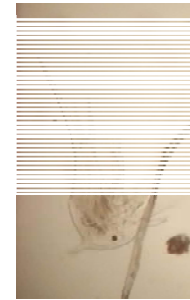
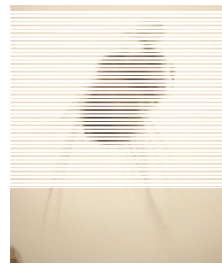
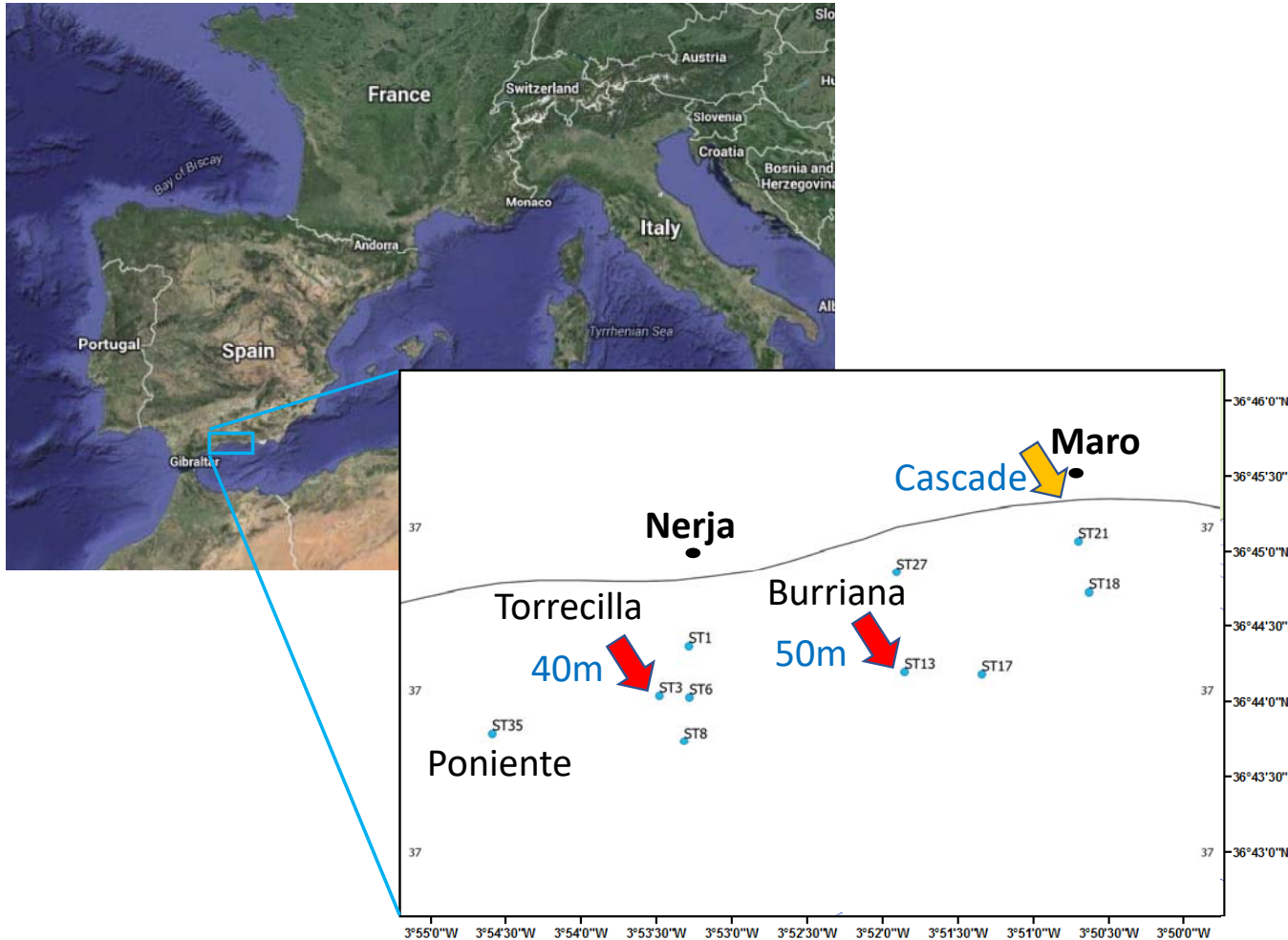


