

Manuscript Review

Title: Scientific oceanographic moorings as year-round laboratories at sea to study settlers' life histories and perform cage experiments: a study case with the Antarctic scallop *Adamussium colbecki*

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Summary: This paper examines the survival and growth of scallops caged on instrument moorings and also examines settlement dynamics of invertebrates, including the cage species. An interesting temporal linkage to episodic settlement is presented involving current direction and water temperature.

Specific comments:

- Line 29: I fail to see how “for seawater temperature and salinity” comes about. There are a host of habitat parameters that are synergistically addressed by the growth/survival of these artificial inhabitants. Temperature and salinity are but 2 of hundreds or thousands of important physical measurements.
- Line 38: Change “The obtained growth parameters were then and applied to” to “The obtained growth parameters were then applied to”
- Line 46: I see the provocative statement “Genetic data from selected settlers provided new information about their larval ecology and connectivity” but I cannot find anything in the manuscript that discusses this result. If it is indeed there it needs more exposure to match this attention gathering line of text.
- Line 69: Delete “ones”
- Line 86: I would not term 38% survival a great success. Delete “with a great success”
- Line 86: Delete “well”
- Line 88: Delete “a”
- Line 82: Change “grappled” to “grapple”
- Line 108: For PNRA I suggest the parentheses to enclose the native language for what PNRA is actually acronymized from.
- Line 112: Delete “of permanence”
- Line 114: Again with the temperature and salinity, I do not understand this.
- Line 129: Change “comprising” to “including”
- Line 132: How would you know anything about dispersal routes? The settlers could be coming from the adults you have caged, correct?
- Line 170: Change “clumps” to “clamps”
- Line 174: Delete “of permanence”
- Line 188: Delete “more”
- Line 217: Change “led” to “lead”
- Line 266: At this point I am confused. I read something earlier about constraining L-infinity to some value based on observed sizes in the larger population. The only reasonable way to go about this would be to fix the L-infinity to some defensible value, then fit the other VB parameters as usual. You cannot simply pair the freely fitted k with some after-the-fact imposed L-infinity and make a plot, which is what it sounds like the authors did. The reason I suspect this is because the parameters are presented in the freely fit form, with no mention of a fitted k from a constrained L-infinity fitting.
- Line 288: Where were the settlers on the funnels? Inside or outside? If inside, could these be spawned from the caged adults? Even outside perhaps? What is known about the larval ecology of this species? Pelagic larval duration?

- Line 302: Correct “polychaetes”
- Line 314: Remove “instead”
- Line 315: Correct “year-round”
- Line 320: Delete “almost”
- Line 321: You do not know what caused the mortality of the 2. It could have been drag, but perhaps something else entirely. The constant lauding of the funnels is frankly odd.
- Line 358: Delete “rarefied or”
- Line 375: Change “was” to “were”
- Line 375: Change “on the base of” to “from”
- Line 399: Change “really” to “very”
- Line 401: Change “in the years” to “over the years”
- Line 406: Delete “really”
- Line 408: Correct “artifact”
- Line 410: Change “no drag but that of the water during mooring retrieval affected” to “water drag during mooring retrieval could have affected”
- Line 460: Change “characterize from a genetic point of view the settlers” to “characterize the settlers from a genetic point of view”
- Line 467: Change it is under development the use of Autonomous Reef Monitoring Structures (ARMS: https://www.pifsc.noaa.gov/cred/survey_methods/arms/overview.php) to” to “the use of Autonomous Reef Monitoring Structures (ARMS: https://www.pifsc.noaa.gov/cred/survey_methods/arms/overview.php) is under development to”
- Line 472: Delete first “could”
- Figure 3 caption: The text refers to both a “mooring rope” and a “mooring cable”. It is not clear what the cable is. The rope is apparent in the picture.

General comments: This manuscript was incredibly painful to review. While I commend authors publishing outside of their native language it is extremely difficult to review as I then get caught up in the grammar corrections instead of focusing on the scientific storyline. That said, I find this to be scientifically compelling and worthy of publication. Growth estimates in this type of setup are certainly questionable but any field studies of growth help to quantify the envelope of growth dynamics possible for the species. The apparent settlement cue gleaned from the environmental sensors is quite intriguing.