

End-member mixing analysis reveals divergent patterns of soil-stream connectivity during mid-winter runoff events between two catchments in the northeastern USA

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Introduction

Supporting Table S1 provides statistical information and additional data details for New England river winter discharges since 1928. Supporting Figures S1-S5 provide details underlying the tracer selection process for end-member mixing analysis (EMMA) and event-level EMMA errors.

Table S1. Winter discharge increases in New England rivers, 1928-2025.

River and gauge location	USGS monitoring station #	Cumulative winter discharge increase from 1928 to 2025	p value	Adjusted r ²	Approximate %
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					increase in text
Connecticut River at Thompsonville, CT	USGS-01184000	1.551937566	1.68E-05	0.1726	55
Merrimack River at Lowell, MA	USGS-01100000	1.604054774	6.64E-05	0.149	60
Winooski River near Essex Junction, VT	USGS-04290500	1.662940835	8.41E-06	0.1844	66
Lamoille River at East Georgia, VT	USGS-04292500	1.528963657	2.83E-05	0.1637	53

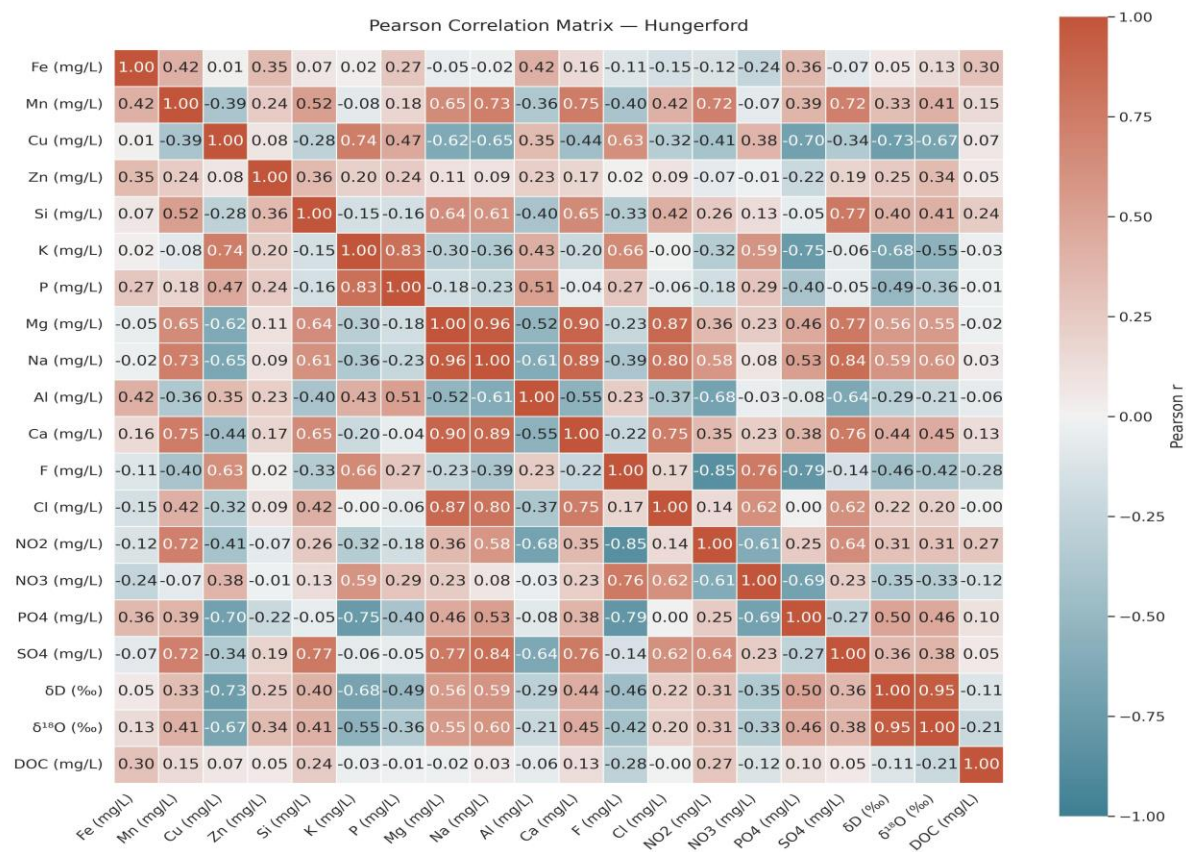


Figure S1. Pearson correlation scores for all measured hydrogeochemical tracers at Hungerford Brook from February to April 2023.

