Why Ostrea edulis larvae?

- Throughout Europe there is interest in restoring the European oyster to recover its ecological functioning.
- This interest is underpinned by European and national legislation, which aim to maintain and expand O. edulis' current abundance.
- To ensure larval recruitment and connectivity between restored sites there is a need to understand dispersal characteristics.
- While adult oysters have received a large amount of scientific attention, there is a lack of knowledge on larval ecology.

From behaviour to dispersal

- Larval behavior can influence intensity and direction of dispersal through vertical migrations.
- Vertical migration of larvae is often based on a combination of responses to different cues acting at different spatial scales.
- Understanding larval responses to such cues is essential for an accurate prediction of larval dispersal.

Hypotheses

Larval behaviour will influence dispersal from restoration sites:

- Larvae may respond to light and/or gravity and pressure.
- Larvae may respond to food.
- Larvae may respond differently throughout their larval life cycle.
- Swim speeds linked to factors above may cause different outcomes compared to passive drifting.

Experimental Design and Analyses

Methodological approach

- A novel methodology has been developed that allows accurate, cost-effective observation and quantification of larval behaviour.
- The data collected inform the parameterisation of models of larval movement which will be incorporated into hydrodynamic models.
- Dispersion of larvae will be predicted to inform planned restoration projects.

Response Parameters

- Distribution of larvae in observation chamber per treatment.
- Swim speeds measured by calibrated USB microscope.

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