

A Novel Approach To Measuring The Depositional Footprint Of The Blue Economy

Project ID

4.20.004

Research Program

RP4 Environment and Ecosystems (EE) Program

Summary

The expansion of aquaculture into offshore waters is key for further marine economic development worldwide. A fundamental assumption used to argue for such expansion is that operating in deeper and more dynamic offshore waters will increase the horizontal dispersion of organic farm wastes and reduce the impacts on seafloor ecosystem functions.

The social license for such a move, however, will rely on our ability to quantify this advantage. Once settled in the relatively quiescent bottom zone of offshore waters, it is anticipated that the farm waste will create a larger, more persistent but less intense footprint in the ecosystem than in shallow coastal waters.

Offshore sediment ecosystems are adapted to low organic input and therefore, potentially, sensitive to even low levels of organic enrichment. Implementing seafloor monitoring using novel non-invasive technology coupled with predictive modelling tools should ensure that the development of offshore aquaculture can be sustainable, but challenges remain.

Objectives

1. Develop a novel measurement protocol for the assessment of offshore farm footprints
2. Investigate thresholds in the metabolic response of offshore sediment ecosystems to organic enrichment
3. Explore the integration of such responses into biogeochemical models and future offshore regulatory frameworks.

Project Leader

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Duration

36 months

Participants

- Auckland University of Technology
- Commonwealth Scientific and Industrial Research Organisation (CSIRO)
- Griffith University
- Tasmanian Department of Primary Industries, Parks, Water and Environment
- University of Tasmania
- The New Zealand King Salmon Pty Limited
- Tassal Group Limited
- East China Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences



OUR VISION

To enhance the development of Australia's sustainable blue economy through the delivery of world-class, industry focussed research into integrated seafood and renewable energy production systems.

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