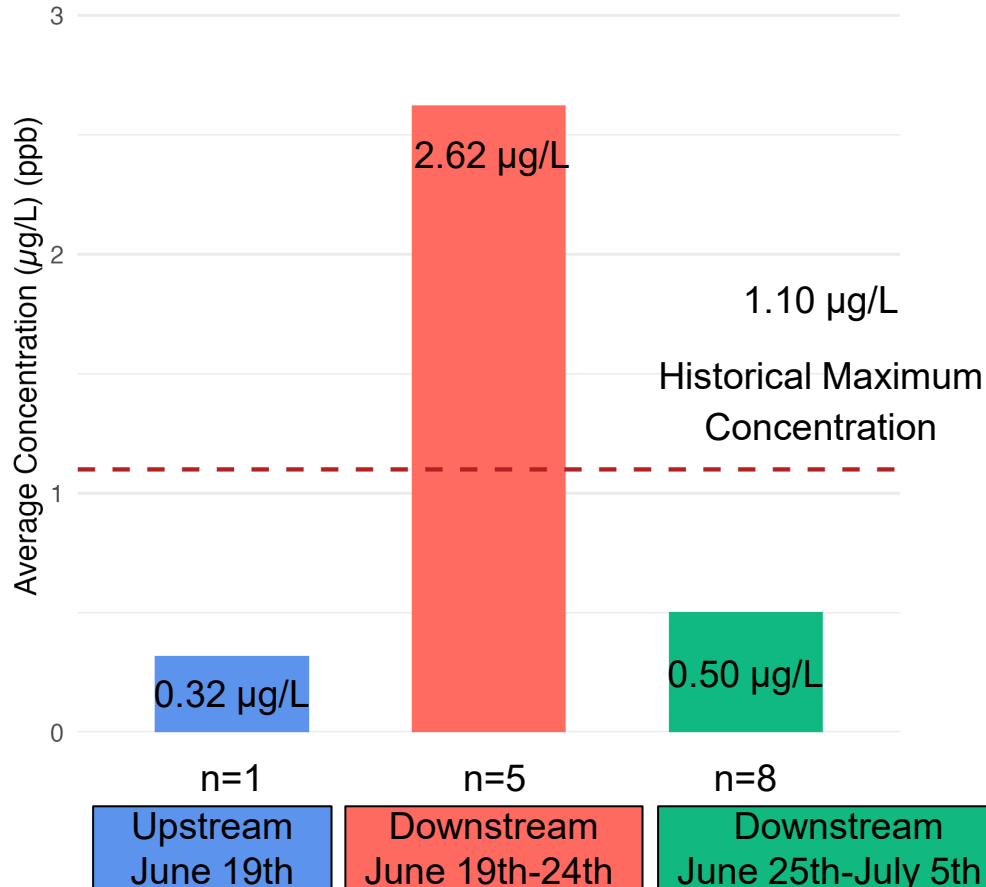
- Potential sources of metals released during fire:
 - Solar panels and electrical systems
 - Structural steel and roofing
 - Industrial equipment and wiring
- Pb and Zn have TMDL* set for the Los Angeles River



Where did we sample?