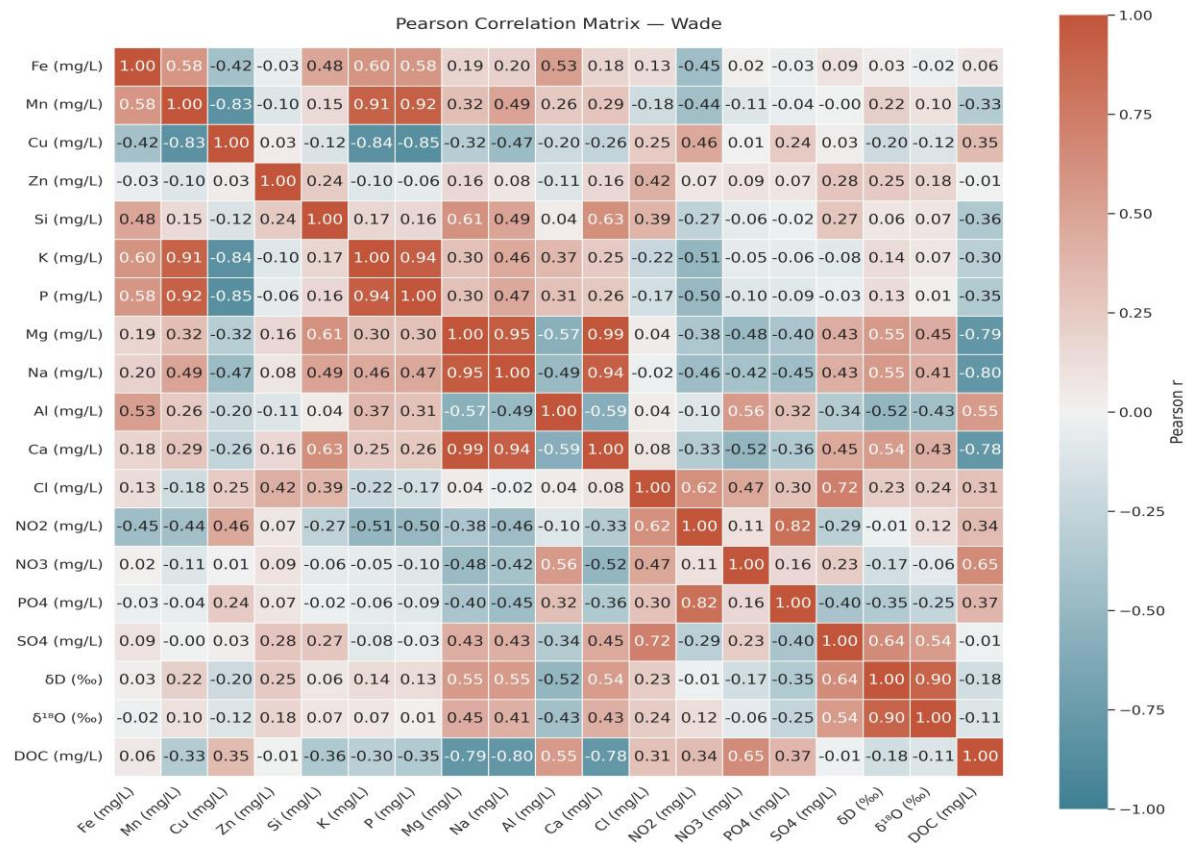


Figure S2. Pearson correlation scores for all measured hydrogeochemical tracers at Wade Brook from February to April 2023.