Characterization of microzooplankton communities in a polluted coastal area integrating high-throughput sequencing and microscopy



L. Yebra, I. Ferrera, A.M. Cabello, M. Domínguez, J. Vannini, G. Belmonte, N. Valcárcel-Pérez, C. García-Gómez, F. Gómez-Jakobsen, R. Stern, J.M. Mercado

Study area



Sampling stations location



SUR

El fondo marino de Nerja acumula nueve toneladas de toallitas por los vertidos sin depurar

9 tonnes of used wet wipes lying on the seabed

A sewage outlet clogged with wipes off the Nerja coastline. :: SUR

Untreated sewage is discharged to the sea at 3 separate points

Multidisciplinary and integrative approach

- Environmental variables: T, S, nutrients, Chl a
- Microzooplankton sampling and composition analysis:

Niskin bottles (3-200 um)

Surface waters – frozen filters

Metabarcoding 18S v9



CalVET net (50-200 um)

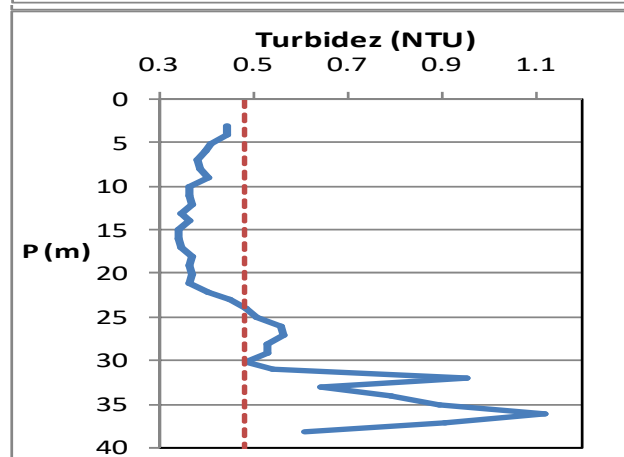
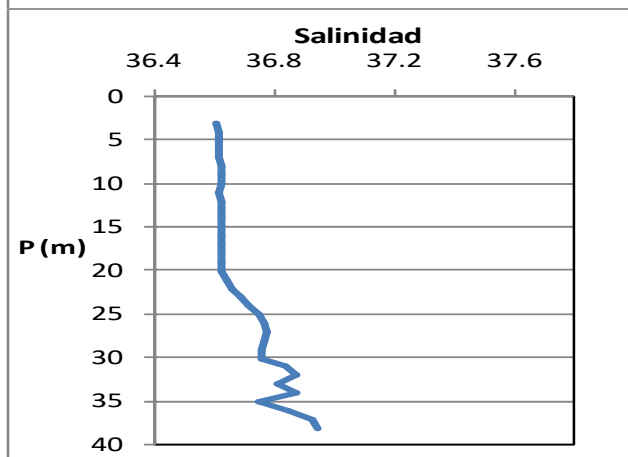
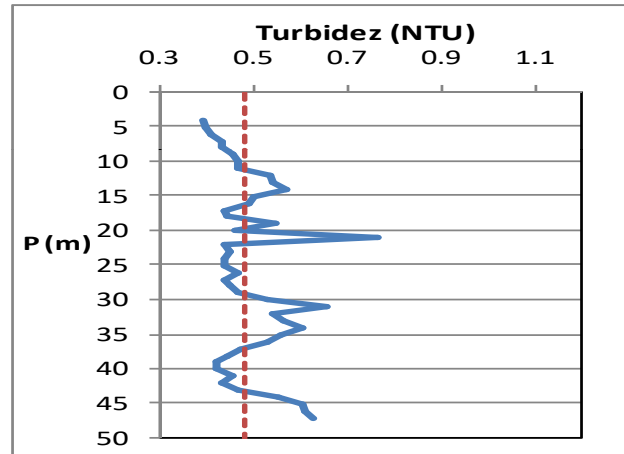
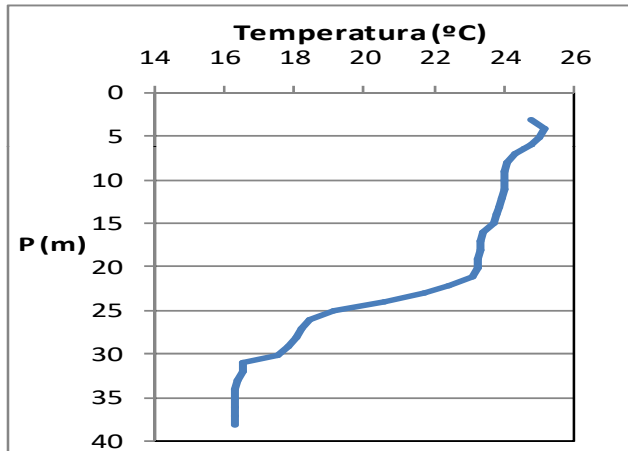
Vertical hauls, bottom to surface – etOH

