Let there be Light: Marine Oil Snow formation and its associated Bacterial Communities.

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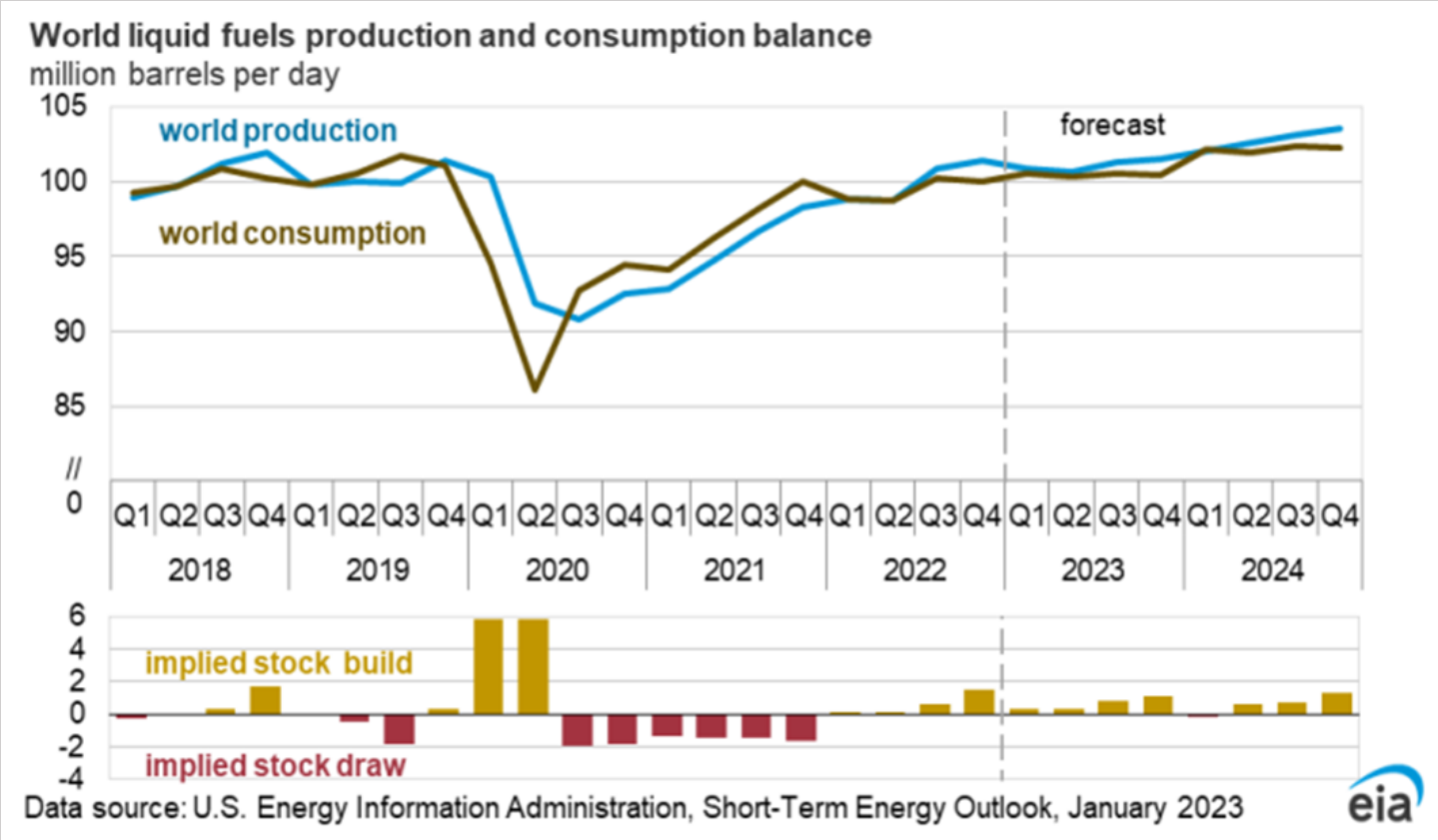
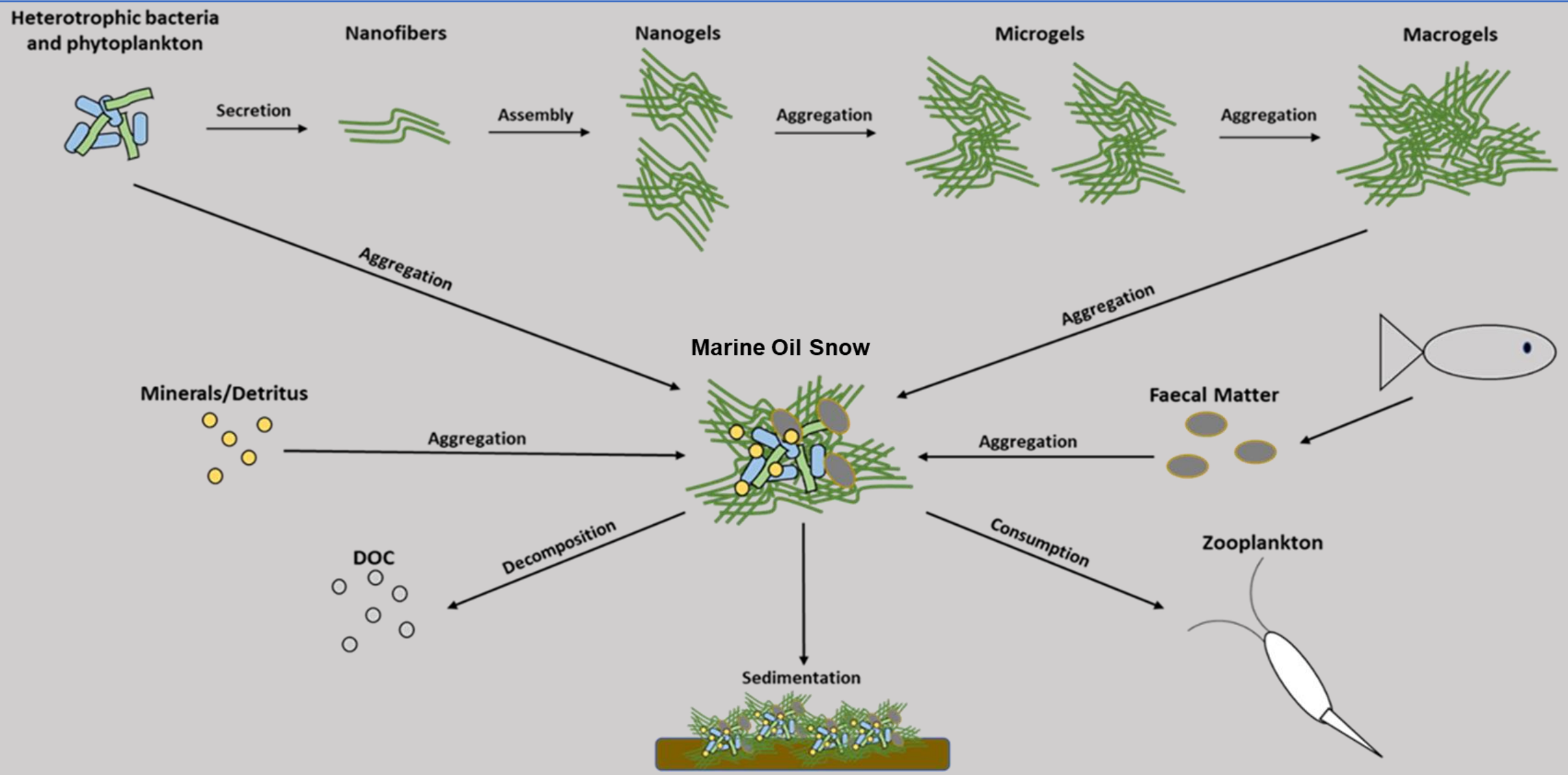
Why is this important?

