

Lower *Vibrio* spp. abundances in *Zostera marina* leaf canopies suggest a novel ecosystem function for temperate seagrass beds

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- **Accelerated Proofreading:** Examine long technical texts in a fraction of the usual time.
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Manuscript Source: <https://www.biorxiv.org/content/10.1101/2021.03.21.436319v1>

Manuscript Authors: Thorsten B.H. Reusch, Philipp R. Schubert, Silke-Mareike Marten, Diana Gill, Rolf Karez, Kathrin Busch & Ute Hentschel

Features of the Sentence Audit:

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1. Each sentence of your text is parsed and displayed in isolation for focused inspection.
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Comments and Caveats:

- The sentence parsing is achieved using a prototype natural language processing pipeline written in Python and may include occasional errors in sentence segmentation.
- Depending on the source of the input text, the Sentence Audit may contain occasional html artefacts that are parsed as sentences (E.g. "Download figure. Open in new tab").
- Always consult the original research paper as the true reference source for the text.

Contact Information:

To get a Manuscript Microscope Sentence Audit of any other research paper, simply forward any copy of the text to John.James@OxfordResearchServices.com.

All queries, feedback or suggestions are also very welcome.

Research Paper Sections:

The sections of the research paper input text parsed in this audit.

[illegible]

The Sentence Audit Of The Research Paper

Title **Lower *Vibrio* spp.**

S0 [001] abundances in *Zostera marina* leaf canopies suggest a novel ecosystem function for temperate seagrass beds

abundances ...

... in *Zostera marina* leaf canopies suggest a novel ecosystem function ...

... for temperate seagrass beds

S1 [002] **Abstract**

S1 [003] Seagrasses, a polyphyletic group of about 60 marine angiosperm species, are the foundation of diverse and functionally important marine habitats along sheltered sedimentary coasts.

Seagrasses, ...

... a polyphyletic group ...

... of about 60 marine angiosperm species, ...

... are the foundation ...

... of diverse ...

... and functionally important marine habitats ...

... along sheltered sedimentary coasts.

S1 [004] As a novel ecological function with high societal relevance, a role of the leaf canopy for reducing potentially harmful bacteria has recently been hypothesized.

As a novel ecological function ...

... with high societal relevance, ...

... a role ...

... of the leaf canopy ...

... for reducing potentially harmful bacteria has recently been hypothesized.

S1 [005] Accordingly, we tested whether or not the abundance of general bacteria and more specifically, those belonging to the genus *Vibrio* were reduced within temperate *Zostera marina* (eelgrass) meadows compared to adjacent sand flats and sampled 5 sites in the south-western Baltic Sea using SCUBA.

Accordingly, ...

... we tested ...

... whether ...

... or not the abundance ...

... of general bacteria ...

... and more specifically, ...

... those belonging ...

... to the genus *Vibrio* were reduced ...

... within temperate *Zostera marina* ...

... (eelgrass) ...

... meadows compared ...

... to adjacent sand flats ...
... and sampled 5 sites ...
... in the south-western Baltic Sea ...
... using SCUBA.

S1 [006] Compared to non-vegetated area, we found an average reduction of 39% for all *Vibrio* and 63% for the potentially harmful *V. vulnificus/cholerae* subtype based on robust plate counting data on *Vibrio* selective agar.

Compared ...
... to non-vegetated area, ...
... we found an average reduction ...
... of 39% ...
... for all *Vibrio* ...
... and 63% ...
... for the potentially harmful *V. vulnificus/cholerae* subtype based ...
... on robust plate counting data ...
... on *Vibrio* selective agar.

S1 [007] The underlying mechanism is currently elusive and clearly merits further study.

The underlying mechanism is currently elusive ...
... and clearly merits further study.

S1 [008] Our results underline the critical importance of seagrasses in maintaining shallow water ecosystem functioning including water quality and provide further motivation for their protection and restoration.

