Looking to global literature to understand why green-lipped mussels are not naturally recruiting to the seabed

As the mussel industry knows well, mussel spat never seem to be behave the way we think they will. In the last ten years of mussel restoration research, we have had little to no juvenile recruitment into our restored mussel reefs. This paired with a lack of natural recovery of mussels onto the seabed post dredging has driven us to pursue a series of research on recruitment to understand why these processes are not occurring.

Looking to global scientific literature, we have found 309 research papers from the last 45 years that have studied the recruitment for reef-forming bivalves.

Throughout recent years there has been an upward trend, indicating that recruitment is a global issue, and the research has started to diversify with greater focus on more species globally from Chile to China.

Factors affecting recruitment appear to be diverse and numerous, with most studies looking at substrate, predation and hydrodynamics. From an industry perspective, some solace can be taken from the fact that the recruitment issues appear to be a challenge for numerous other bivalve aquaculture industries.

Overall, this review highlights that bivalve recruitment is a complex story, with lots of factors appearing to influence success. However, there is an opportunity to learn from a building body of work on both the underlying biology of recruiting bivalves and from other's practical endeavours to overcome bottlenecks.

The full systematic review will be published later this year.

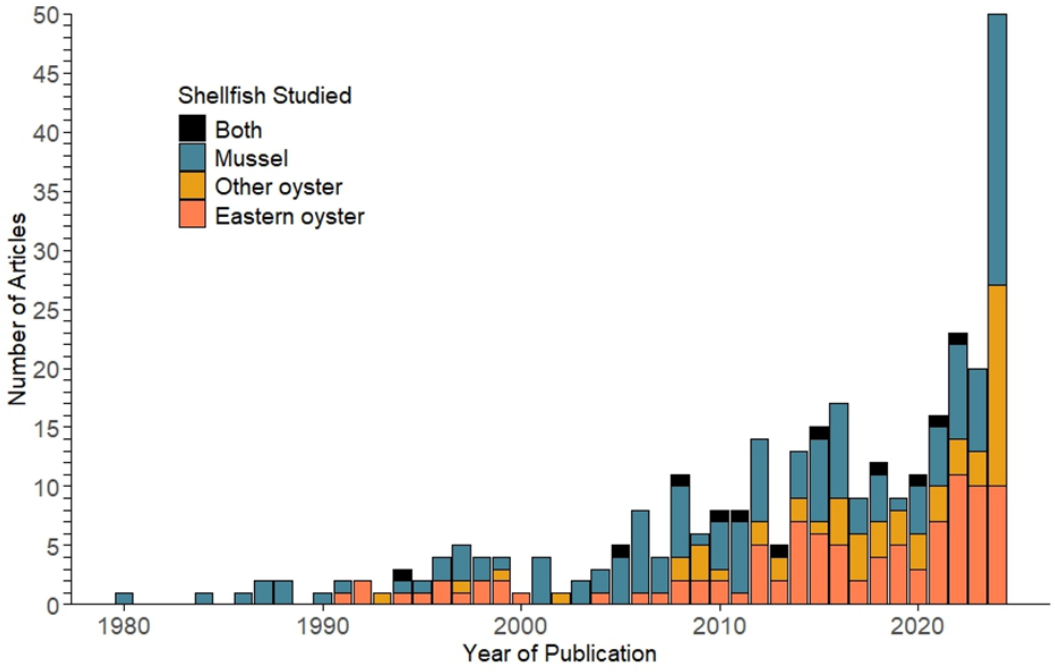

Figure 1. Number of articles included in the systematic review for year of publication from 1980 through to December 2024 (n = 310).

