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Embracing Immigration - Investigating the effect of influent wastewater on microbial community structure in WRRSs

Dottorini, Giulia; Andersen, Kasper Skytte; Yssing Michaelsen, Thomas; Kristensen, Jannie Munk; Wágner, Dorottya Sarolta; Nierychlo, Marta Anna; Nielsen, Per Halkjær

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The abundance of bacterial species in Influent Wastewaters affects the abundance in in Activated Sludge

Embracing Immigration – Investigating the Effect of Influent Wastewater on Microbial Community Structure in WRRFs

Giulia Dottorini, Kasper S. Andersen, Thomas Y. Michaelsen, Jannie M. Kristensen, Dorottya S. Wagner, Marta Nierychlo, Per H. Nielsen

What

Water Resource Recovery Facilities (WRRFs) are *open* engineered ecosystems.

Microorganisms from Influent Wastewaters (IWW) are continuously *dispersed* into Activated Sludge (AS) microbial communities.

Why

To identify the *relationship* between IWW and AS in terms of microbial community's *composition and abundance*

How

- IWW and AS samples
- every second week for 3 months at 14 WRRFs in Denmark
- 16S rRNA gene amplicon sequencing, mass-balance, statistics.

Results

In most facilities, the relative abundance of a certain species within a genus was similar in both Influent Wastewater and Activated Sludge.

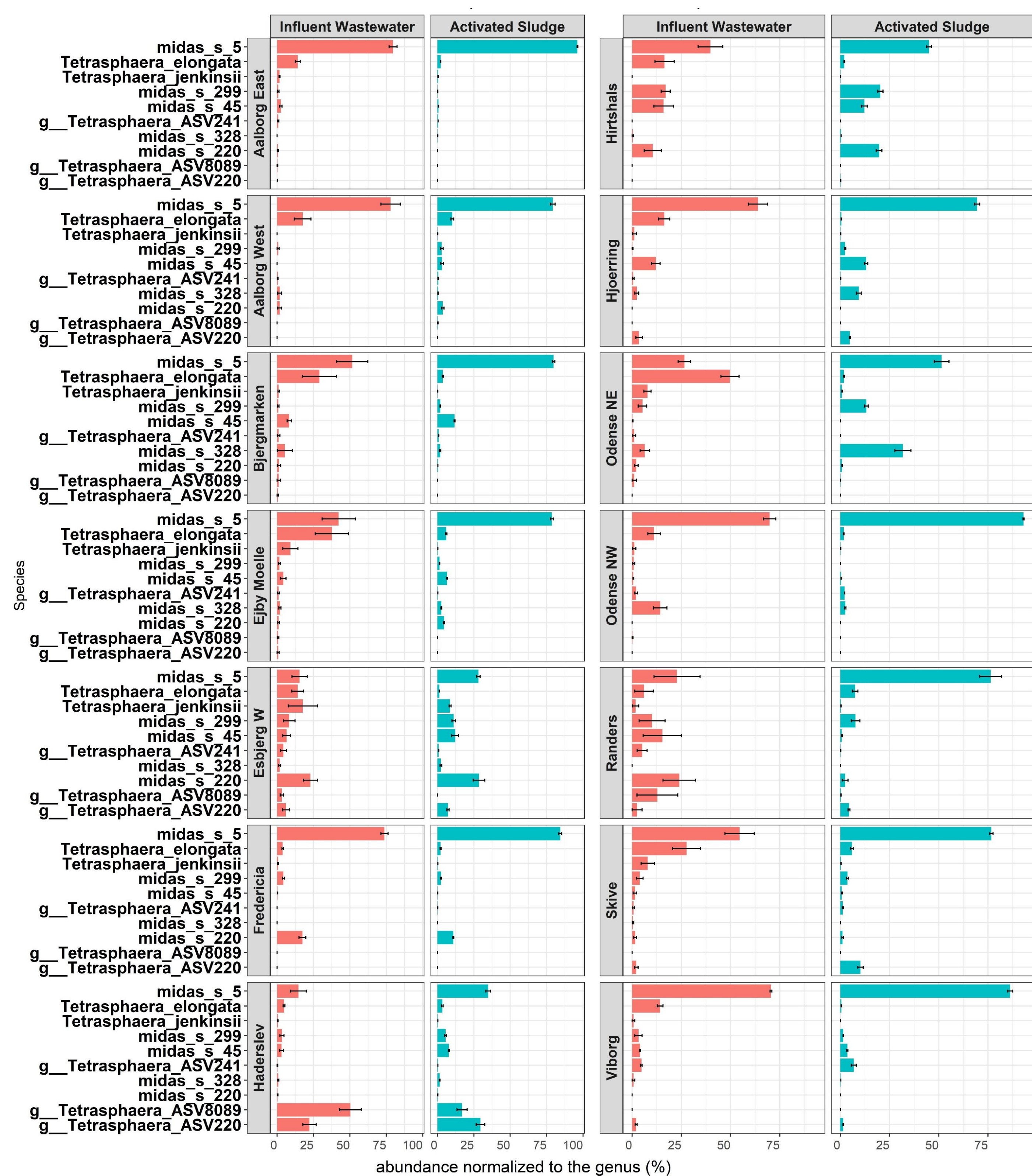


Figure 1. Bar plot of abundance (x-axis) referred to the most abundant species (y-axis) within the genus *Tetrasphaera* in activated sludge. The abundance is expressed for each species as read abundance normalized to the total number of reads within the genus. The abundance represents an average over up to 6 samples and it is shown for every one of the 14 facilities in both samples' types, Influent Wastewater (red) and Activated Sludge (blue).