



## **Pyrosequencing Reveal the Genetic Diversity of Bacteria, Archaea, and Fungi in Hyporheic Zones**

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Hyporheic zones are hot spot to numerically vast and phylogenetically diverse bacterial, archaea and fungi communities between surface water and groundwater. However, the prokaryotes and eukaryotes in the zones were rarely investigated in detail. To date, little is known about hydroecology of hyporheic zones. Here, we report on use of pyrosequencing technique to elucidate the bacterial, archaeal and fungal community profiles associated with the groundwater and stream water interactions in hyporheic zones. Analyses of the zones microbial communities have revealed that the novel genera and species were associated with hydrological uniqueness of hyporheic zones. The absent and presence microbial communities in the areas were significantly affected by groundwater and stream water exchange patterns.

Our data suggest that the bacterial, archaeal and fungal communities distribute and gathered within the mixing patterns of hyporheic zones, and that relative scarcity of these microbials in the zones is due to lack of appropriate substrates.

Key words: Hyporheic exchange patterns, Pyrosequencing analysis, Bacterial community profiles, Archaeal community profiles, Fungal community profiles.

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