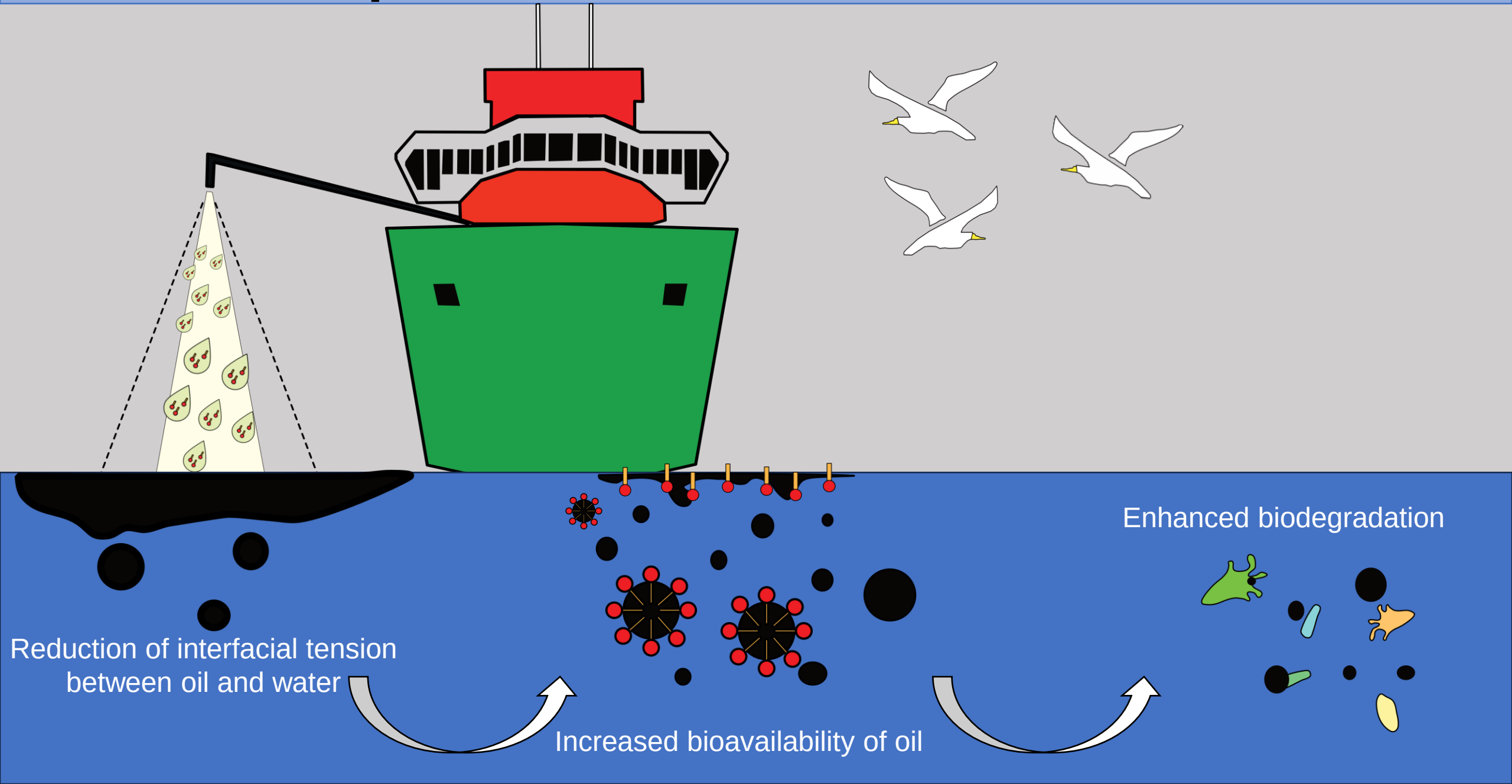
- Steady increase from 73 to above 100 million barrels per day since 2010
- Forecast to stay above 100 million barrels per day throughout 2023 and 2024
- 35% rise in volume of oil from 2.5 to 3.3 billion barrels per year in need of transport