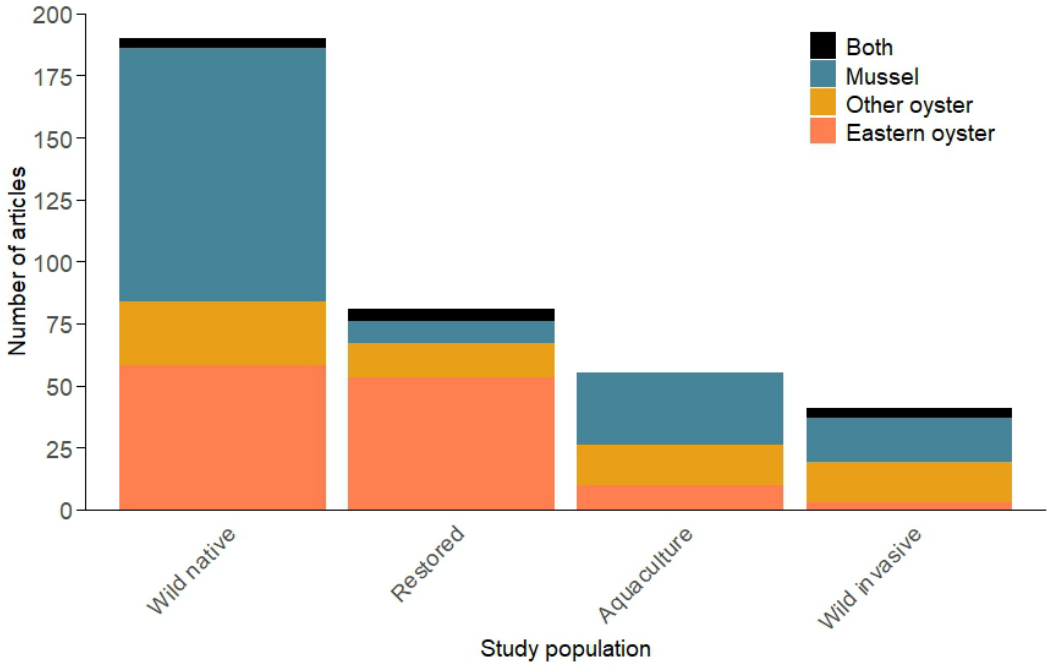

Figure 2. Number of articles included in the systematic review for each source type of bivalve population (n = 367). There were 55 articles that included multiple study populations hence total number of articles is > 310.

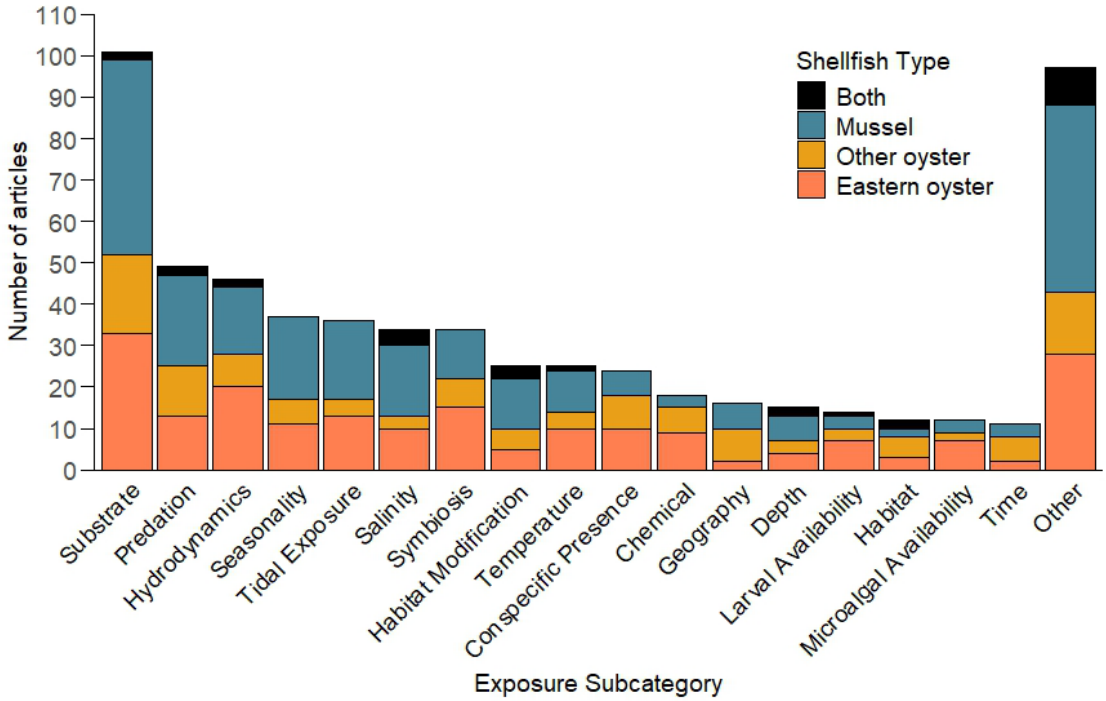

Figure 3. Number of articles included in the systematic review for various exposure sub-categories (n = 396). There were 178 articles that included multiple exposure sub-categories. There were 27 sub-categories with < 10 articles that were grouped as "Other".

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