Microscopy

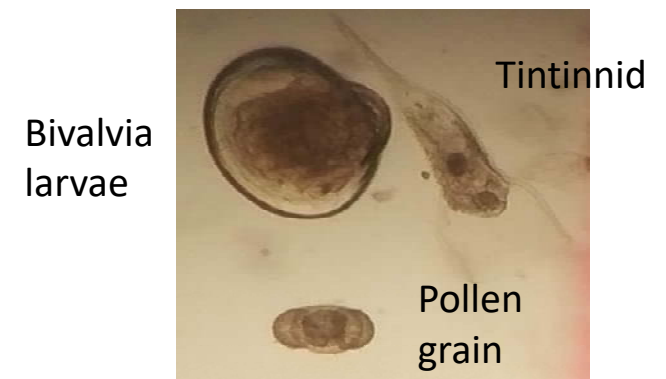
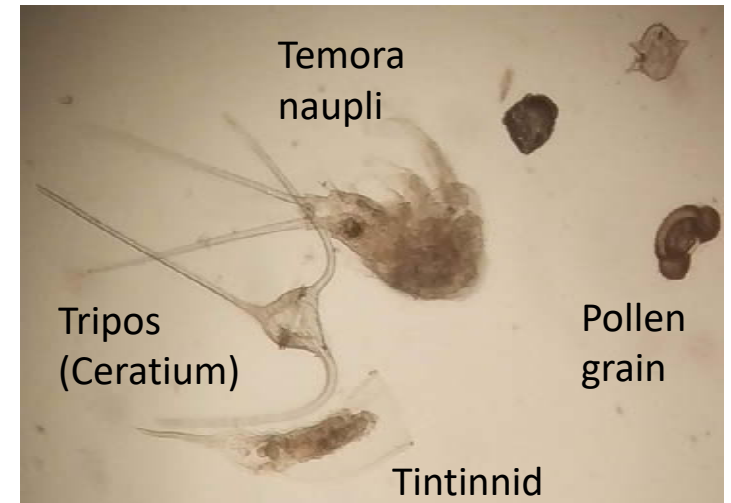
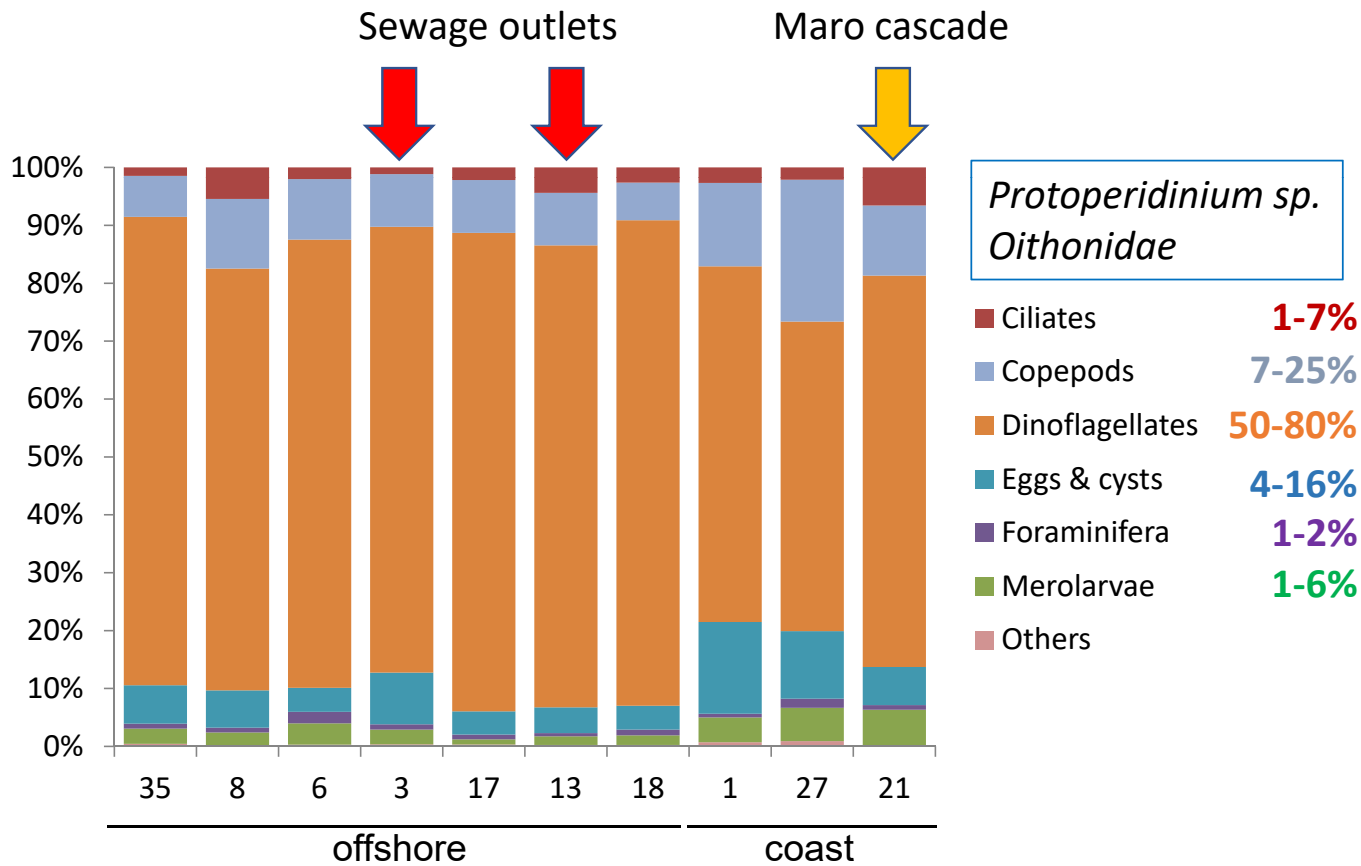