Results - Chromium

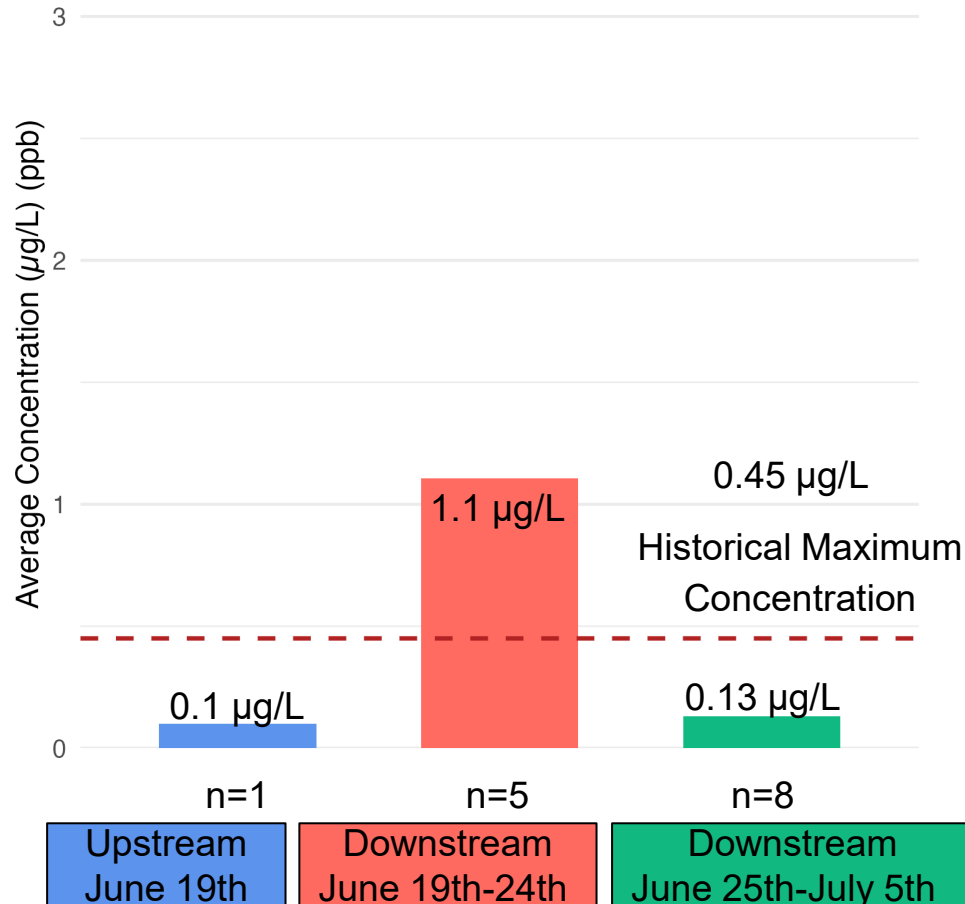


2.4 times higher
than previously
measured

100% Detection

MDL - 0.02 $\mu\text{g/L}$

Results - Lead

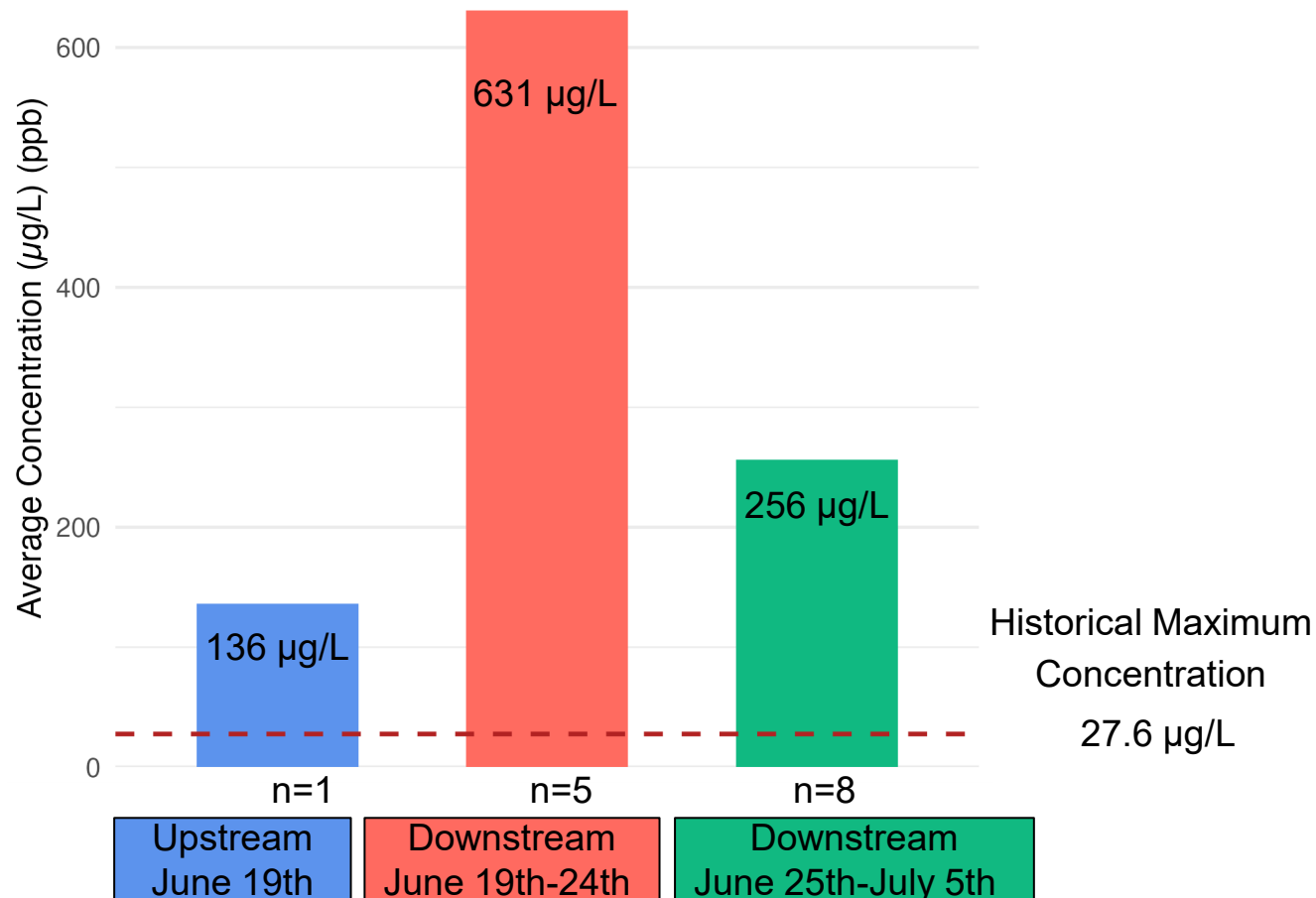


2.4 times higher
than previously
measured

100% Detection
MDL - 0.002 µg/L

All samples
below the TMDL
for dry weather
37 to 170 µg/L

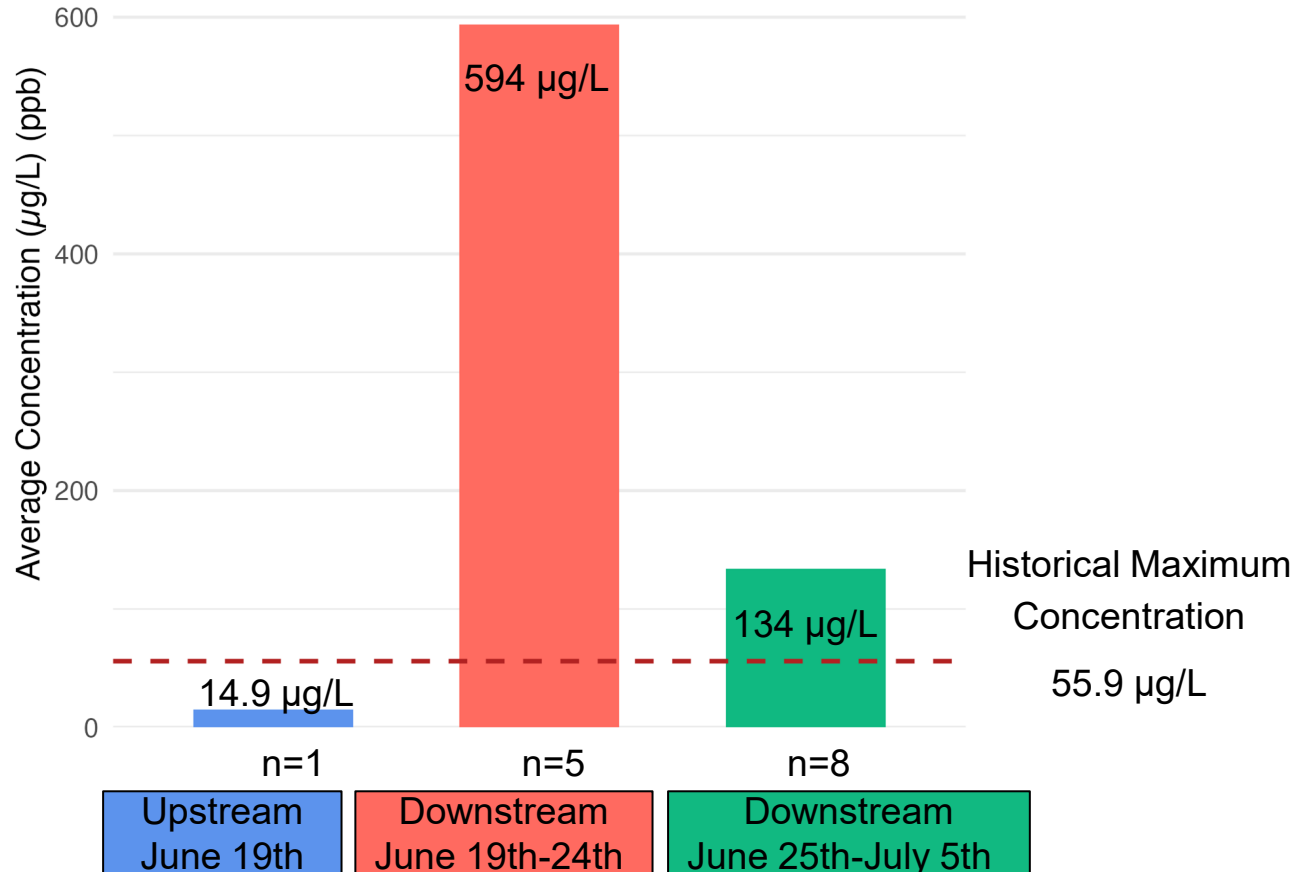
Results - Iron



23 times higher
than previously
measured

100% Detection
MDL - 1.07 $\mu\text{g/L}$

Results - Zinc



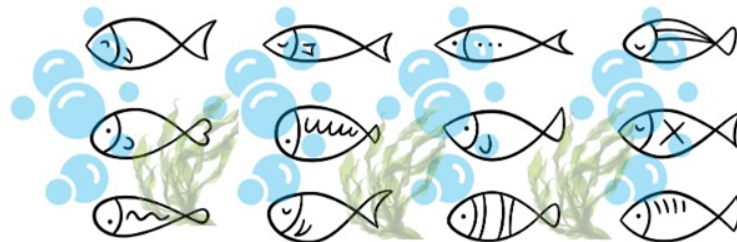
11 times higher than previously measured

100% Detection
MDL - 0.038 $\mu\text{g/L}$

8 samples above the TMDL for dry weather 131 $\mu\text{g/L}$

Key Takeaways & Recommendations

- Chromium, Iron, Lead and Zinc were elevated downstream of the main drainage point during the active fire period (June 19–24)
- Chromium, Iron, Lead and Zinc were above LA River historical maximums
- Zinc exceeded regulatory (TMDL) standards
- Elevated metals are a concern for aquatic life in the LA River
- Recommendation: continued monitoring and investment in community capacity



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Thank you

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Check out our Story Map



Check out our Infographic