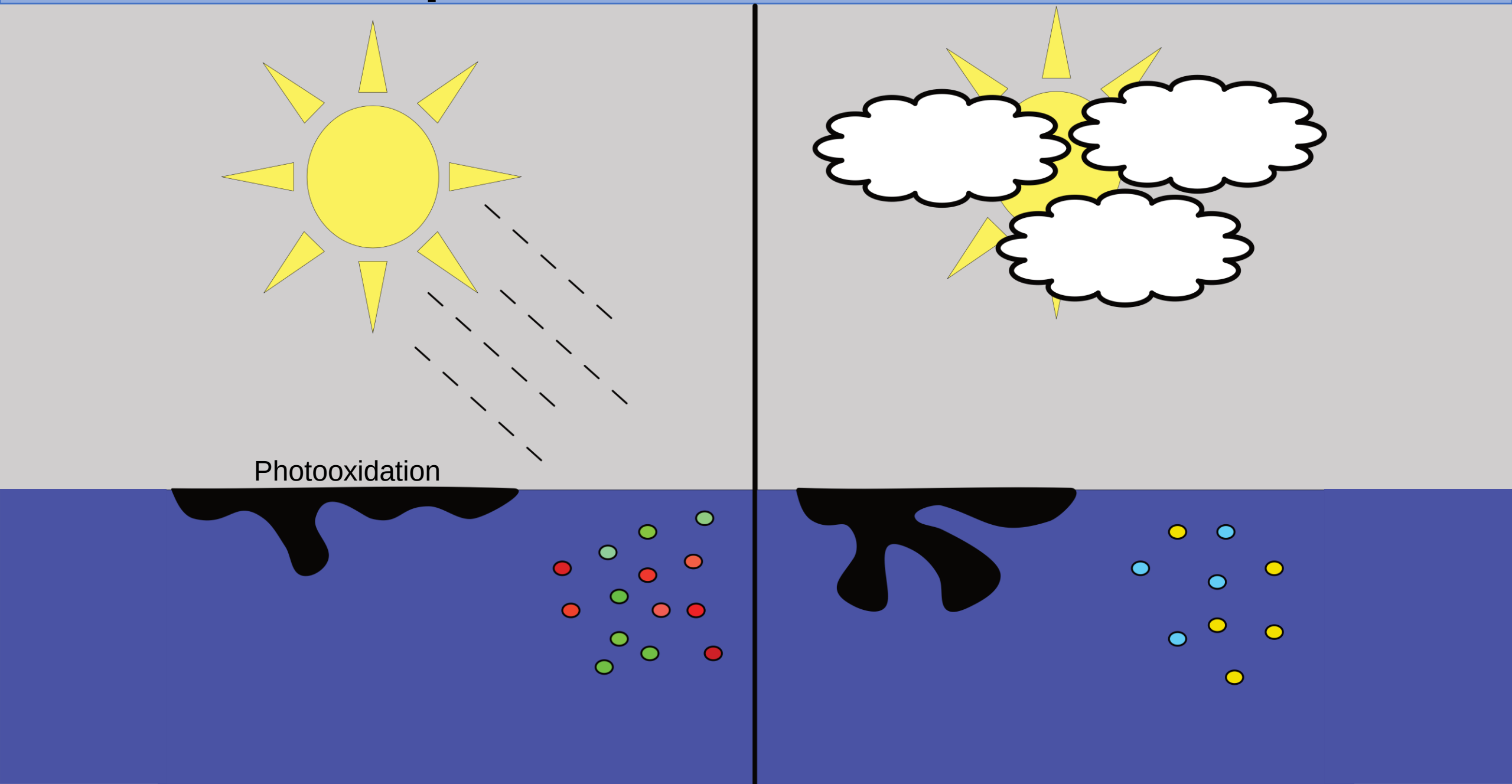
Marine Oil Snow



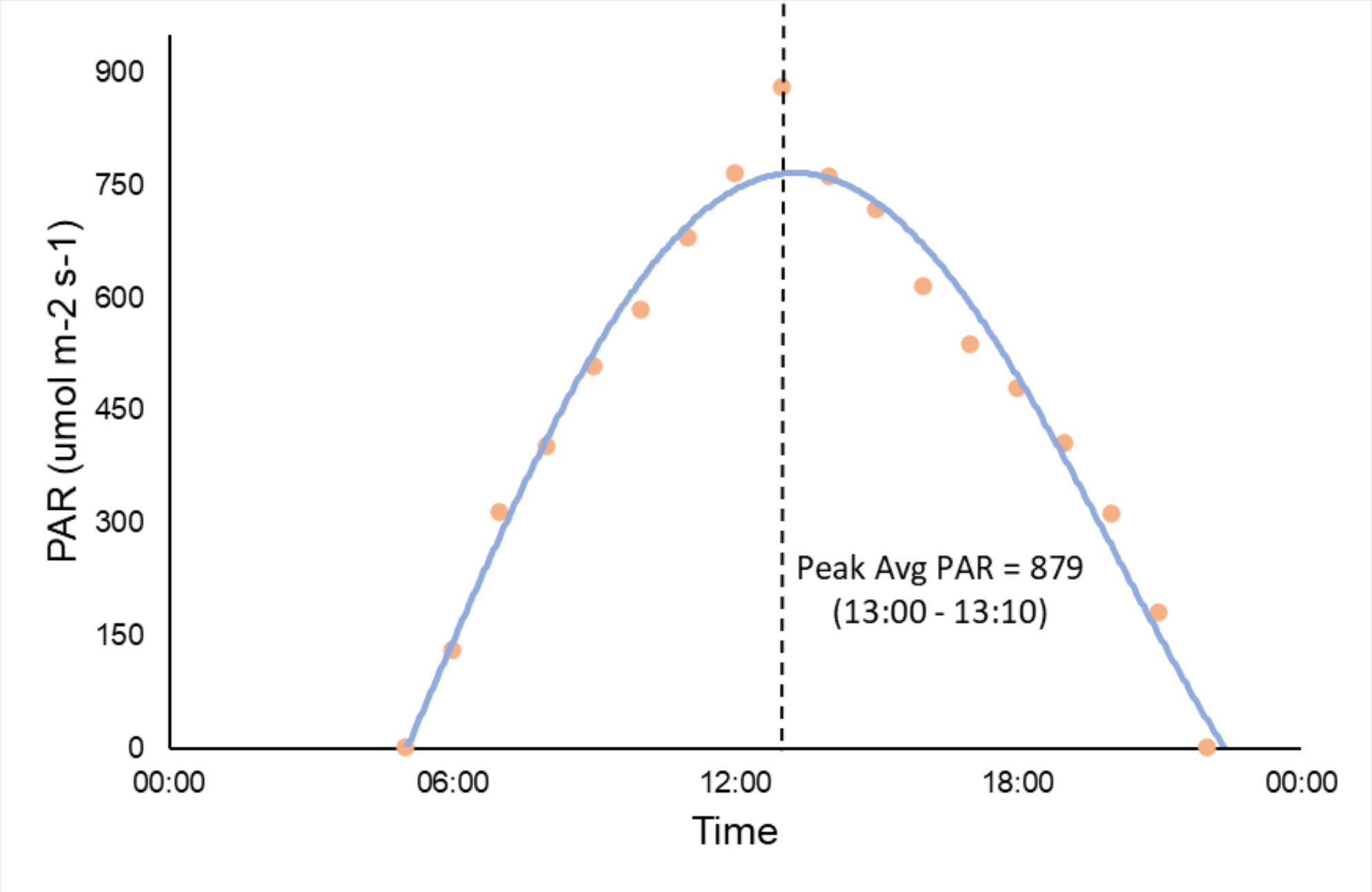
Chemical Dispersion



So, what is the problem?



Experimental Design



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