Defining the controls on microplastic settling in river systems to predict areas of ecological risk to microplastic pollution

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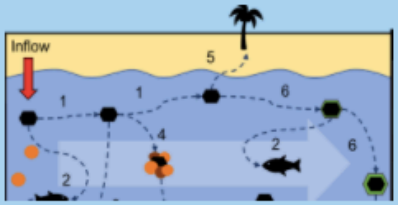
Background

Plastic fragments floating on the surface of aquatic systems only represent **1-2%** of plastic pollution entering these environments annually, with the fate of the remaining plastics largely unknown[1].



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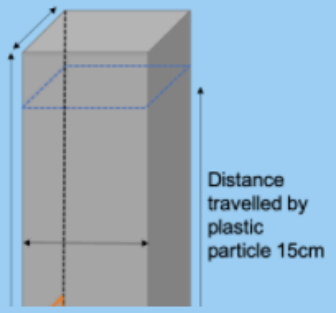
Approach



Distance travelled by plastic particle 15cm

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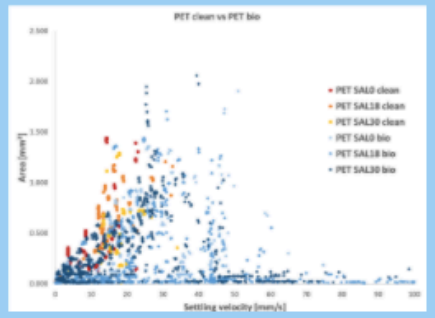
Biofilms and salinity



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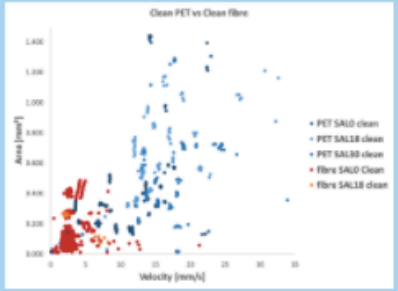
MP type and salinity



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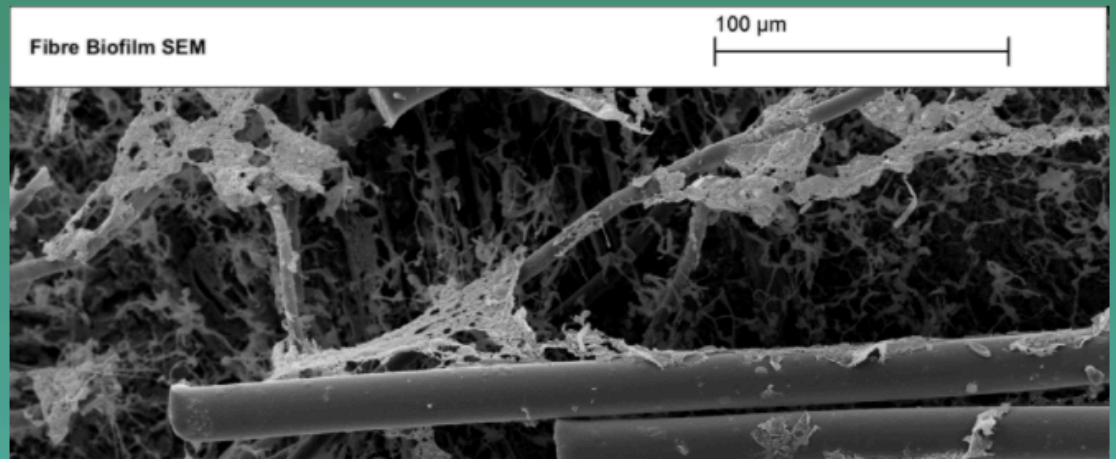
Objectives

1. Establish if there is a difference between the settling velocity of different MP types (ie. fragments vs fibres).

2. Understand the impact of salinity on settling velocity of "clean" and biofilmed MPs.

3. Determine how biofilm formation affects settling velocity of different MP types.

4. Combine settling velocities of MPs with flow data from the Mekong River, one of the top riverine contributers to marine plastic waste globally, to predict where MP will settle and therefore areas of ecological risk.



Next steps

- Conduct settling experiments with different sediment types to observe how sediment flocculation affects settling velocity of MP particles
- Re-analyse the preliminary results collected to ensure any non-MP particles are not being included
- Compare settling velocity of clean, biofilmed and flocculaed MPs to **flow data** collected from the Mekong River to determine where MPs may **fallout and form hotspots along the river-delta-**

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