

## Occurrence of Organic Micropollutants in the Schönbrunnen Sub-catchment and its Implication for Higher Order Streams

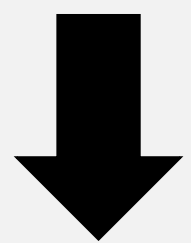
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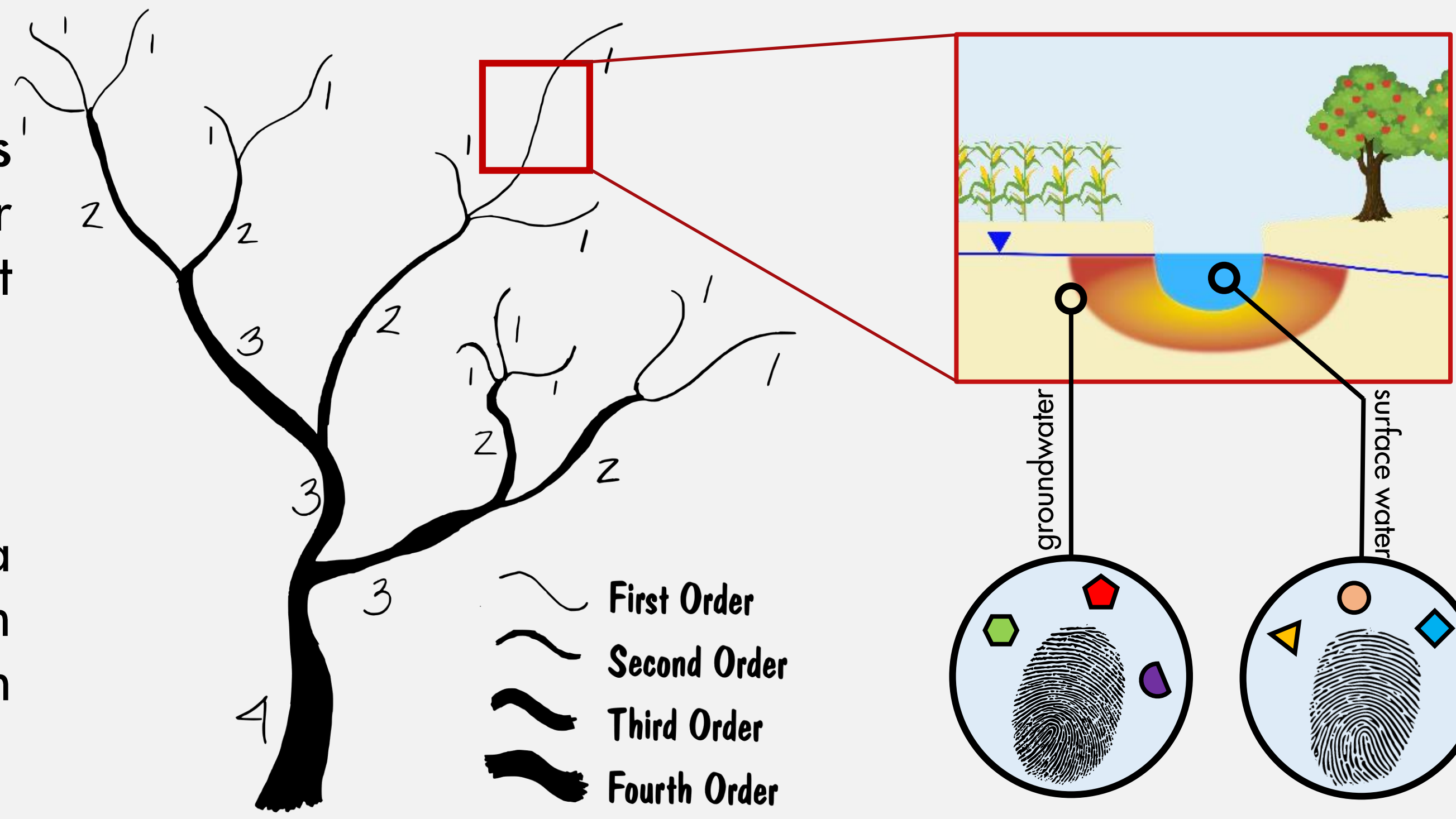
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### Introduction

Higher order streams are integrators of diverse point (e.g. wastewater treatment plants) and non-point sources (e.g. agriculture).



Their chemical fingerprints reflect a variety of chemical constituents, such as organic micropollutants from different classes (e.g. pesticides).



Lower order streams drain large areas and, as such, can significantly contribute to total loads of receiving waters.

In order to evaluate their impact on water quality of higher order streams, an assessment of occurrence of micropollutants is crucial.

