

Supplemental Material

Differential Impacts of Road De-icers on Freshwater Bacterial Communities

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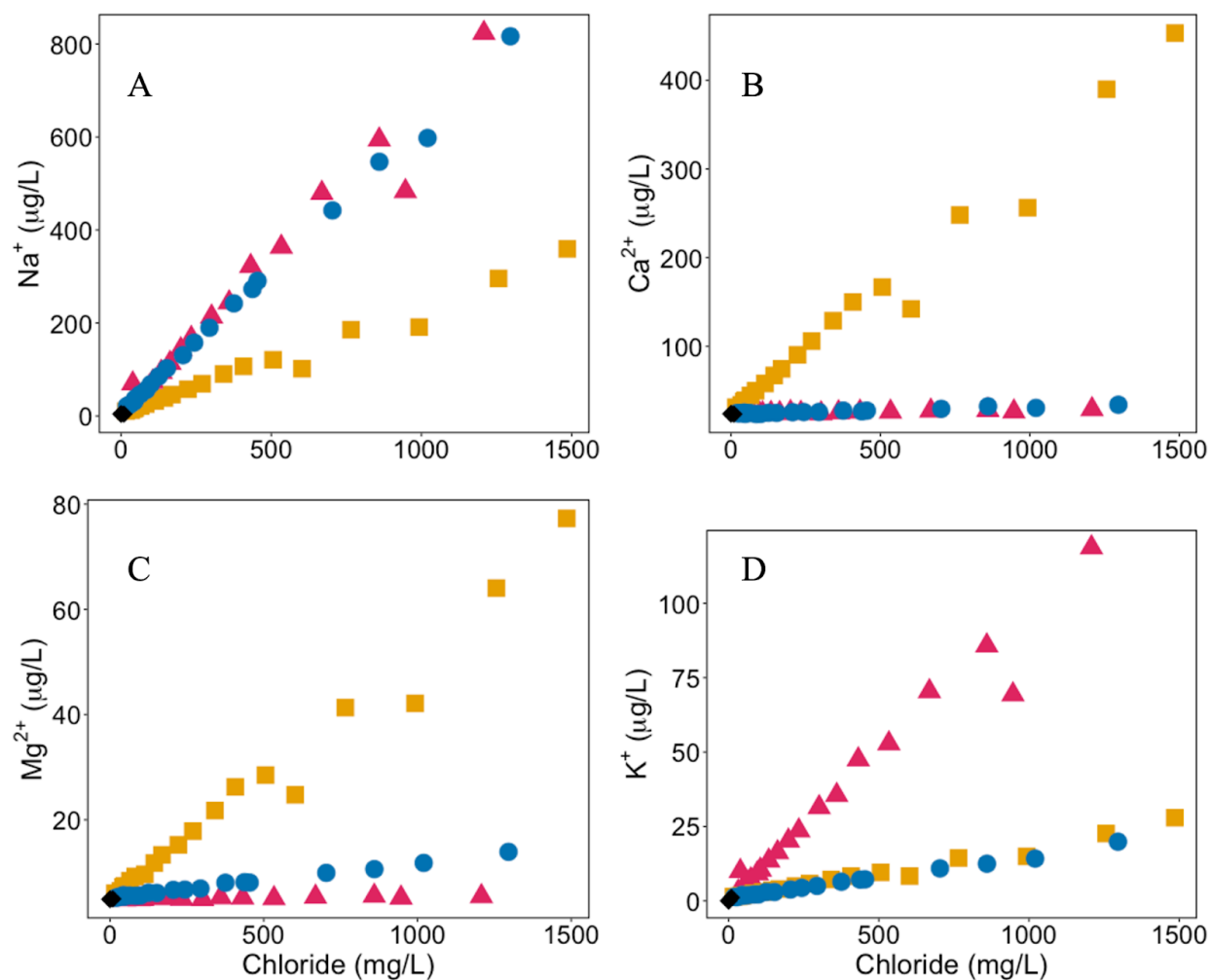


Figure S1. Concentrations of cations (mg/L) plotted against experimentally determined chloride concentrations (mg/L) for each treatment. A – D: sodium, calcium, magnesium, and potassium ions, respectively. Black diamonds represent controls, blue circles show the road salt de-icer treatment, orange squares represent the mixed inorganic treatment, and red triangles indicate the beet organic treatment. Samples were taken in the first week of experimental treatment.