Metabarcoding COI, 18S v4 (work in progress)

Environmental variability

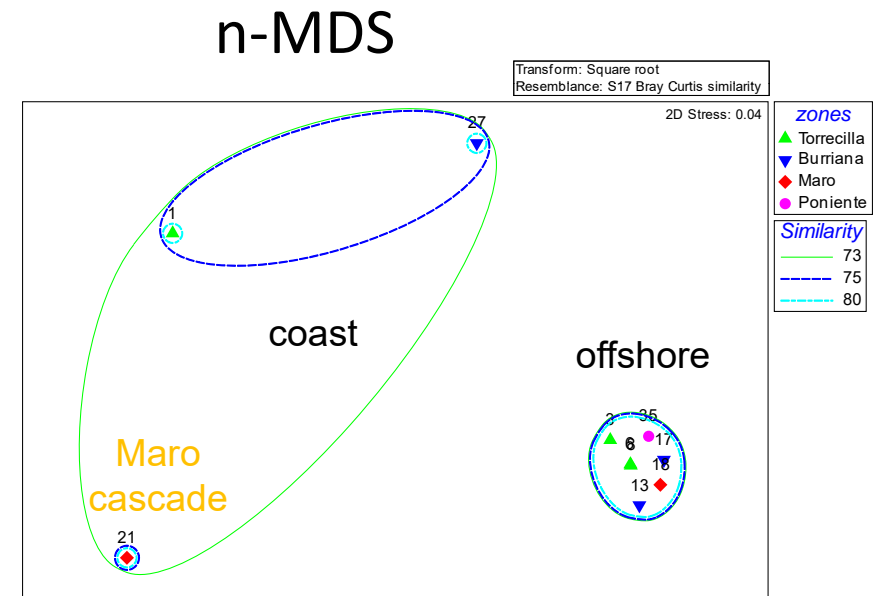
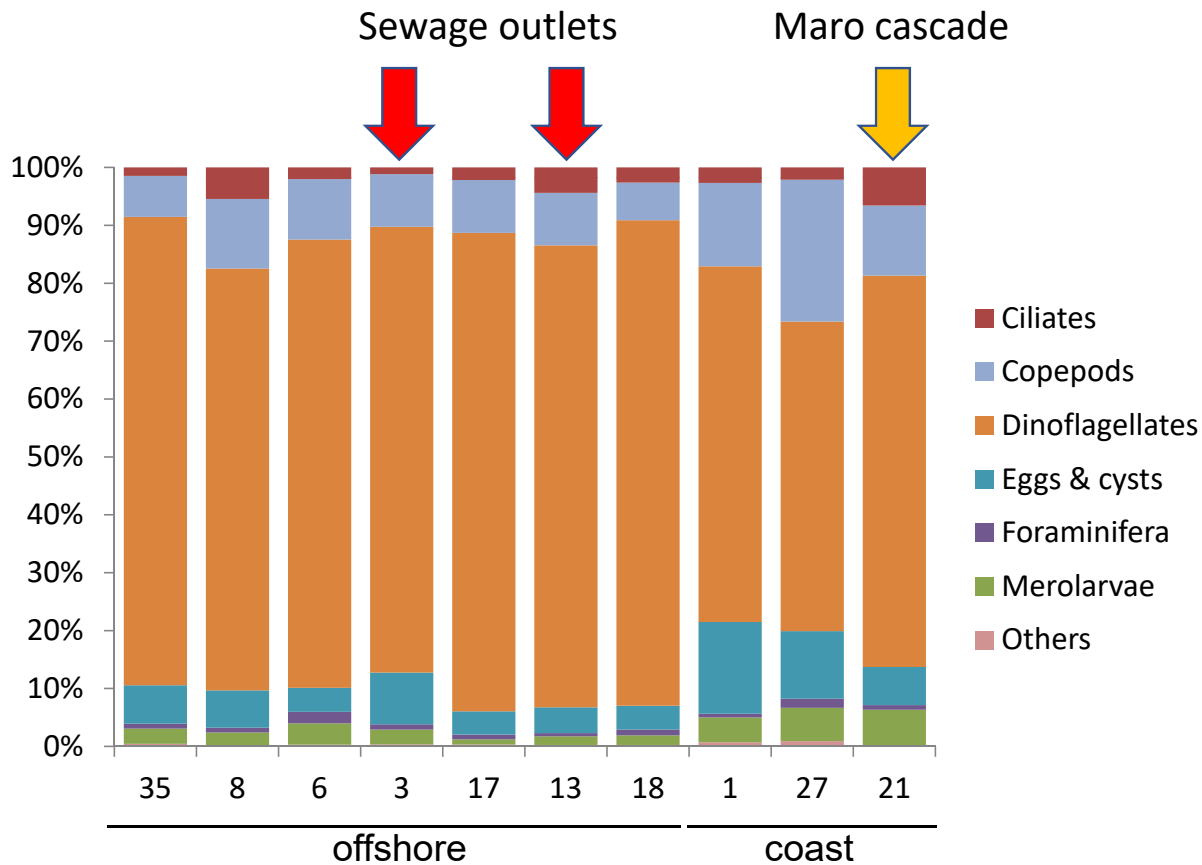


Microzooplankton relative abundances identified by microscopy



Taxa with abundance <1% were grouped in Others.