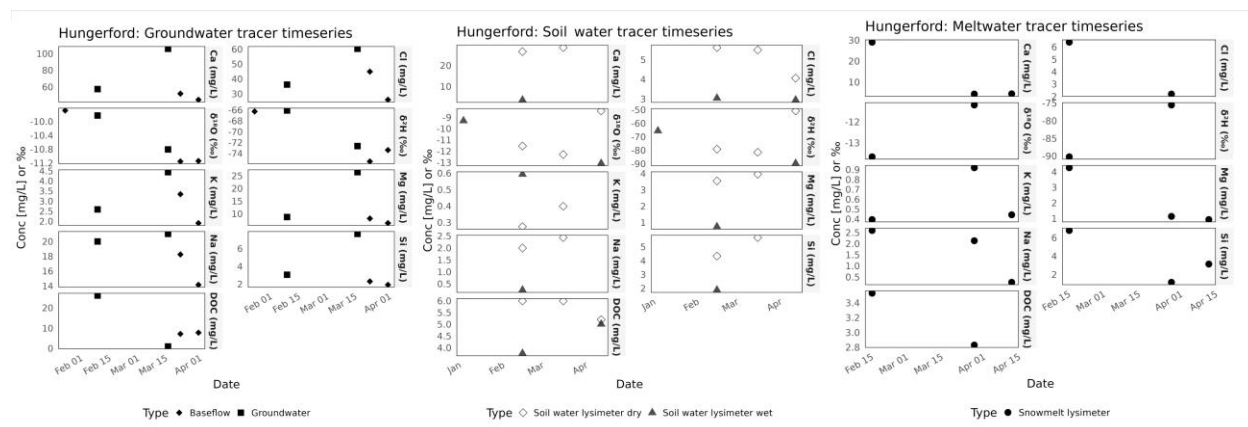


Figure S3. End-member tracer timeseries for Hungerford Brook from January to April 2023.

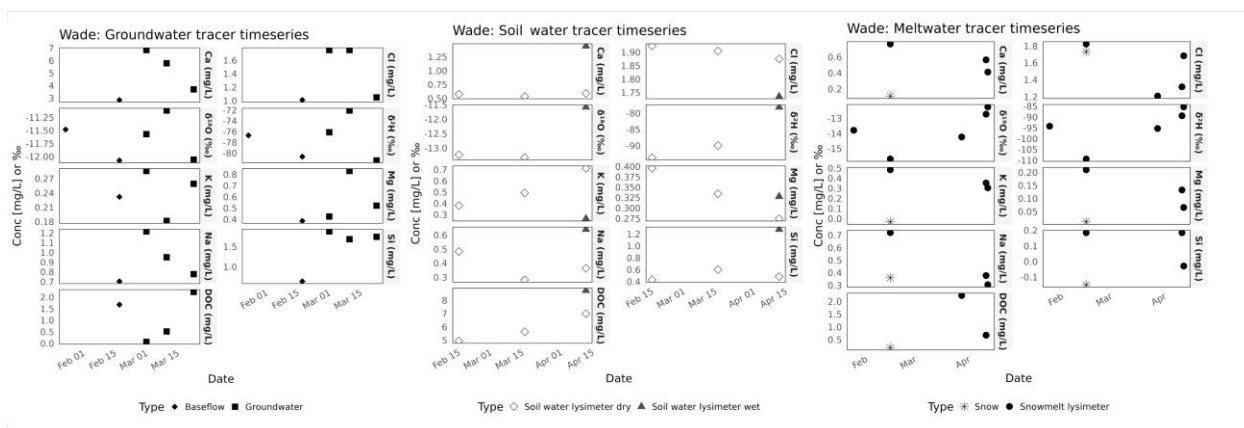


Figure S4. End-member tracer timeseries for Wade Brook from January to April 2023.