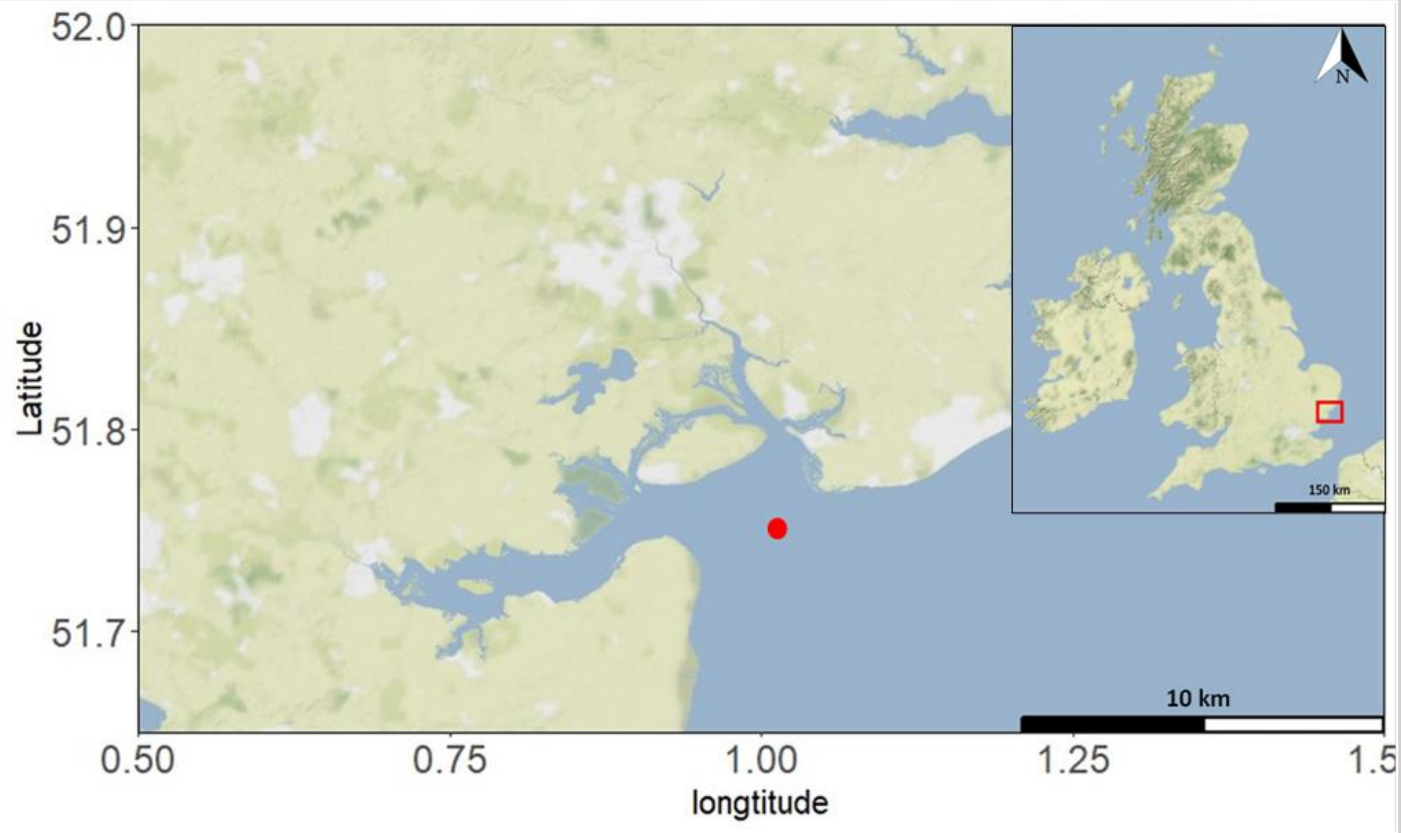
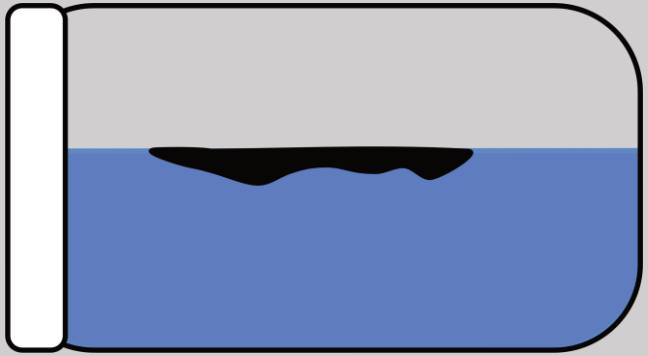


Microcosms:

- 400ml natural seawater
- 40ul 100ppm NGS-NS crude oil (100 ppm)
- 2ul Corexit 9500 chemical dispersant