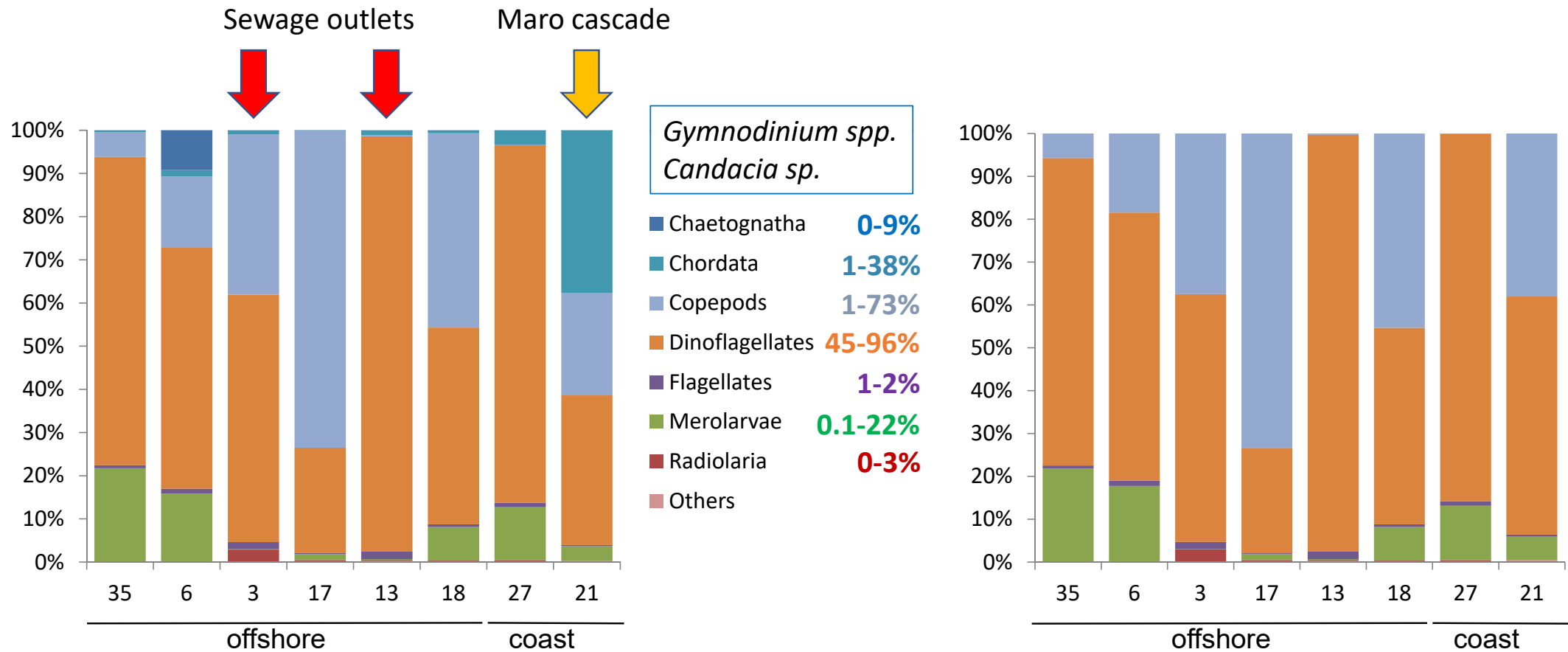
Microzooplankton relative abundances identified by microscopy



Significant differences between zones:
Coast <20 m bottom depth
Offshore 20-60 m bottom depth