Our results underline the critical importance ...
... of seagrasses ...
... in maintaining shallow water ecosystem functioning including water quality ...
... and provide further motivation ...
... for their protection ...
... and restoration.

S2 [009] 1 Introduction

S2 [010] Marine angiosperms, or seagrasses, are the foundation of some of the most valuable coastal marine ecosystems, seagrass beds (1).

Marine angiosperms, ...
... or seagrasses, ...
... are the foundation ...
... of some of the most valuable coastal marine ecosystems, ...
... seagrass beds ...
... (1).

S2 [011] As ecosystem engineers, their presence turns sedimentary bottoms with mostly infauna into a habitat featuring a rich diversity of associated animals and plants, along with substantial ecosystem services such as nursery areas, coastal protection and local carbon sequestration (2, 3).

As ecosystem engineers, ...
... their presence turns sedimentary bottoms ...
... with mostly infauna ...
... into a habitat featuring a rich diversity ...
... of associated animals ...
... and plants, ...
... along with substantial ecosystem services ...
... such as nursery areas, ...
... coastal protection ...
... and local carbon sequestration ...
... (2, 3)...
... .

S2 [012] Among the many ecological services associated with seagrasses, the reduction of potentially harmful bacteria in the water column has recently been described for tropical seagrass beds (4).

Among the many ecological services associated ...
... with seagrasses, ...
... the reduction ...
... of potentially harmful bacteria ...
... in the water column has recently been described ...
... for tropical seagrass beds ...
... (4).

S2 [013] Lamb et al. (2017) showed that both, the abundance of possible human pathogenic bacteria as well as bacterial strains infecting marine invertebrates, were reduced in coral reef areas of the Indo-Pacific region with neighboring intact seagrass beds.

Lamb et al. ...
... (2017) ...
... showed ...
... that both, ...
... the abundance ...
... of possible human pathogenic bacteria ...
... as well ...
... as bacterial strains infecting marine invertebrates, ...
... were reduced ...
... in coral reef areas ...
... of the Indo-Pacific region ...
... with neighboring intact seagrass beds.

S2 [014] We were interested whether this effect is of general nature, and would also apply to temperate seagrasses of the northern hemisphere (5).

We were interested ...
... whether this effect is ...
... of general nature, ...
... and would also apply ...

... to temperate seagrasses ...
... of the northern hemisphere ...
... (5).

S2 [015] Hence, we studied the effects of a leaf canopy of the widespread temperate seagrass *Zostera marina* (eelgrass) on water column abundance of *Vibrio* spp.

Hence, ...
... we studied the effects ...
... of a leaf canopy ...
... of the widespread temperate seagrass *Zostera marina* ...
... (eelgrass) ...
... on water column abundance ...
... of *Vibrio* spp.

S2 [016] bacteria, an abundant and diverse bacterial group thriving in marine waters that are generally favored by global warming and seawater freshening (6, 7).

bacteria, ...
... an abundant ...
... and diverse bacterial group thriving ...
... in marine waters ...
... that are generally favored ...
... by global warming ...
... and seawater freshening ...
... (6, 7)...
... .

S2 [017] This applies particularly to our study region, the Baltic Sea, where *Vibrio* spp.

This applies particularly ...
... to our study region, ...
... the Baltic Sea, ...
... where *Vibrio* spp.

S2 [018] abundances have already increased in the past decades due to sea surface temperature increase (6, 8), with a rate that is substantially higher than the predicted global ocean warming (9).

abundances have already increased ...
... in the past decades ...
... due to sea surface temperature increase ...
... (6, 8)...
... , ...
... with a rate ...
... that is substantially higher ...
... than the predicted global ocean warming ...
... (9).

S2 [019] It is therefore concerning that environmental conditions are predicted to become even more conducive to further expansion of *Vibrio* due to freshening of the brackish water body (10, 11).

It is therefore concerning ...

End of Sample Audit

This is a truncated Manuscript Microscope Sample Audit.

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