Supplementary information

Title: Environmental conditions and community evenness determine the outcome of biological invasion

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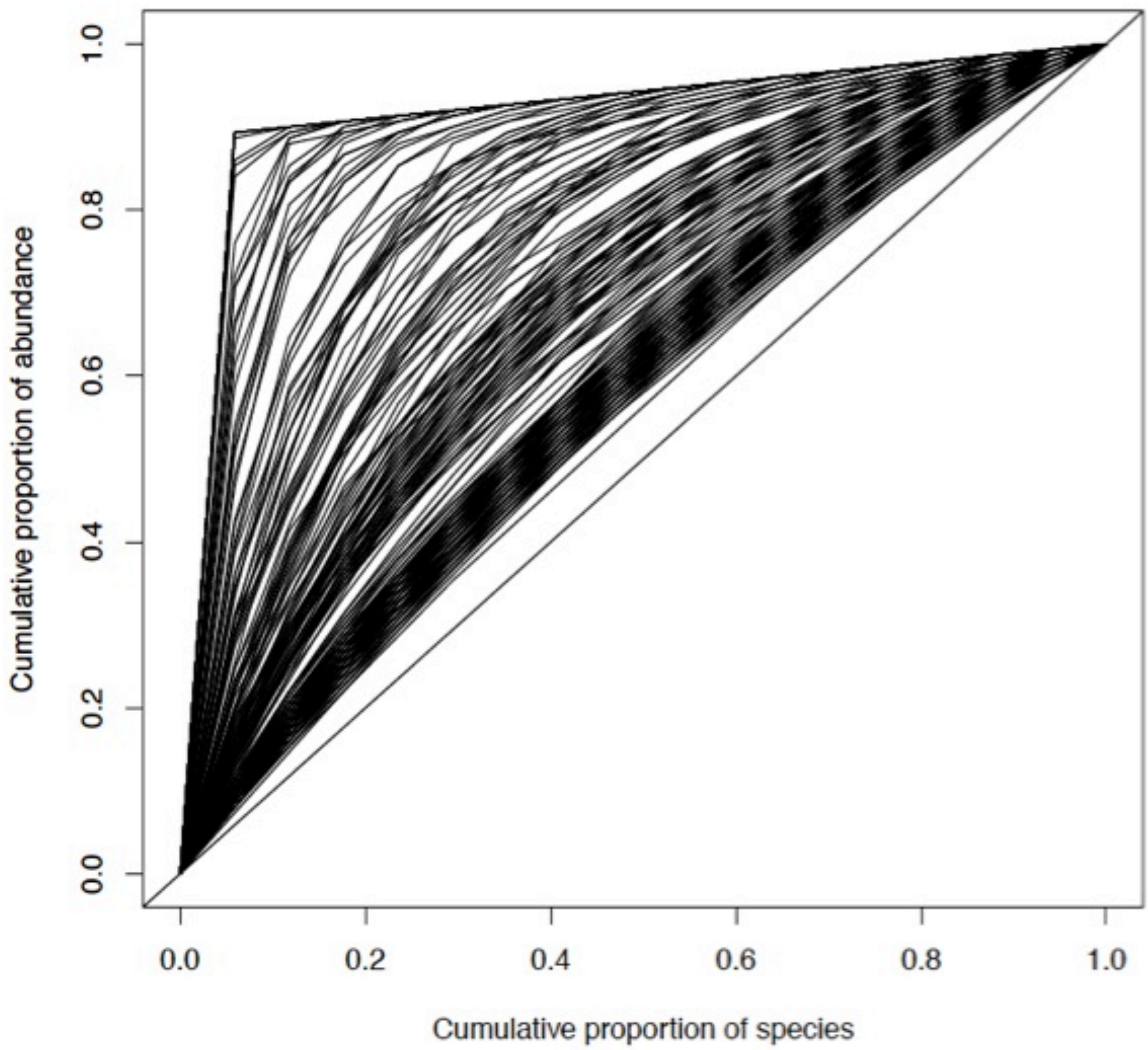
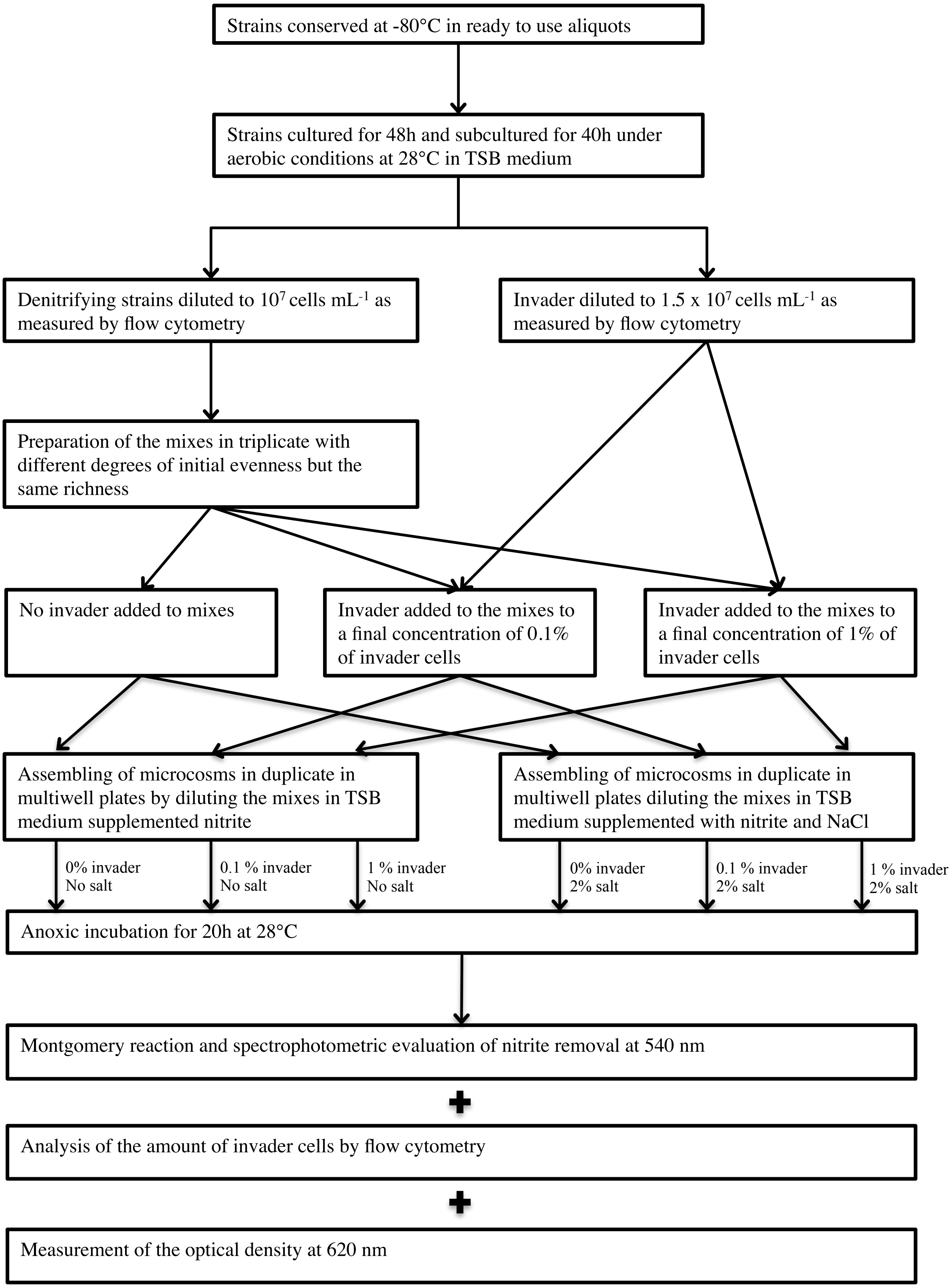
Supplementary Figure S1