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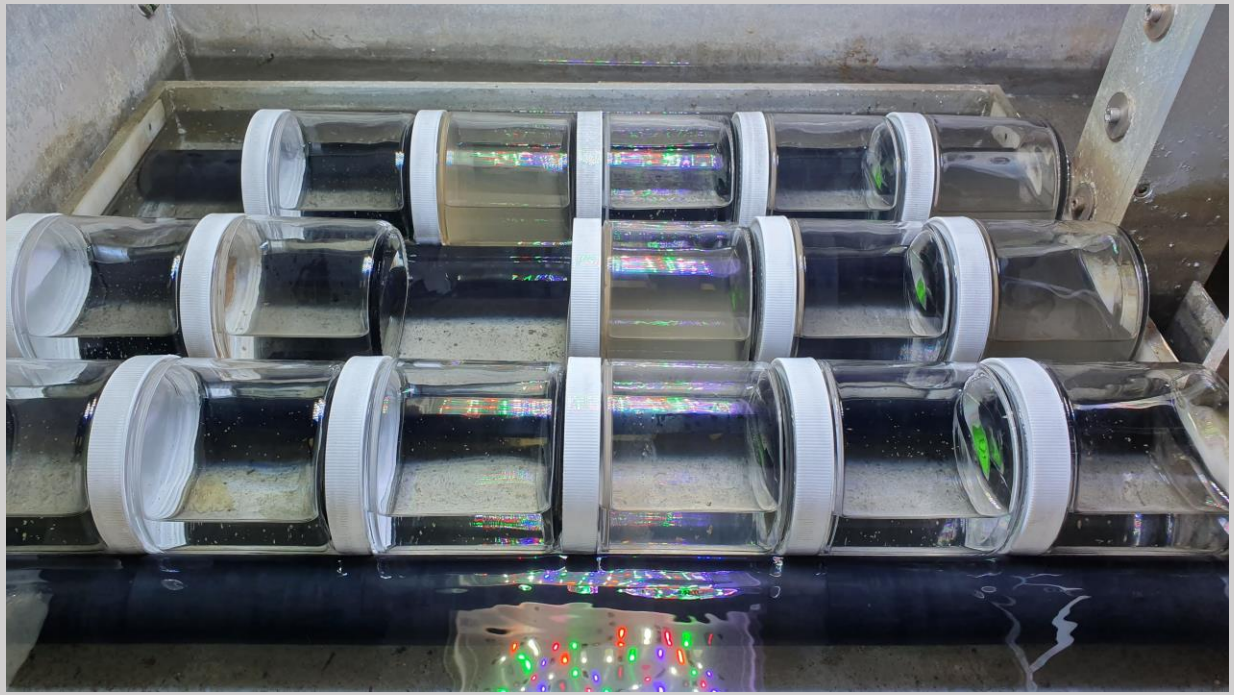
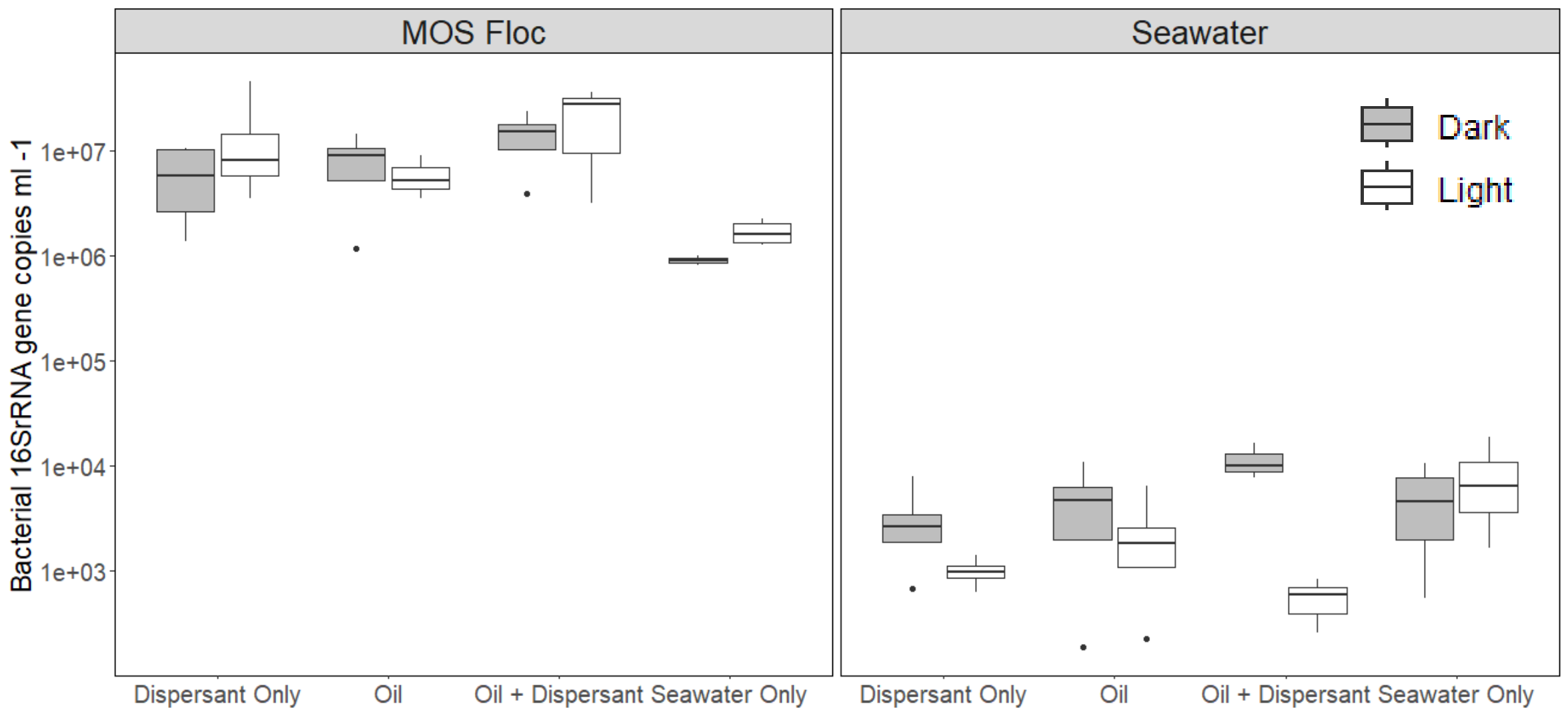


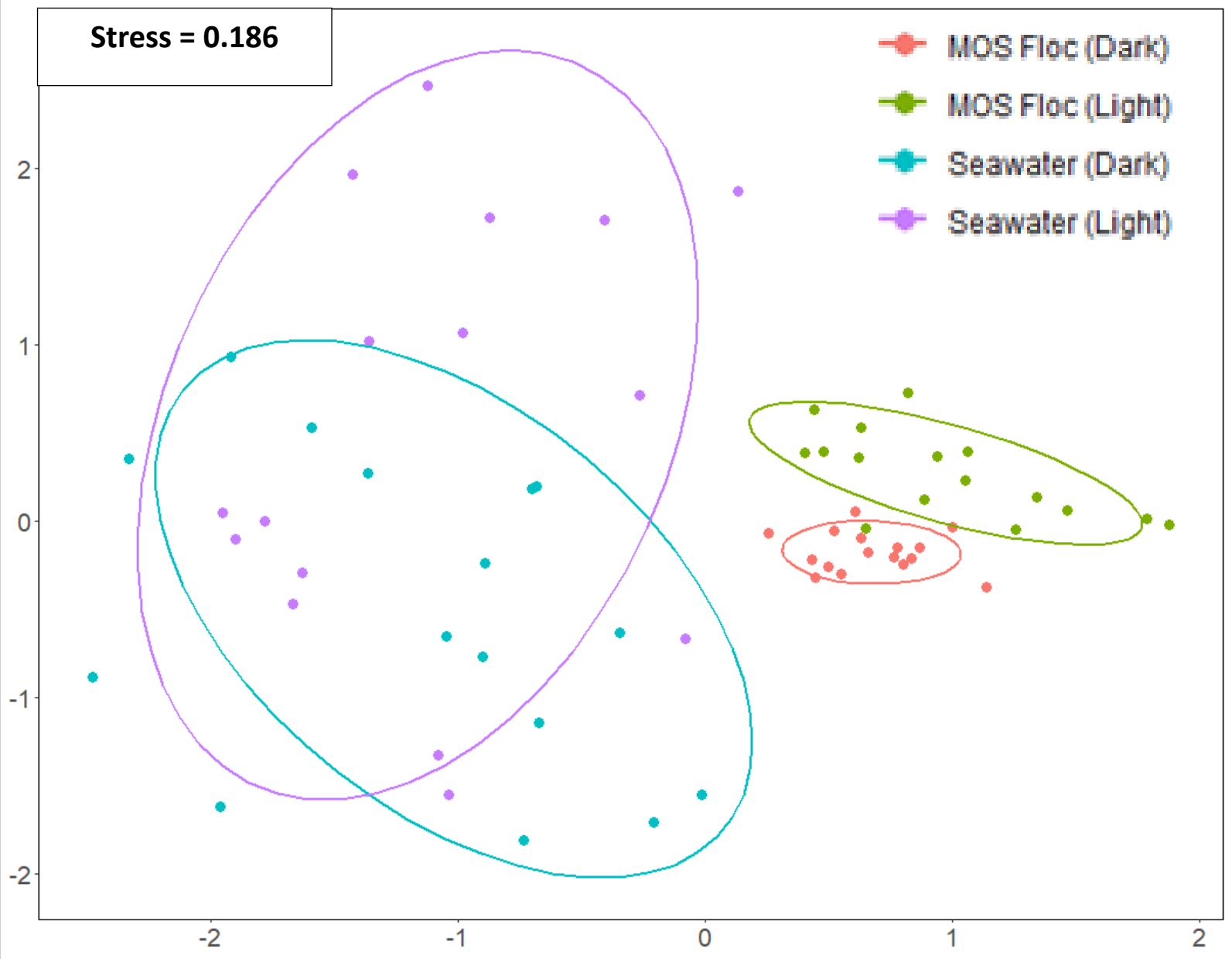
Roller table set up underneath powerful Heliospectra lighting system

