

Microbial community changes correlate with impaired host fitness of *Aurelia aurita* after environmental challenge

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Tab. S1: Pairwise result of Log-rank test for survival. Log-rank test was used with the survival library (<https://cran.r-project.org/web/packages/survival/index.html>). Kaplan Meier test produced % of survival rates, chi-squares, and calculated the listed p-values for significance (< 0.05). Significance levels *, < 0.05; **, < 0.01; ns, not significant.

fitness trait: survival

comparison		p-value	significance
native normal	sterile normal	0.300	ns
native normal	native high salinity	0.250	ns
native normal	native high temperature	0.003	**
native normal	native future ocean	0.400	ns
sterile normal	sterile high salinity	0.020	*
sterile normal	sterile high temperature	0.010	*
sterile normal	sterile future ocean	0.200	ns
native high salinity	sterile high salinity	0.030	*
native high temperature	sterile high temperature	0.600	ns
native future ocean	sterile future ocean	0.200	ns

Tabs. S2-S6: PERMANOVA tests. Multivariate statistics were conducted using R for each fitness trait and the treatments growth, feeding, budding, segmentation, and ephyrae release for native and sterile conditions. PERMANOVA p-values are depicted with their corresponding significance levels *, < 0.05; **, < 0.01; ***, < 0.001; ns, not significant. PERMANOVA settings included Permutation test for adonis under reduced model, free Permutation, and 9999 No. of permutations adonis2.

Tab. S2

fitness trait: growth

	comparison	p-value	significance
native normal	sterile normal	0.001	***
native normal	native high salinity	0.001	***
native normal	native high temperature	0.001	***
native normal	native future ocean	0.001	***
sterile normal	sterile high salinity	0.001	***
sterile normal	sterile high temperature	0.001	***
sterile normal	sterile future ocean	0.002	**
native high salinity	sterile high salinity	0.001	***
native high temperature	sterile high temperature	0.012	*
native future ocean	sterile future ocean	0.042	*

Tab. S3

fitness trait: feeding

	comparison	p-value	significance
native normal	sterile normal	0.896	ns
native normal	native high salinity	0.030	*
native normal	native high temperature	0.036	*
native normal	native future ocean	0.592	ns
sterile normal	sterile high salinity	0.010	**
sterile normal	sterile high temperature	0.010	**
sterile normal	sterile future ocean	0.016	*
native high salinity	sterile high salinity	0.596	ns
native high temperature	sterile high temperature	0.498	ns
native future ocean	sterile future ocean	0.110	ns

Tab. S4

fitness trait: budding

	comparison	p-value	significance
native normal	sterile normal	0.001	***
native normal	native high salinity	0.001	***
native normal	native high temperature	0.001	***
native normal	native future ocean	0.001	***
sterile normal	sterile high salinity	0.001	***

sterile normal	sterile high temperature	0.001	***
sterile normal	sterile future ocean	0.001	***
native high salinity	sterile high salinity	0.775	ns
native high temperature	sterile high temperature	0.001	***
native future ocean	sterile future ocean	0.010	**

Tab. S5

fitness trait: segmentation

comparison		p-value	significance
native normal	sterile normal	0.001	***
native normal	native high salinity	0.001	***
native normal	native high temperature	0.001	***
native normal	native future ocean	0.001	***
sterile normal	sterile high salinity	0.001	***
sterile normal	sterile high temperature	0.001	***
sterile normal	sterile future ocean	0.001	***
native high salinity	sterile high salinity	0.002	**
native high temperature	sterile high temperature	0.001	***
native future ocean	sterile future ocean	0.007	**

Tab. S6

fitness trait: ephyrae release

comparison		p-value	significance
native normal	sterile normal	0.001	***
native normal	native high salinity	0.001	***
native normal	native high temperature	0.001	***
native normal	native future ocean	0.001	***
sterile normal	sterile high salinity	0.002	**
sterile normal	sterile high temperature	0.001	***
sterile normal	sterile future ocean	0.001	***
native high salinity	sterile high salinity	0.003	**
native high temperature	sterile high temperature	0.897	ns
native future ocean	sterile future ocean	0.002	**

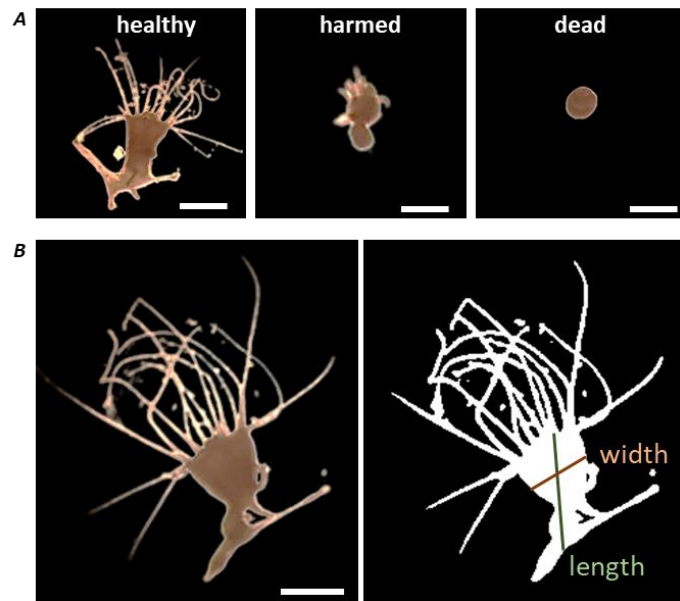


Fig. S1: Monitoring polyp fitness traits survival and growth. (A) Polyps categorized as healthy, harmed, and dead based on their phenotypical appearance. Healthy and harmed are alive polyps. (B) Example original photograph of an alive polyp (left panel) and its black/white projection (right panel) showing the axes for length and width measurement of the calyx.