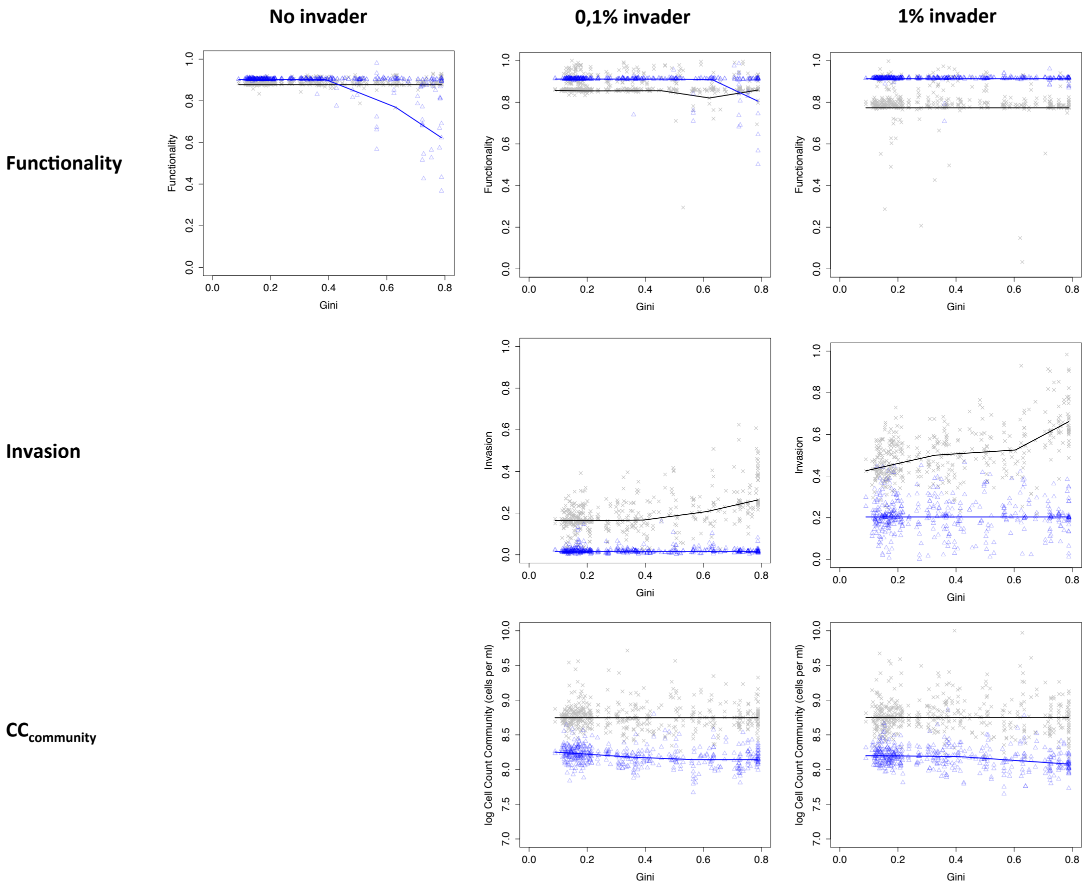
Supplementary Figure S1. Lorenz curves of the mixes used in the experiment. The curves span the entire region between high evenness and high dominance. Each curve can be numerically described by a Gini coefficient, being the area between the Lorenz curve and the line of the perfect evenness.