Marine Oil Snow Flocs from Oil treatment under natural light conditions

Results: MOS “Bacterial Hotspots”



Results: Community Composition



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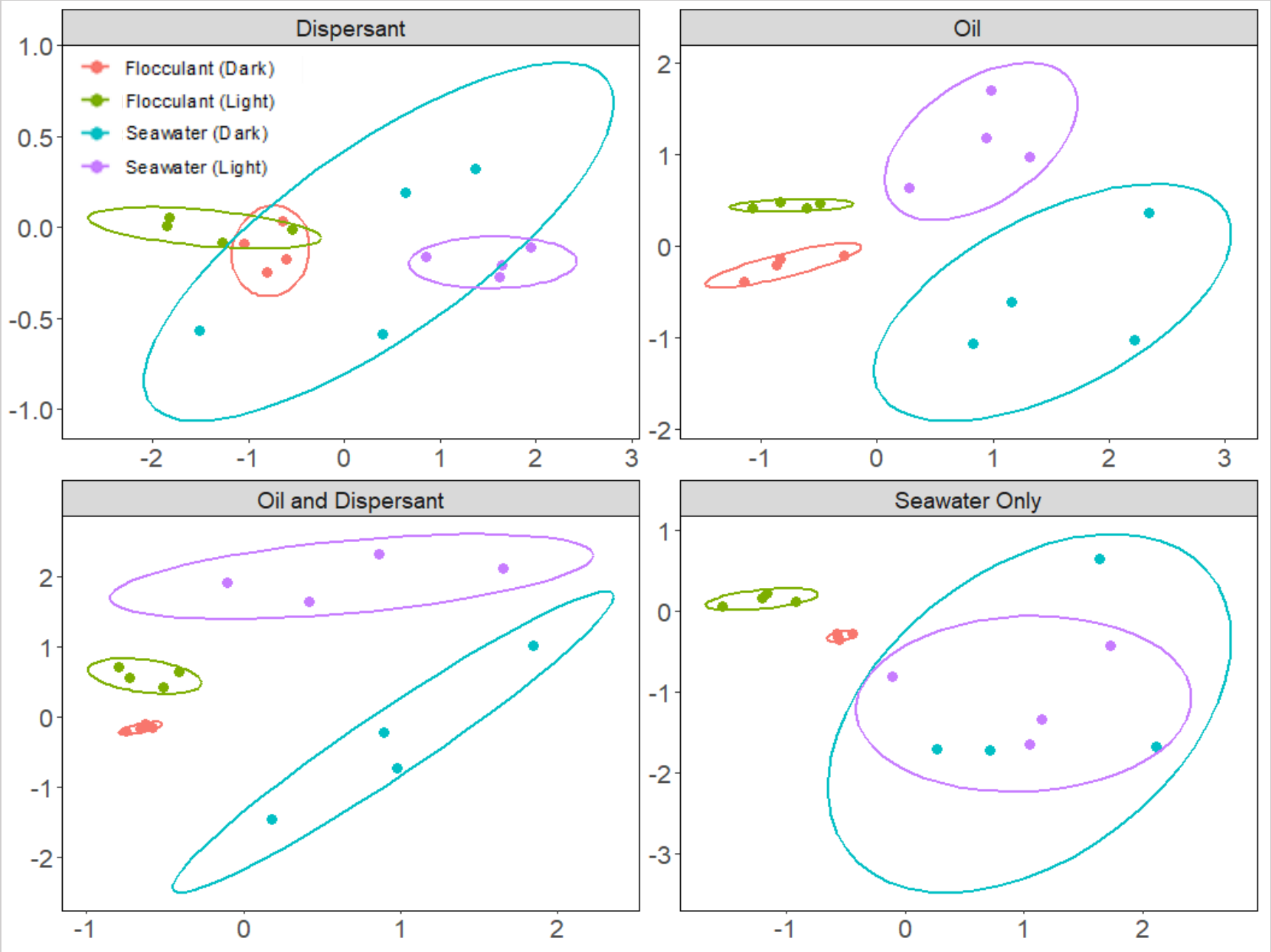
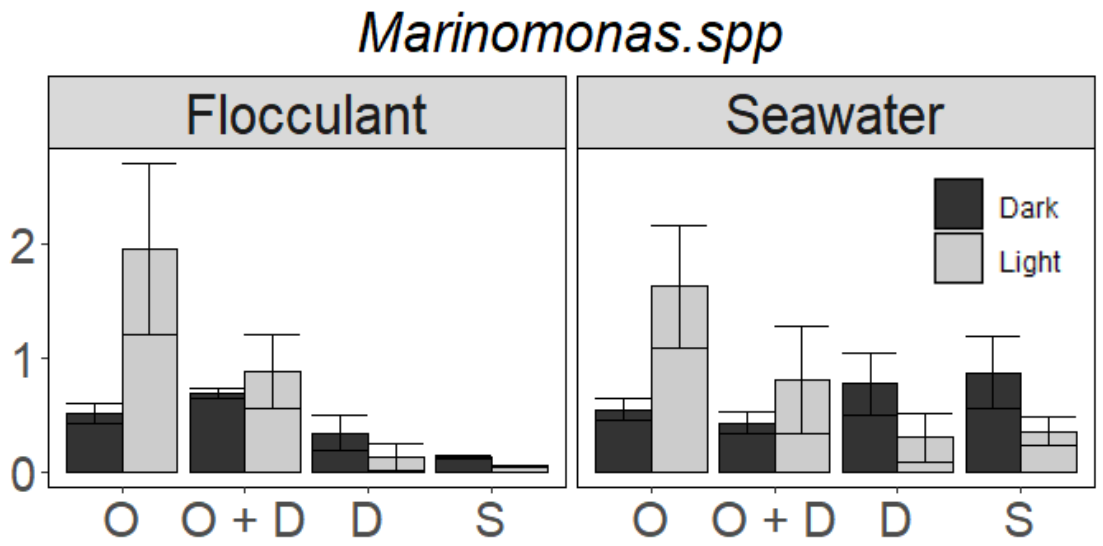
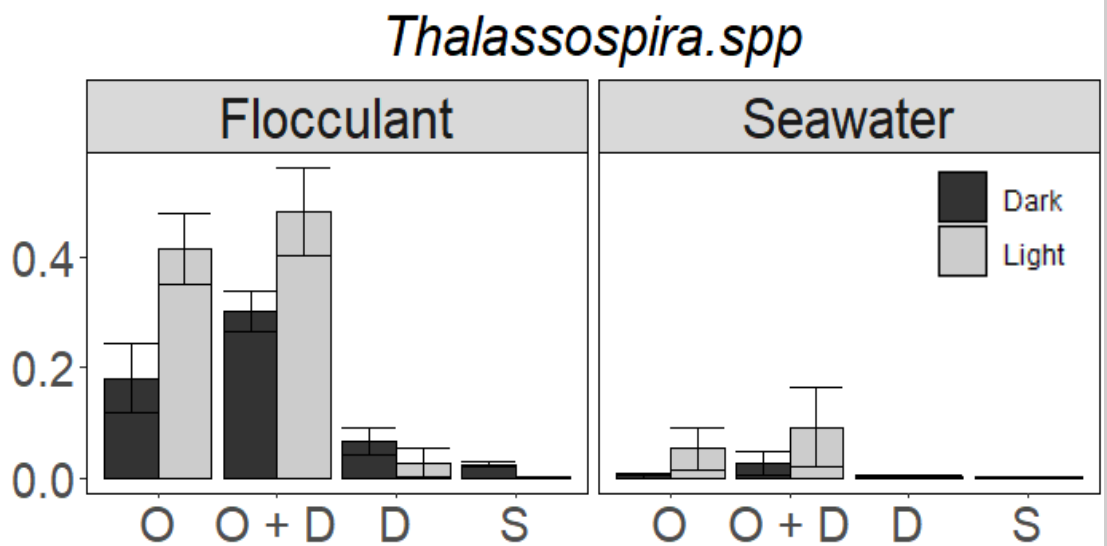
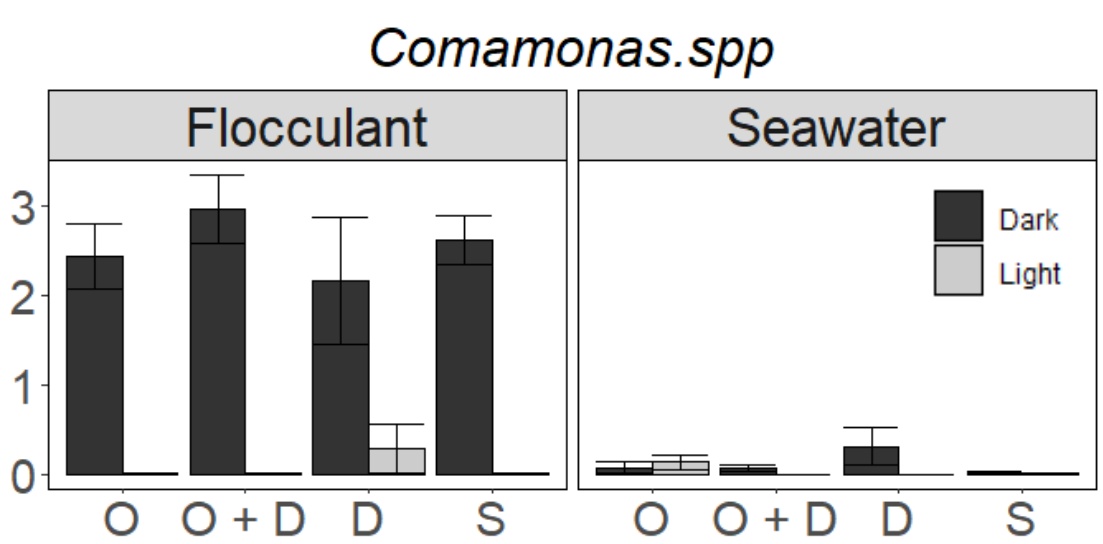
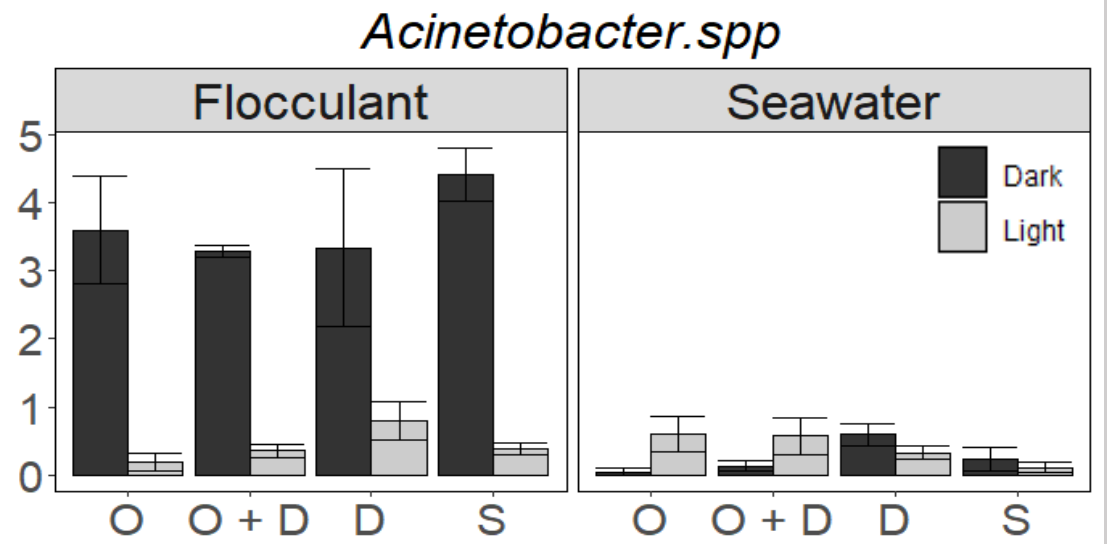