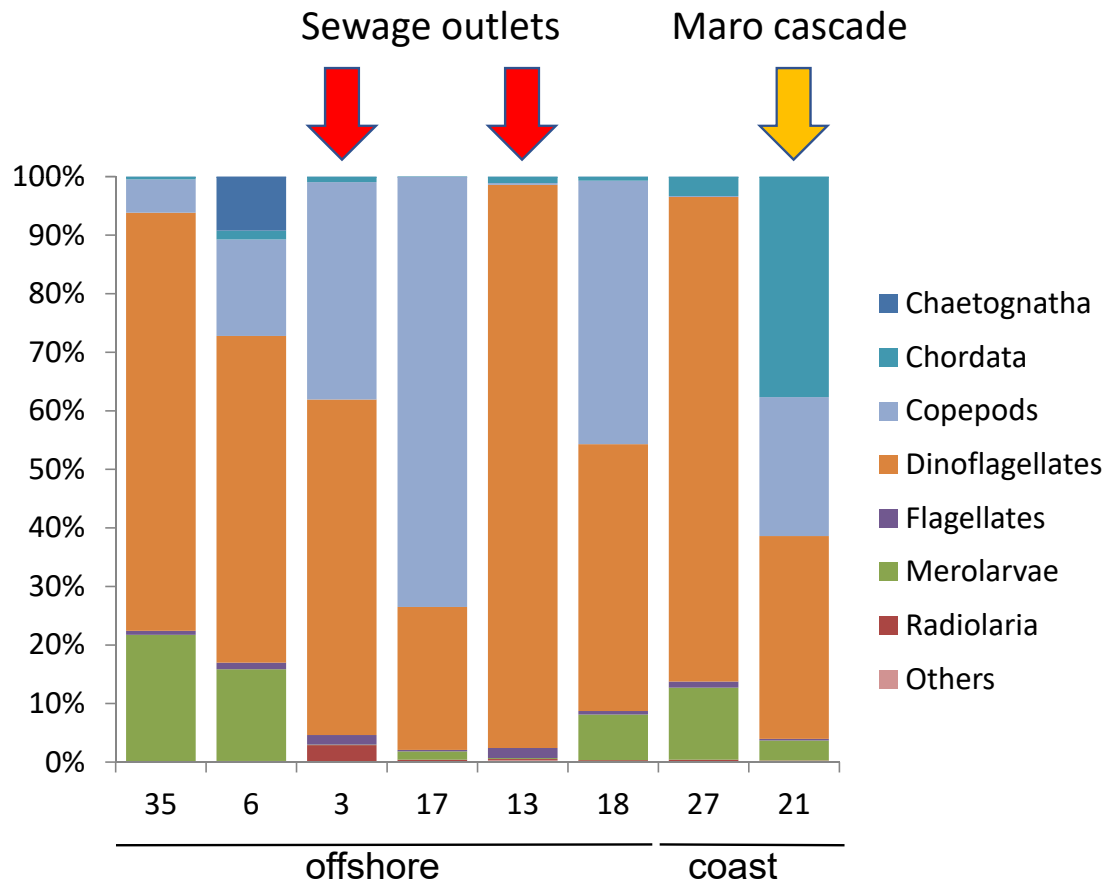
Taxa with abundance <1% were grouped in Others.

Microzooplankton relative abundances identified by 18S v9

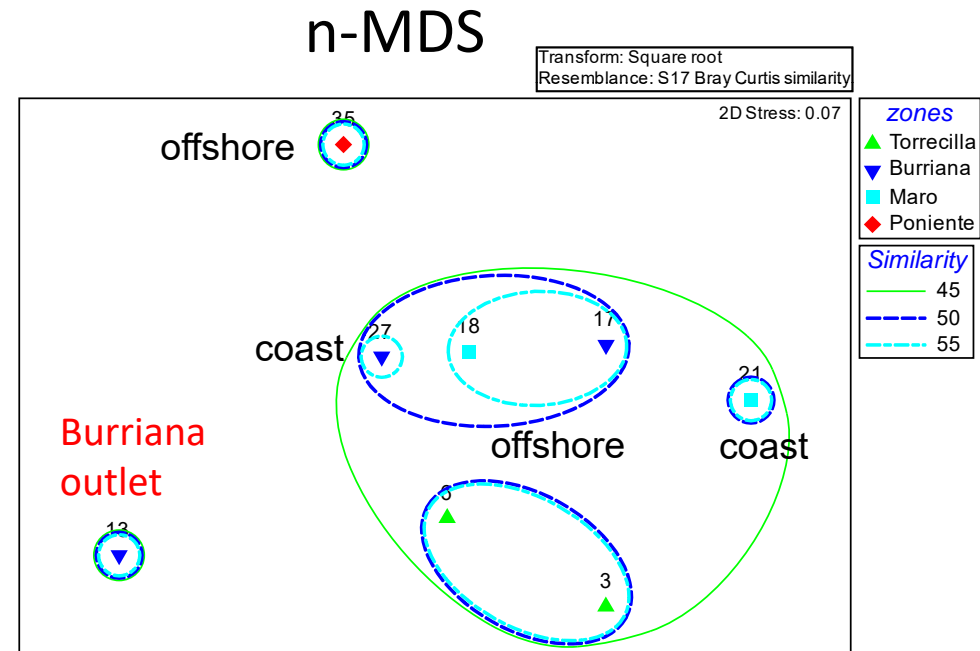


Taxa with abundance <1% were grouped in Others.