### Target Screening Schönbrunnen



**Sampling locations:** 6 groundwater monitoring stations ●  
3 surface water sites ●

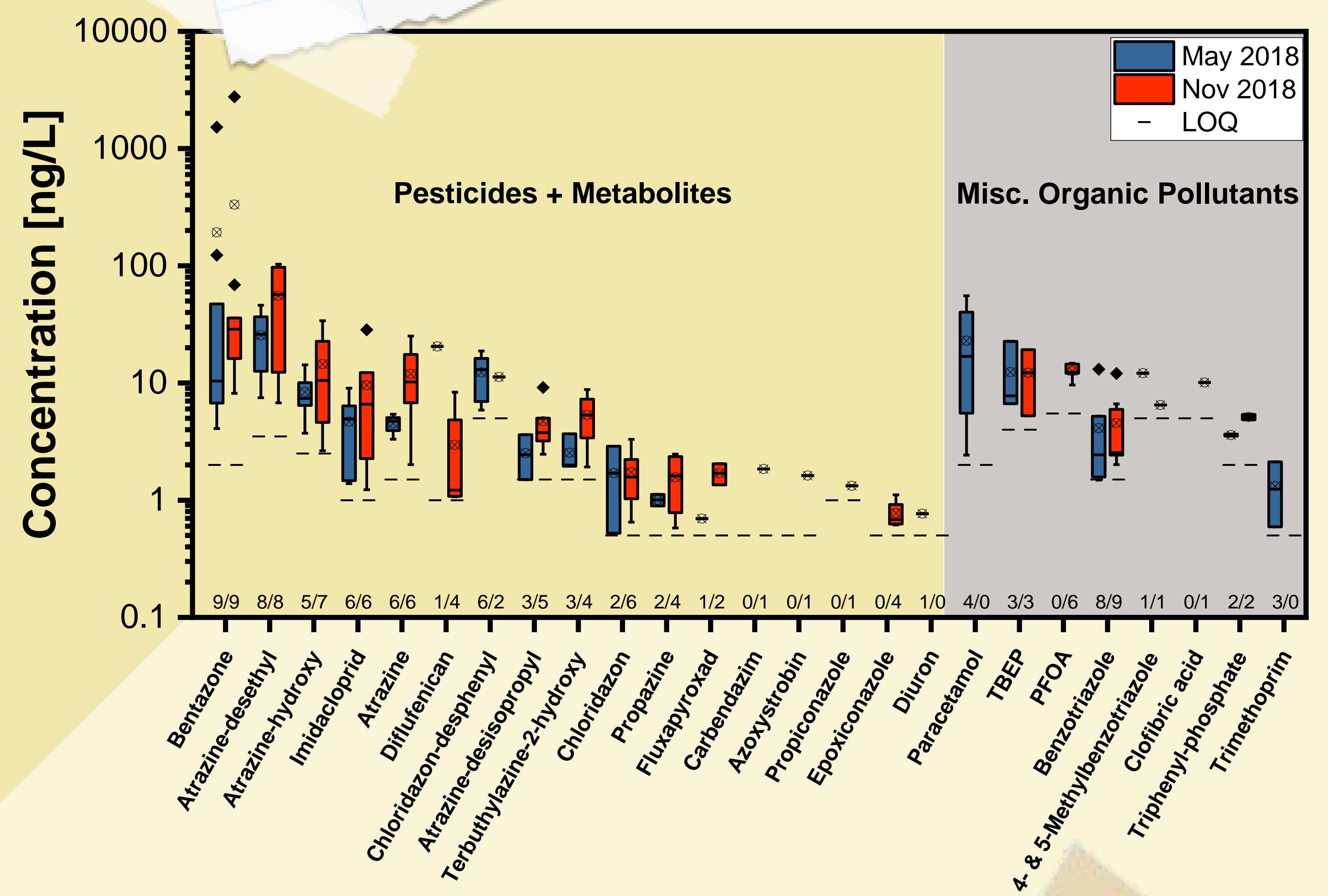
**Sampling time:** May 2018  
November 2018

**Analysis:** LC-MS/MS  
Targets: 88 relevant organic micropollutants (CAMPOS mix)

• 17 pesticides/metabolites detected  
• 8 other organic pollutants detected  
• concentration range: 0.5 to 2766 ng/L  
• 0.75 quantiles: 16 ng/L (pesticides) and 9 ng/L (others)  
• tendentially higher concentrations in November

upper reaches & SW  
atrazine & metabolites dominant

lower reaches  
bentazone dominant



Mobilization of pesticide residues → ubiquitous background concentrations (low ng/L range)

However, micropollutant loads of water bodies in spatial proximity can significantly differentiate

Low micropollutant levels that are commonly monitored in rivers/groundwater likely trace back to concentrations that can be much more elevated in time and space when determined in lower order streams.

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