

## SUPPLEMENTARY MATERIAL

### *Literature search*

We focused our efforts to retrieve literature containing data on bacterioplankton community composition in the Baltic Sea and if available compositional data coupled with activity measurements such as bacterial heterotrophic production or similar uptake rates or enzymatic activity. The search term for our systematic map-like literature review was “"Baltic Sea" AND (microb\* OR bacteri\* OR archaea\*) AND (sequenc\* OR 16s OR rna OR dna OR \*omic\*)” resulting in 477 hits and “TITLE-ABS-KEY("Baltic Sea" AND (microb\* OR bacteri\* OR archaea\*) AND (sequenc\* OR 16s OR rna OR dna OR \*omic\*))” resulting in 368 hits, WoS core collection and Scopus, respectively searched by Markus V. Lindh at Lund University, Department of Biology 20180125 11:00. We excluded duplicates and made abstract and title screening to exclude studies not on topic and found potentially relevant studies and downloaded the full texts of these. We next made a critical appraisal of included study quality of these papers to retrieve the most relevant field studies and experimental studies (n=86; **Table 1**). From these studies we selected experimental studies with empirical evidence of statistically tested effects of different disturbances on shifts in total bacterioplankton community composition and functioning and found 9 papers.

To check for published reports on bacterioplankton community composition with samples obtained in the nearby Kattegat and Skagerrak seas on the west coast of Sweden we also performed a second search to emphasize the notable lack of studies investigating bacterioplankton community composition and functioning from these seas. The search term for this second literature search was: “((Kattegat\* OR Skager\*) AND ((microb\* OR bacteri\* OR archaea\*)) AND (((sequenc\* OR 16s) OR rna) OR dna) OR \*omic\*))”, WoS core collection searched by Markus Lindh 20180128 12:00 resulting in 33 hits of which only 11 papers contained data on bacterioplankton community composition and 5 of these was already

included in the present review, see supplementary **Table S1**. However, specific details on these waters from the retrieved additional literature search were not included in the present systematic map-like literature review for in-depth analyses as this review is focused on the Baltic Sea.

**Supplementary Table 1.** Studies found with samples from the Skagerrak or Kattegat Sea in which data on bacterioplankton community composition is available (n=11).

<b>Study</b>	<b>Comment</b>
Eiler, A., Johansson, M. & Bertilsson, S. (2006).	This review
Gomez-Consarnau, L., Lindh, M.V., Gasol, J.M. & Pinhassi, J. (2012).	This review
Hagström, Å., Pinhassi, J. & Zweifel, U.L. (2000).	This review
Parkes, R. J., Cragg, B. A., Banning, N. , Brock, F. , Webster, G. , et al. (2007)	Added reference
Pinhassi, J., Winding, A., Binnerup, S.J., Zweifel, U.L., Riemann, B. & Hagström, Å. (2003).	Added reference
Riemann, L. and Middelboe. M (2002)	Added reference
Reyes, C., Schneider, D., Thürmer, A., Kulkarni, A., Lipka, M., Szejtjenszus, S.Y. et al. (2017).	This review
Sjöstedt, J., Koch-Schmidt, P., Pontarp, M., Canback, B., Tunlid, A., Lundberg, P. et al. (2012).	This review
Thomsen TR, Finster K, Ramsing NB. (2001)	Added reference
Trimmer M, Engström P, Thamdrup B. (2013)	Added reference
Vandieken, V., Pester, M., Finke, N., Hyun, J.-H., Friedrich, M.W., Loy, A. et al. (2012).	Added reference

## SUPPLEMENTARY REFERENCES

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- Hagström, Å., Pinhassi, J., and Zweifel, U.L. (2000). Biogeographical diversity among marine bacterioplankton. *Aquat Microb Ecol* 21, 231-244.
- Lasse, R., and Mathias, M. (2002). Stability of bacterial and viral community compositions in Danish coastal waters as depicted by DNA fingerprinting techniques. *Aquat Microb Ecol* 27, 219-232.
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- Pinhassi, J., Winding, A., Binnerup, S.J., Zweifel, U.L., Riemann, B., and Hagström, Å. (2003). Spatial variability in bacterioplankton community composition at the Skagerrak-Kattegat Front. *Mar Ecol Prog Ser* 255, 1-13.
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- Sjöstedt, J., Koch-Schmidt, P., Pontarp, M., Canback, B., Tunlid, A., Lundberg, P., Hagström, Å., and Riemann, L. (2012). Recruitment of members from the rare biosphere of

marine bacterioplankton communities after an environmental disturbance. *Appl Environ Microbiol* 78, 1361-1369.

Thomsen, T.R., Finster, K., and Ramsing, N.B. (2001). Biogeochemical and molecular signatures of anaerobic methane oxidation in a marine sediment. *Appl Environ Microbiol* 67, 1646-1656.

Trimmer, M., Engström, P., and Thamdrup, B. (2013). Stark contrast in denitrification and anammox across the deep Norwegian trench in the Skagerrak. *Appl Environ Microbiol* 79, 7381-7389.

Vandieken, V., Pester, M., Finke, N., Hyun, J.-H., Friedrich, M.W., Loy, A., and Thamdrup, B. (2012). Three manganese oxide-rich marine sediments harbor similar communities of acetate-oxidizing manganese-reducing bacteria. *ISME J* 6, 2078.