

Effect of type and concentration of ballasting particles on sinking rate of marine snow produced by the Appendicularian *Oikopleura dioica* - DTU Orbit (09/11/2017)

Effect of type and concentration of ballasting particles on sinking rate of marine snow produced by the Appendicularian *Oikopleura dioica*

Ballast material (organic, opal, calcite, lithogenic) is suggested to affect sinking speed of aggregates in the ocean. Here, we tested this hypothesis by incubating appendicularians in suspensions of different algae or Saharan dust, and observing the sinking speed of the marine snow formed by their discarded houses. We show that calcite increases the sinking speeds of aggregates by ~100% and lithogenic material by ~150% while opal only has a minor effect. Furthermore the effect of ballast particle concentration was causing a 33 m d⁻¹ increase in sinking speed for a 5×10⁵ μm³ ml⁻¹ increase in particle concentration, near independent on ballast type. We finally compare our observations to the literature and stress the need to generate aggregates similar to those in nature in order to get realistic estimates of the impact of ballast particles on sinking speeds

General information

State: Published

Organisations: National Institute of Aquatic Resources, Centre for Ocean Life, Technical University of Denmark, Université Pierre et Marie Curie

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Publication date: 2013

Main Research Area: Technical/natural sciences

Publication information

Journal: PLoS ONE

Volume: 8

Issue number: 9

Article number: e75676

ISSN (Print): 1932-6203

Ratings:

BFI (2017): BFI-level 1

Web of Science (2017): Indexed yes

BFI (2016): BFI-level 1

Scopus rating (2016): CiteScore 3.11 SJR 1.201 SNIP 1.092

Web of Science (2016): Indexed yes

BFI (2015): BFI-level 1

Scopus rating (2015): SJR 1.414 SNIP 1.131 CiteScore 3.32

Web of Science (2015): Indexed yes

BFI (2014): BFI-level 1

Scopus rating (2014): SJR 1.545 SNIP 1.141 CiteScore 3.54

Web of Science (2014): Indexed yes

BFI (2013): BFI-level 1

Scopus rating (2013): SJR 1.74 SNIP 1.147 CiteScore 3.94

ISI indexed (2013): ISI indexed yes

Web of Science (2013): Indexed yes

BFI (2012): BFI-level 1

Scopus rating (2012): SJR 1.945 SNIP 1.142 CiteScore 4.15

ISI indexed (2012): ISI indexed yes

Web of Science (2012): Indexed yes

BFI (2011): BFI-level 1

Scopus rating (2011): SJR 2.369 SNIP 1.23 CiteScore 4.58

ISI indexed (2011): ISI indexed no

Web of Science (2011): Indexed yes

BFI (2010): BFI-level 1

Scopus rating (2010): SJR 2.631 SNIP 1.161

Web of Science (2010): Indexed yes

BFI (2009): BFI-level 1

Scopus rating (2009): SJR 2.473 SNIP 0.985

Web of Science (2009): Indexed yes

BFI (2008): BFI-level 1

Scopus rating (2008): SJR 2.323 SNIP 0.96

Web of Science (2008): Indexed yes

Scopus rating (2007): SJR 1.289 SNIP 0.525

Web of Science (2006): Indexed yes

Original language: English

Electronic versions:

Publishers version

DOIs:

[10.1371/journal.pone.0075676](https://doi.org/10.1371/journal.pone.0075676)

Links:

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0075676>

Publication: Research - peer-review › Journal article – Annual report year: 2013