

To feed or not to feed? Microplastic uptake by juvenile fish

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Coastal ecosystem habitats such as seagrass meadows are essential nursery grounds for many fish species. Due to the exponential application of plastic within the last decades, these vital habitats are facing increasing levels of riverine input of synthetic particles and fibres which pose a risk to a variety of marine biota.

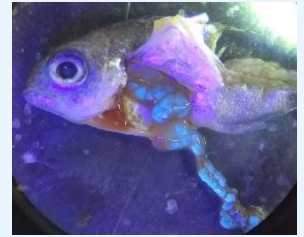
As thorough assessments of microplastic (MP) uptake in early life stages of fish are lacking, the main objective of my PhD project is to assess the variability of juvenile fish condition in relation to habitat quality parameters and MP pollution in East Atlantic coastal ecosystems.

Complementing my findings from the field, I conduct several laboratory experiments: in a first trial, I investigated to what extent juvenile seabream take up polystyrene particles of a size range from 0.5 to 1 mm. During the course of the experiment, juveniles were observed taking up particles and expelling them instantly (pictures on the left). Still, upon dissection at the end of the trial, around 15 % of the fish had particles in their stomach and intestinal tract – one individual had taken up 78 particles (pictures on the right).

To further understand the underlying mechanisms for this inter-individual variability in MP uptake, follow-up experiments are planned for the second year of my PhD.



Juvenile seabream taking up and expelling plastic particle.



Dissection of a juvenile seabream revealed a high uptake of fluorescent plastic particles under UV light.