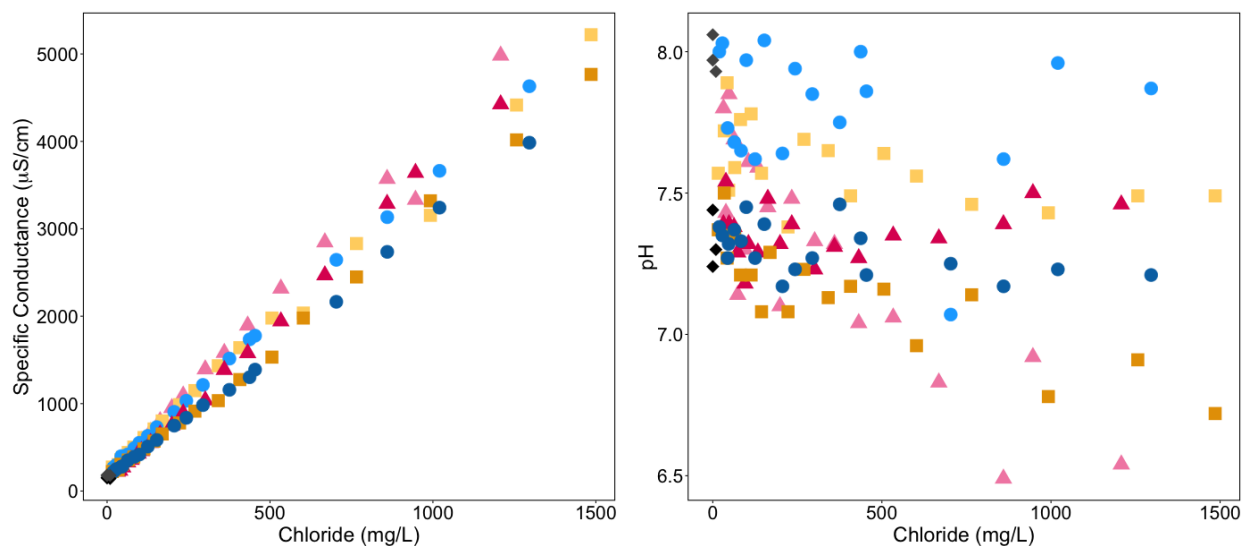


Figure S2. Changes in the mesocosms depending on the course of de-icing amendments showing experimental conductivity ($\mu\text{S}/\text{cm}$) plotted against experimentally determined chloride concentration (mg/L) for each treatment (left panel), and pH plotted against experimentally determined chloride concentration for each de-icer treatment group (right panel). Black diamonds represent controls, blue circles represent the road salt treatment, orange squares represent the mixed inorganic treatment, and red triangles represent the beet organic treatment just after the establishment of the mesocosms, and the same symbols with corresponding lighter colours representing the treatment groups after week 6, at the conclusion of the experiment.