Supplementary Figure S2



Supplementary Figure S2. Overview of the experimental setup

Supplementary Figure S3



Supplementary Figure S3. Functionality, Invasion and $CC_{community}$ of the mixes in the absence (black line) and the presence of salt stress (blue line) under different initial invader concentrations (0%, 0,1% and 1%).

Supplementary Table S1

List of strains used to create the microcosms with different degrees of initial evenness and the invader strain.

Phylum	Collection Code	ID[a,b]	Functionality	Special characteristics
Firmicutes	R-32851	*Bacillus sp.*	denitrifier	
α Proteobacteria	R-27049	*Paracoccus sp.*	denitrifier	
	R-24665	*Paracoccus sp.*	denitrifier	
	R-26895	*Brucella sp.*	denitrifier	
	R-25018	*Ochrobactrum sp.*	denitrifier	
	R-25203	*Ochrobactrum sp.*	denitrifier	
β Proteobacteria	R-24607	*Acidovorax sp.*	denitrifier	
	R-25212	*Acidovorax sp.*	denitrifier	
	R-24610	*Diaphorobacter sp.*	denitrifier	
	R-26815	*Diaphorobacter sp.*	denitrifier	
	R-26829	*Comamonas sp.*	denitrifier	
	R-28220	*Comamonas sp.*	denitrifier	
	R-25060	*Comamonas sp.*	denitrifier	
	R-28413	*Comamonas sp.*	denitrifier	
γ Proteobacteria	R-25061	*Pseudomonas sp.*	denitrifier	
	R-26828	*Pseudomonas sp.*	denitrifier	
	R-25343	*Pseudomonas sp.*	denitrifier	
	-	*Pseudomonas putida* SM1699[⋆]	non-denitrifier	gfp labeled: *gfp*mut3b-gene randomly inserted in the chromosome[b]