Results: Genera of Interest



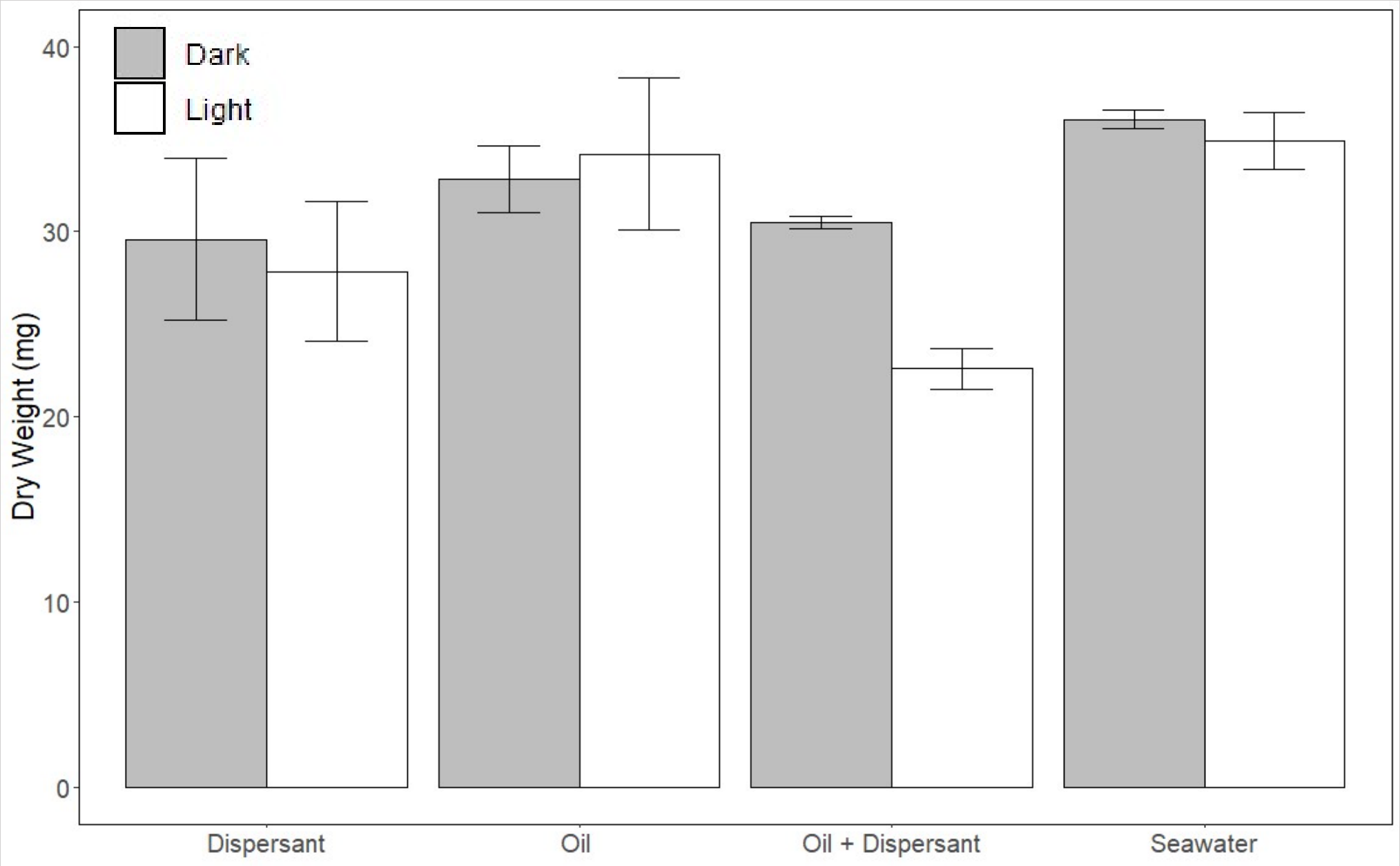




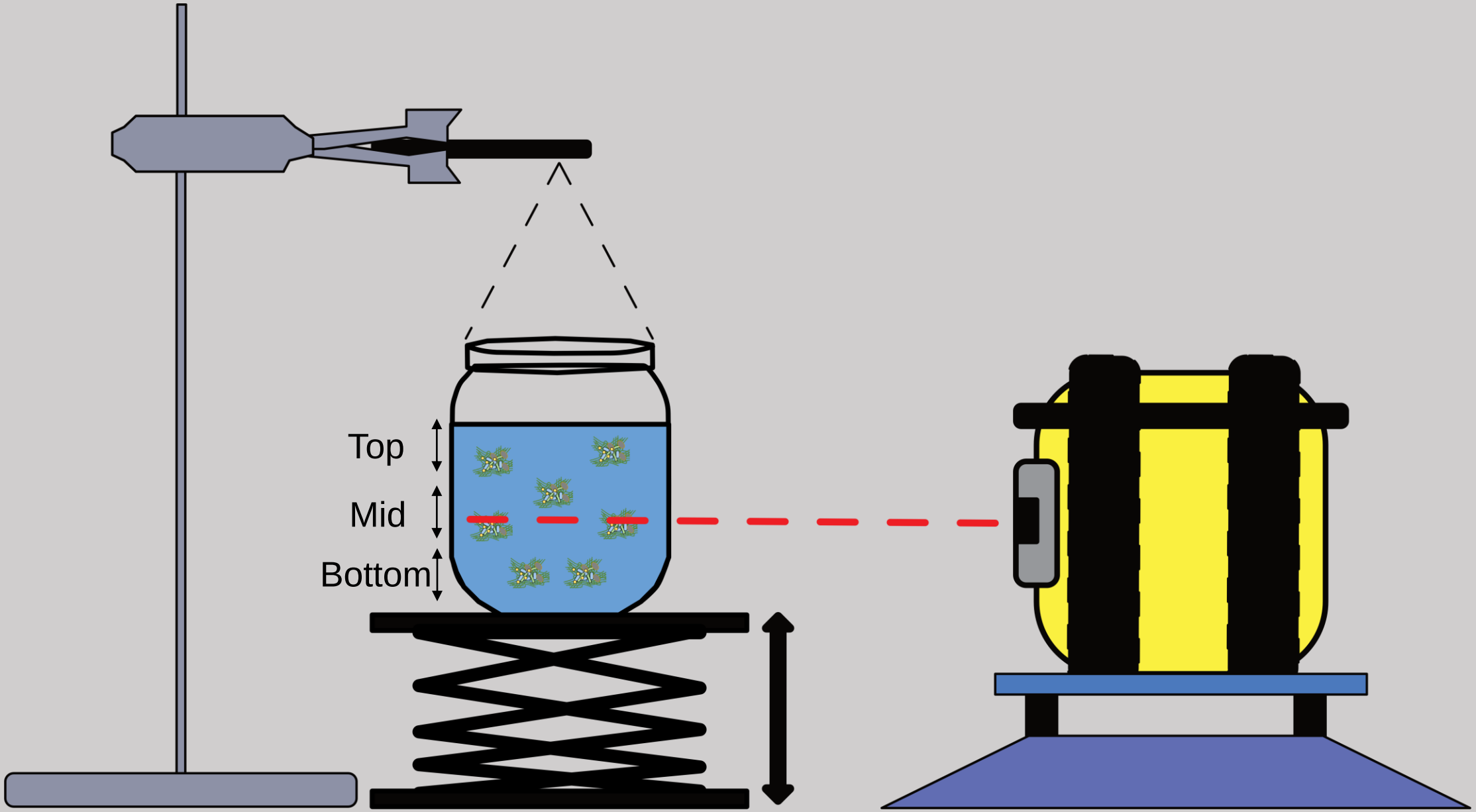


O = Oil, O + D = Oil and Dispersant, D = Dispersant Only, S = Seawater Control

Results: Dry weight



Marine Oil Snow Formation



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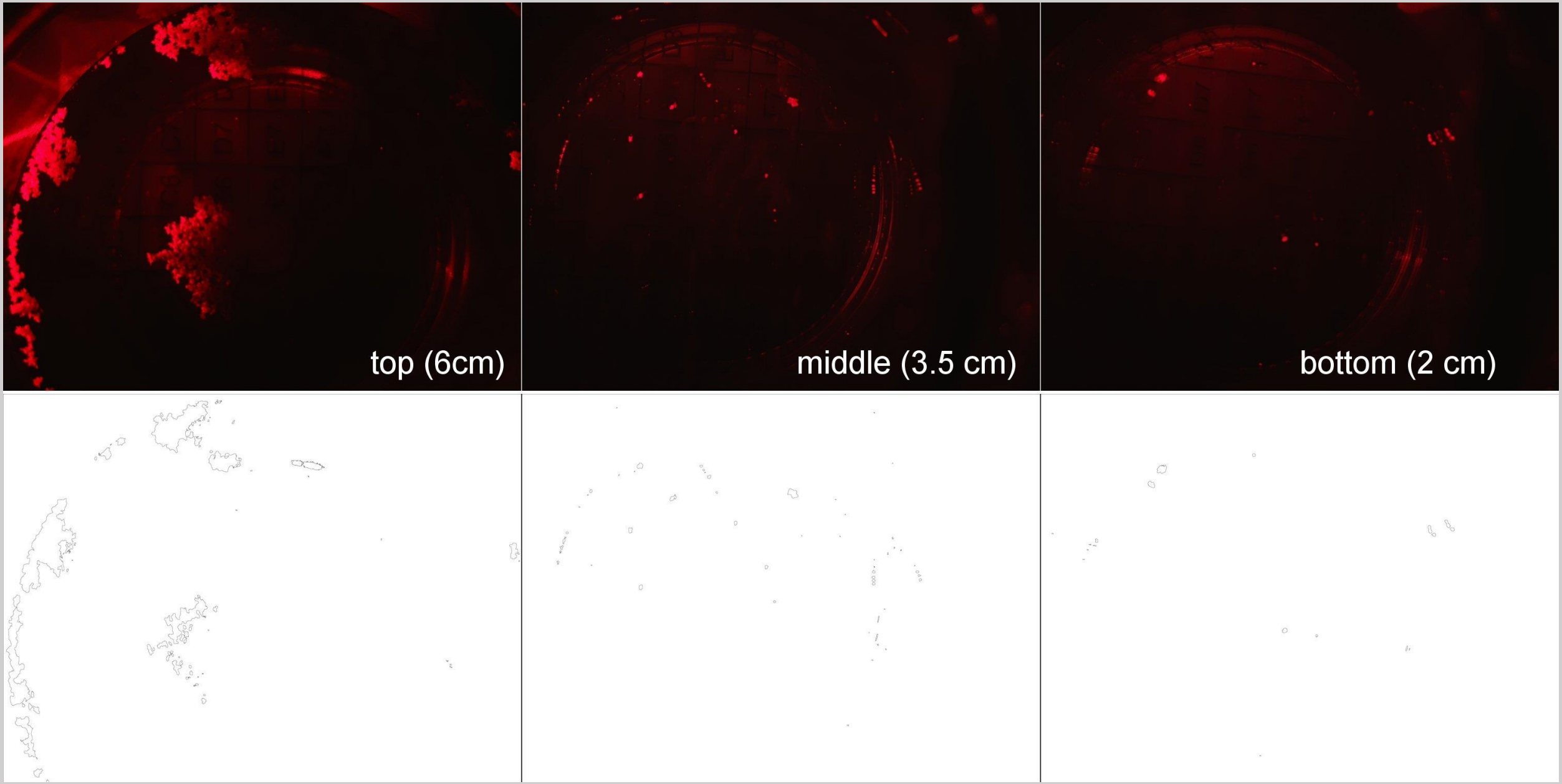