Microzooplankton relative abundances identified by 18S v9

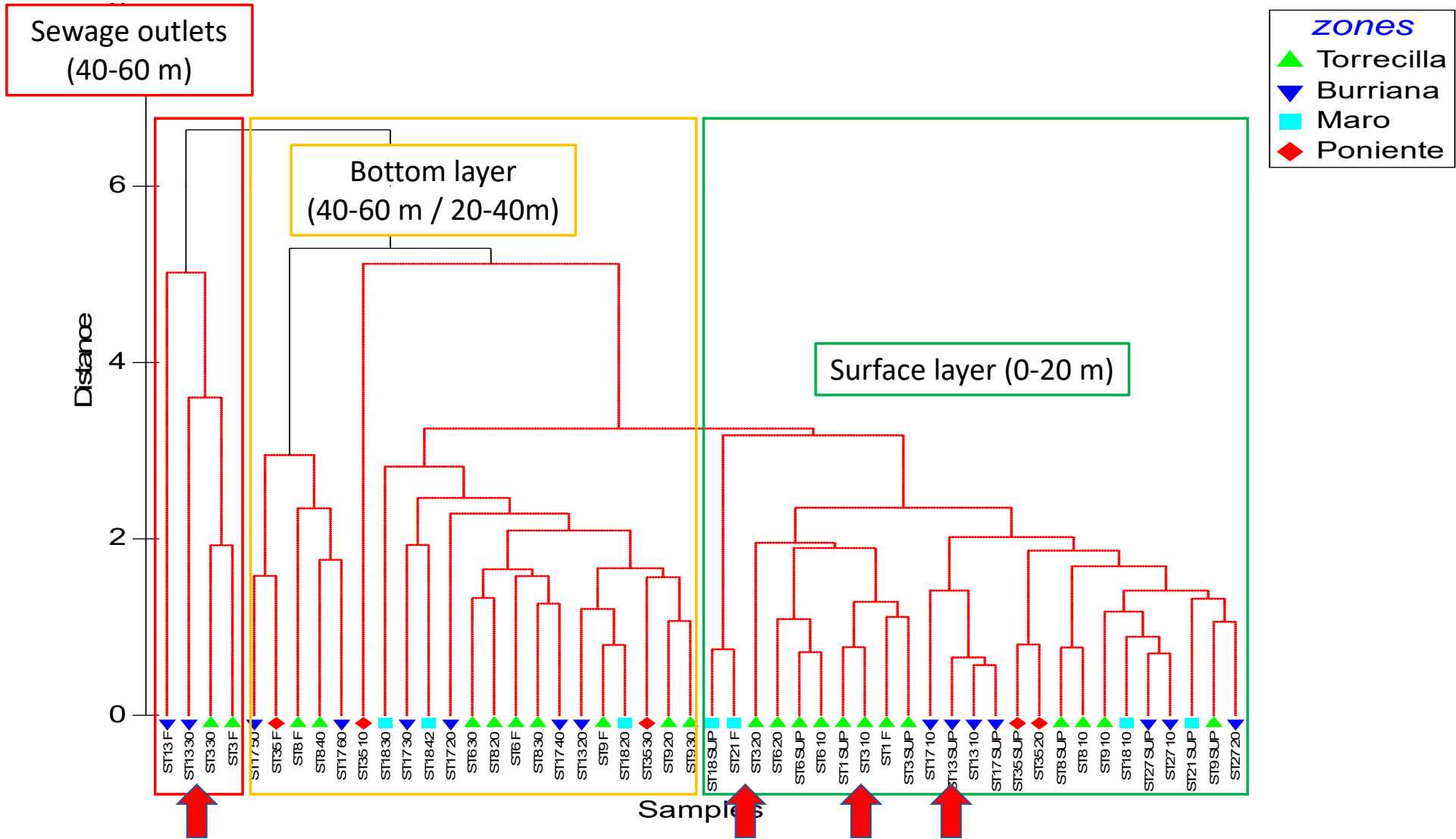


Taxa with abundance <1% were grouped in Others.



Surface waters:
No significant differences between zones

Environmental variability



Summary

- Summer stratification prevented bottom pollution spreading to the surface
- Environmental variables and microzooplankton community structure variability were driven by stratification and pollution
- Both surface and water column samples were dominated by dinoflagellates, but different species
- Need to account for mismatch between metazoans contribution to metabarcoding reads and microscopic counts

Work in progress...

- Comparison of CalVET samples metabarcoding with microscopy
- Separated protozoans and metazoans data analysis

Acknowledgements



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