[a] Heylen, K. *et al.* The incidence of *nirS* and *nirK* and their genetic heterogeneity in cultivated dentrifiers. Environmental Microbiology 8, 2012-2021 (2006)
[b] Sternberg, C. *et al.* Distribution of bacterial growth activity in flow-chamber biofilms. Applied and Environmental Microbiology 9, 4108-4117 (1999)
[⋆] This strain was used as invader

Supplementary Table S2

The tables show the p-values of the statistical tests for comparing the semiparametric models of the effect of Gini for the different invader and stress conditions. The part above the diagonal of each table shows the comparison of the two conditions for the response variable, while the part below the diagonal shows its p-value.

"n/a": Not applicable because the response variable was not determined for at least one of the conditions
"/": Not useful to compare the two conditions for this response variable
"I": Response variable 'Invasion'
"F": Response variable 'Functionality'
"C": Response variable '$CC_{community}$'
"S": Salt
"NS": No salt
★ For Gini values higher than 0.4

Invasion

	No Salt 0% inv	No Salt 0.1% inv	No Salt 1% inv	Salt 0% inv	Salt 0.1% inv	Salt 1% inv
No Salt, 0% inv		n/a	n/a	n/a	n/a	n/a
No Salt, 0.1% inv	n/a		$I_{(NS,0.1\%)}<I_{(NS,1\%)}$	n/a	$I_{(NS,0.1\%)}>I_{(S,0.1\%)}$	/
No Salt, 1% inv	n/a	p <0.001		n/a	/	$I_{(NS,1\%)}>I_{(S,1\%)}$
Salt, 0% inv	n/a	n/a	n/a		n/a	n/a
Salt, 0.1% inv	n/a	p <0.001	/	n/a		$I_{(S,0.1\%)}<I_{(S,1\%)}$
Salt, 1% inv	n/a	/	p <0.001	n/a	p <0.001	

Functionality

	No Salt 0% inv	No Salt 0.1% inv	No Salt 1% inv	Salt 0% inv	Salt 0.1% inv	Salt 1% inv
No Salt, 0% inv		$F_{(NS,0\%)} > F_{(NS,0.1\%)}$	$F_{(NS,0\%)} > F_{(NS,1\%)}$	$F_{(NS,0\%)} > F_{(S,0\%)}{}^{\star}$	/	/
No Salt, 0.1% inv	p <0.001		$F_{(NS,0.1\%)} > F_{(NS,1\%)}$	/	$F_{(NS,0.1\%)} < F_{(S,0.1\%)}$	/
No Salt, 1% inv	p <0.001	p <0.001		/	/	$F_{(NS,1\%)} < F_{(S,1\%)}$
Salt, 0% inv	p <0.001	/	/		$F_{(S,0\%)} < F_{(S,0.1\%)}$	$F_{(S,0\%)} < F_{(S,1\%)}$
Salt, 0.1% inv	/	p <0.001	/	p =0.048		$F_{(S,0.1\%)} < F_{(S,1\%)}$
Salt, 1% inv	/	/	p <0.001	p <0.001	p <0.001	

CC$_{community}$

	No Salt 0% inv	No Salt 0.1% inv	No Salt 1% inv	Salt 0% inv	Salt 0.1% inv	Salt 1% inv
No Salt, 0% inv		n/a	n/a	n/a	n/a	n/a
No Salt, 0.1% inv	n/a		$C_{(NS,0.1\%)} = C_{(NS,1\%)}$	n/a	$C_{(NS,0.1\%)} > C_{(S,0.1\%)}$	/
No Salt, 1% inv	n/a	p =0.365		n/a	/	$C_{(NS,1\%)} > C_{(S,1\%)}$
Salt, 0% inv	n/a	n/a	n/a		n/a	n/a
Salt, 0.1% inv	n/a	p <0.001	/	n/a		$C_{(S,0.1\%)} = C_{(S,1\%)}$
Salt, 1% inv	n/a	/	p <0.001	n/a	p =0.609	