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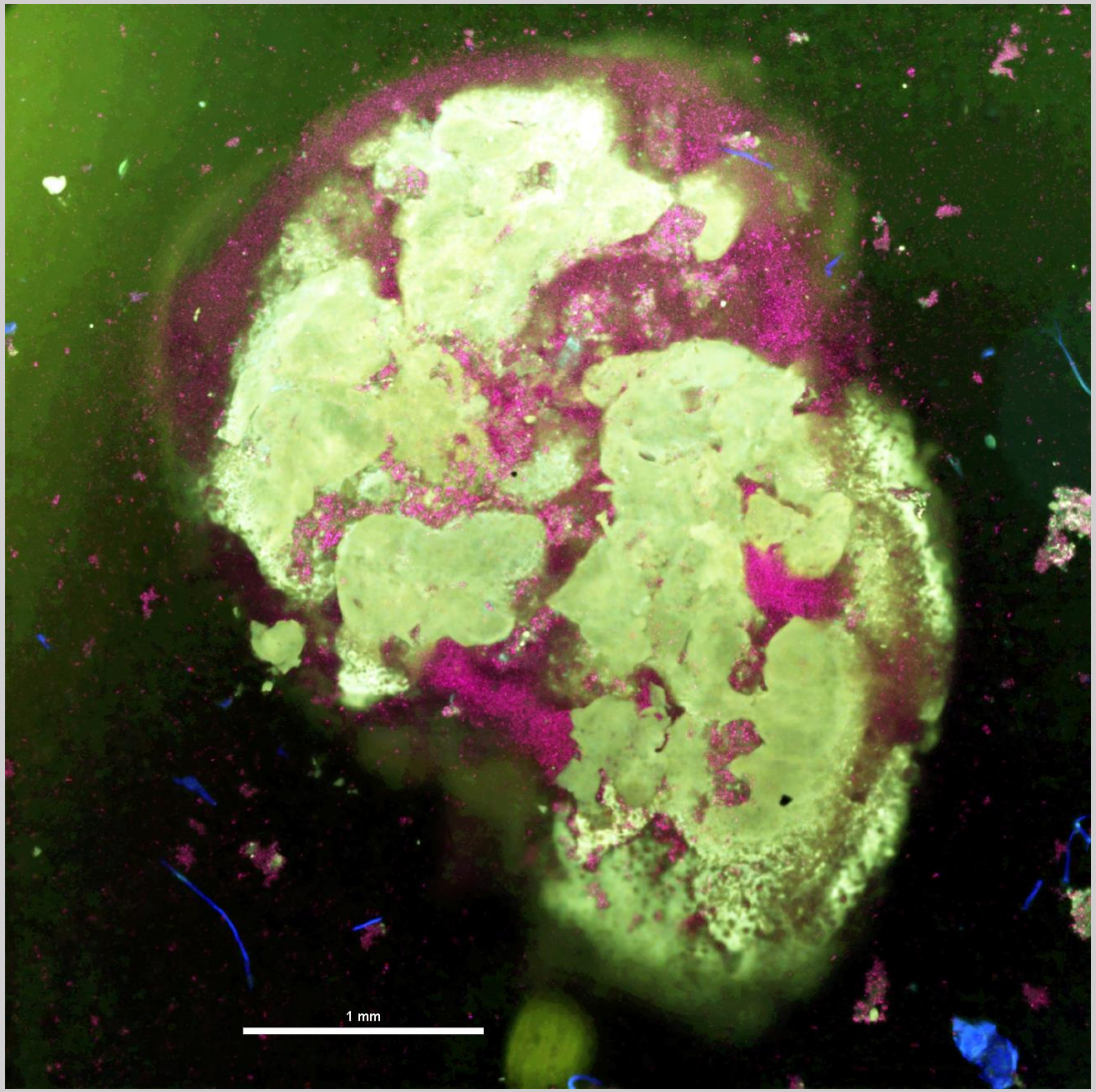
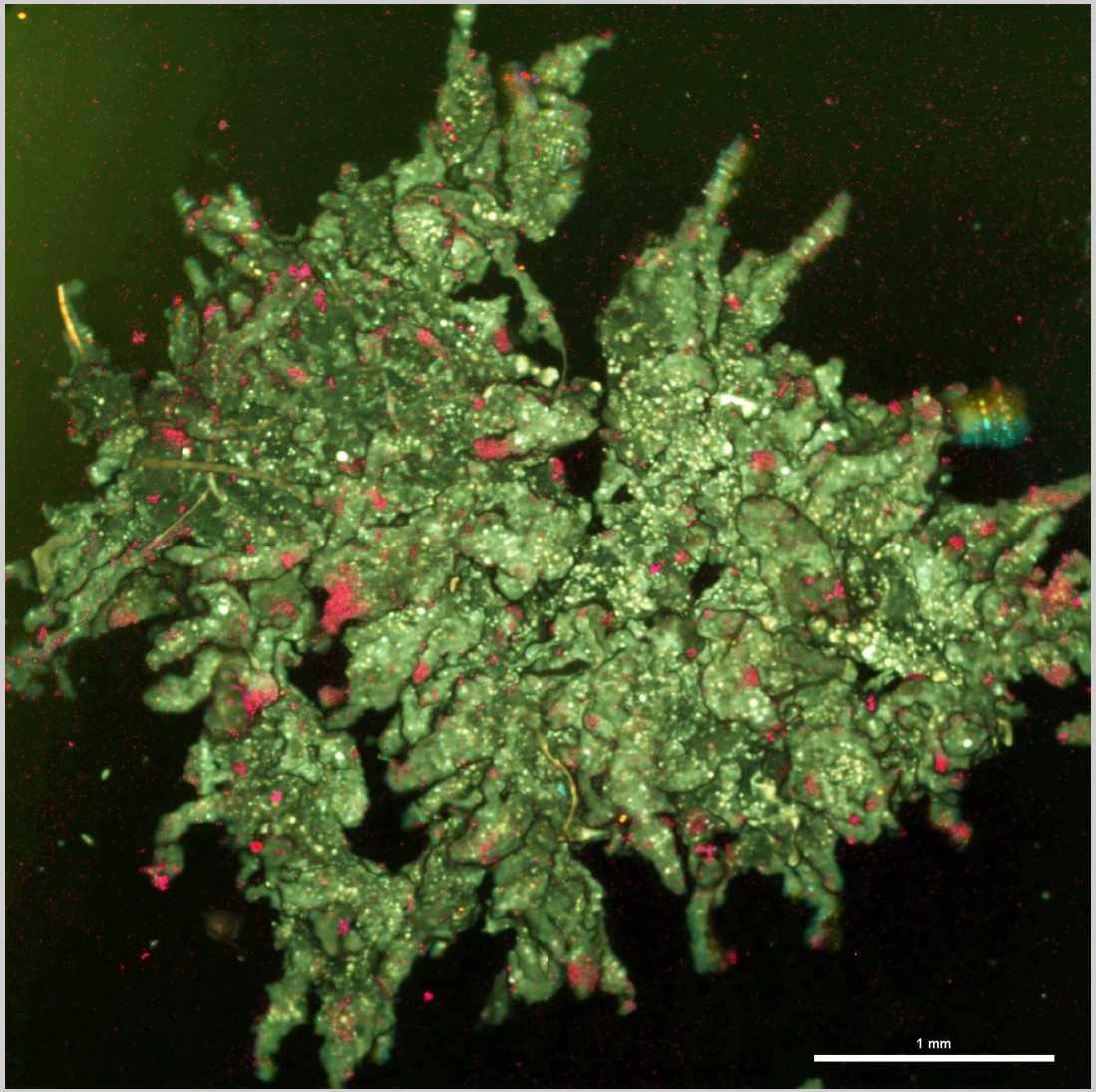


Marine Oil Snow grow
in Oil treatment



Marine Oil Snow grow in Oil
and Dispersant treatment

Thank you for listening!

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