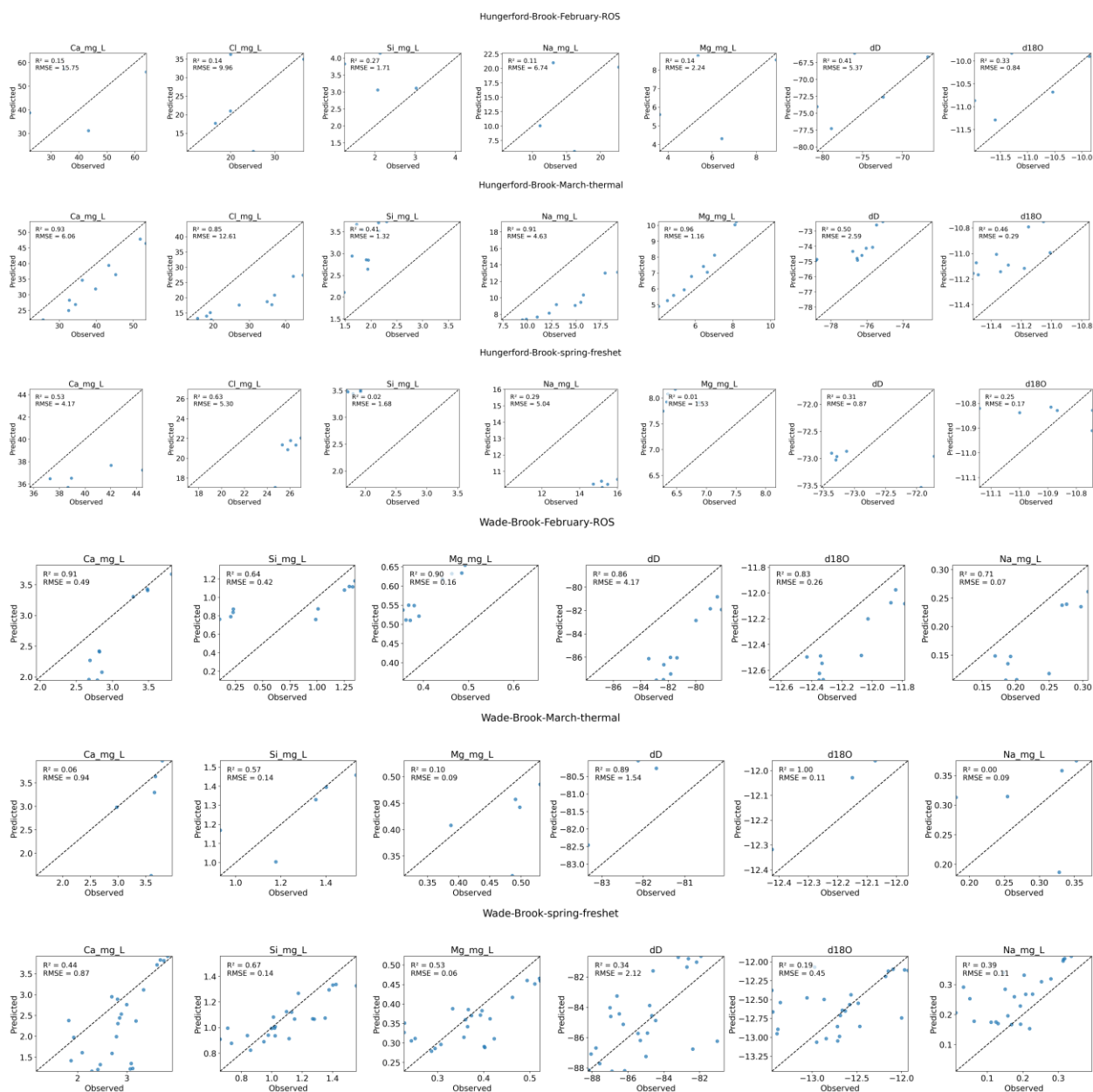


Figure S5. Model-predicted vs observed tracer plots for Hungerford Brook and Wade Brook event-level end-member mixing analyses (EMMA).