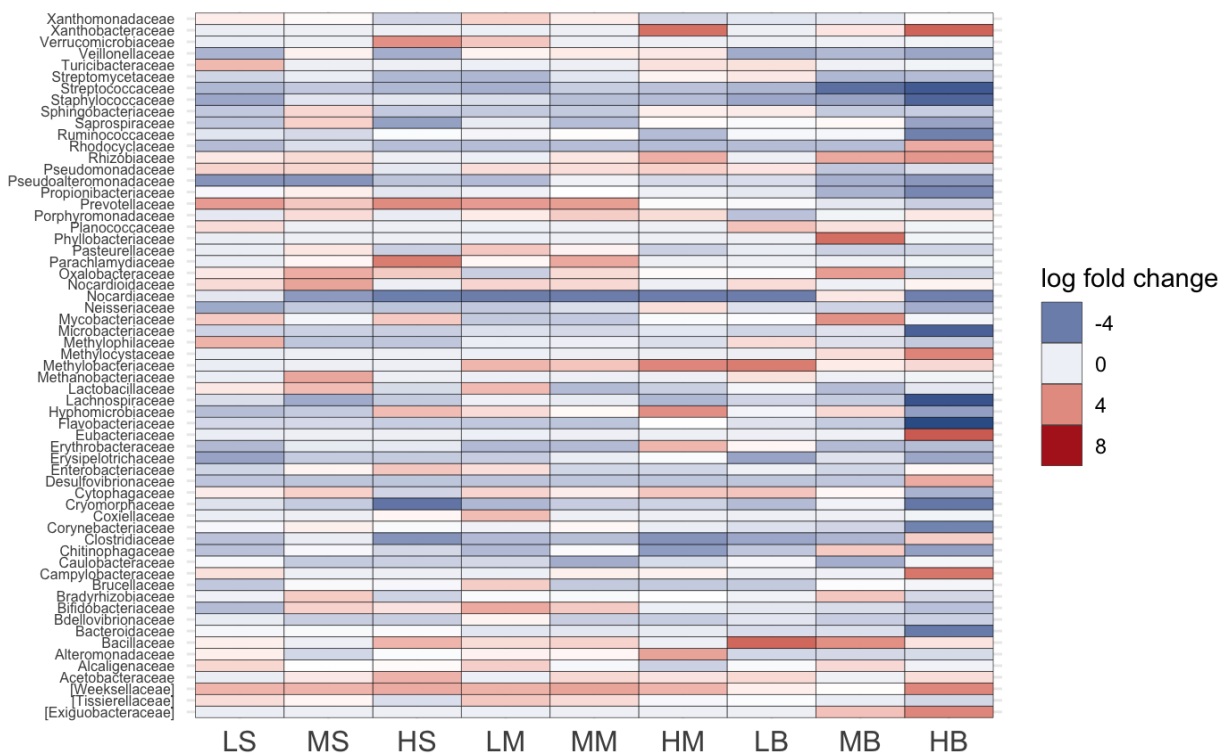


Figure S3 Heat map representing the log fold change in differences in bias-corrected abundances of microbial families across treatments compared to unamended controls. Microbial families in the plot are taxa that are significantly differentially abundant between at least two treatments with colours indicating the log fold change are shown. Adjusted p-values for each family deemed significantly different shown in the plot were ≤ 0.05 .

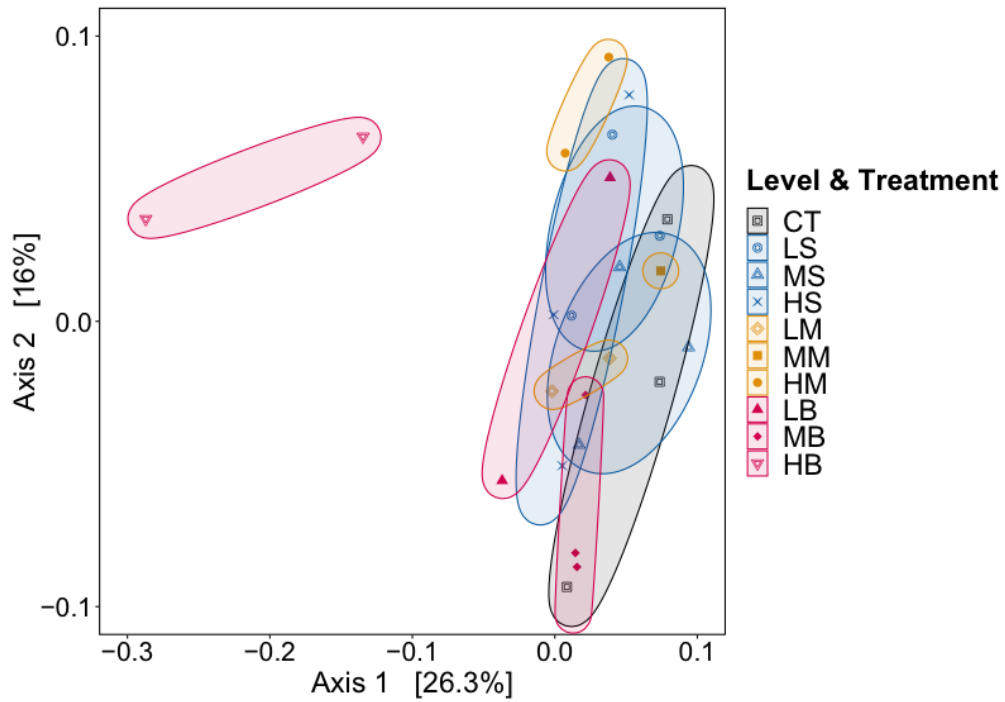


Figure S4. PCoA biplot of ASVs $\geq 0.1\%$ relative abundance, showing the impact of road salt in triplicate samples representing mesocosms amended at three different concentrations of three different de-icers. Samples included low (L), medium (M) and high (H) concentrations of road salt (S; blue ellipses, with open circles for L, open triangles for M and x symbols for H), mixed inorganic salts (M; with open triangles for L, filled boxes for M and filled circles for H), as well as organic beet samples (B; with filled triangles for L, filled diamonds for M and the nabla for H). Controls (CT) containing no added de-icers are represented by grey ellipses with open grey box symbols.