

# Oceanographic moorings as year-round laboratories for investigating growth performance and settlement dynamics in the Antarctic scallop *Adamussium colbecki*

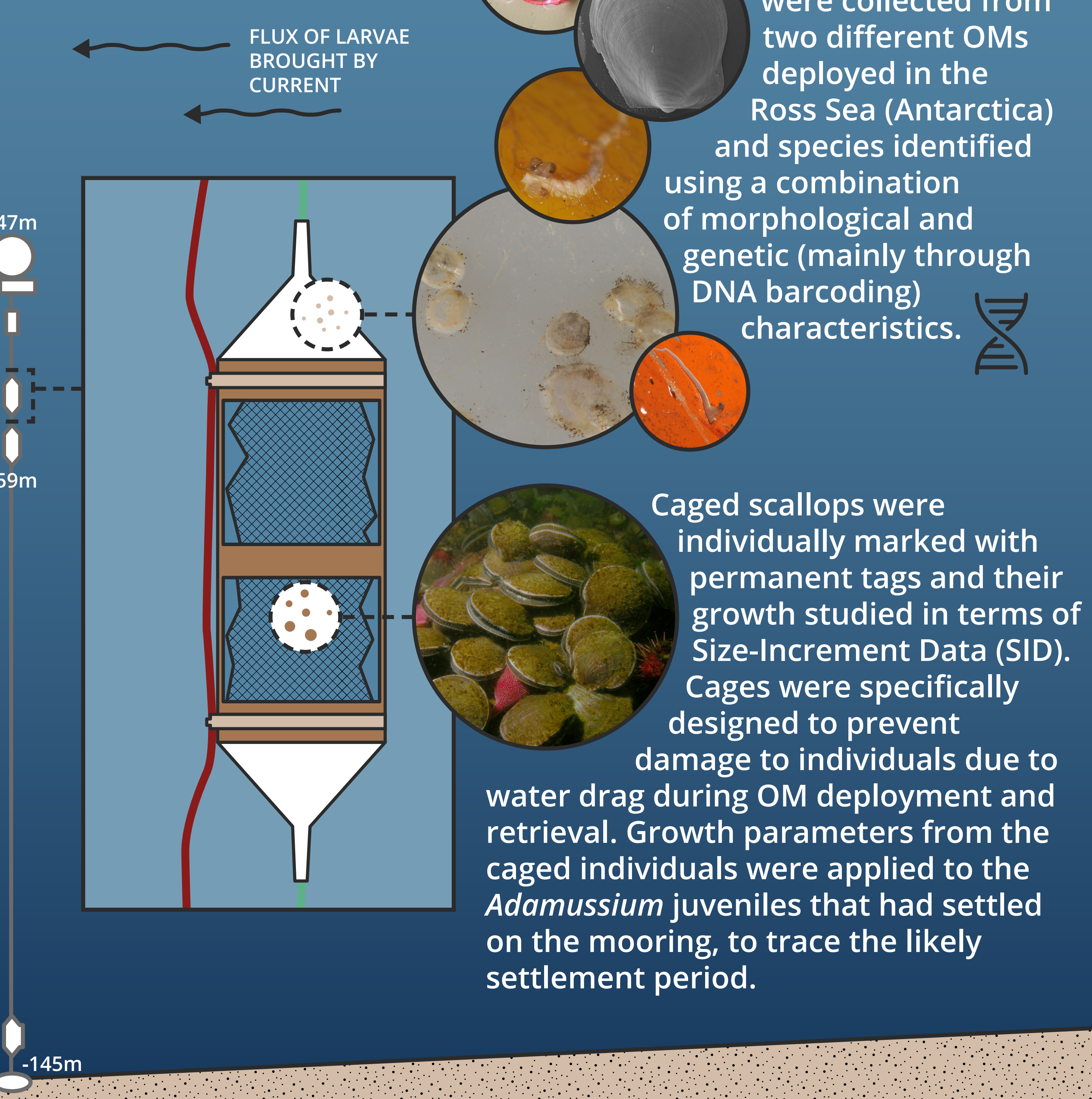
## BACKGROUND

Oceanographic Moorings (OMs) are standard marine platforms composed of wires, buoys, weights and instruments, and are used as in situ observatories to record water column properties. However, OMs are also comprised of hard substrates on which a variety of invertebrates can settle when they encounter these structures along their dispersal routes.



In this contribution, we studied the fouling communities found on two OMs deployed in the Ross Sea (Antarctica). Furthermore, a cage containing the Antarctic scallop *Adamussium colbecki* (Smith, 1902) was incorporated in the OM. The growth of the caged *A. colbecki* was evaluated after one year and their shells used as biological proxy for seawater temperature and salinity.

## METHODS

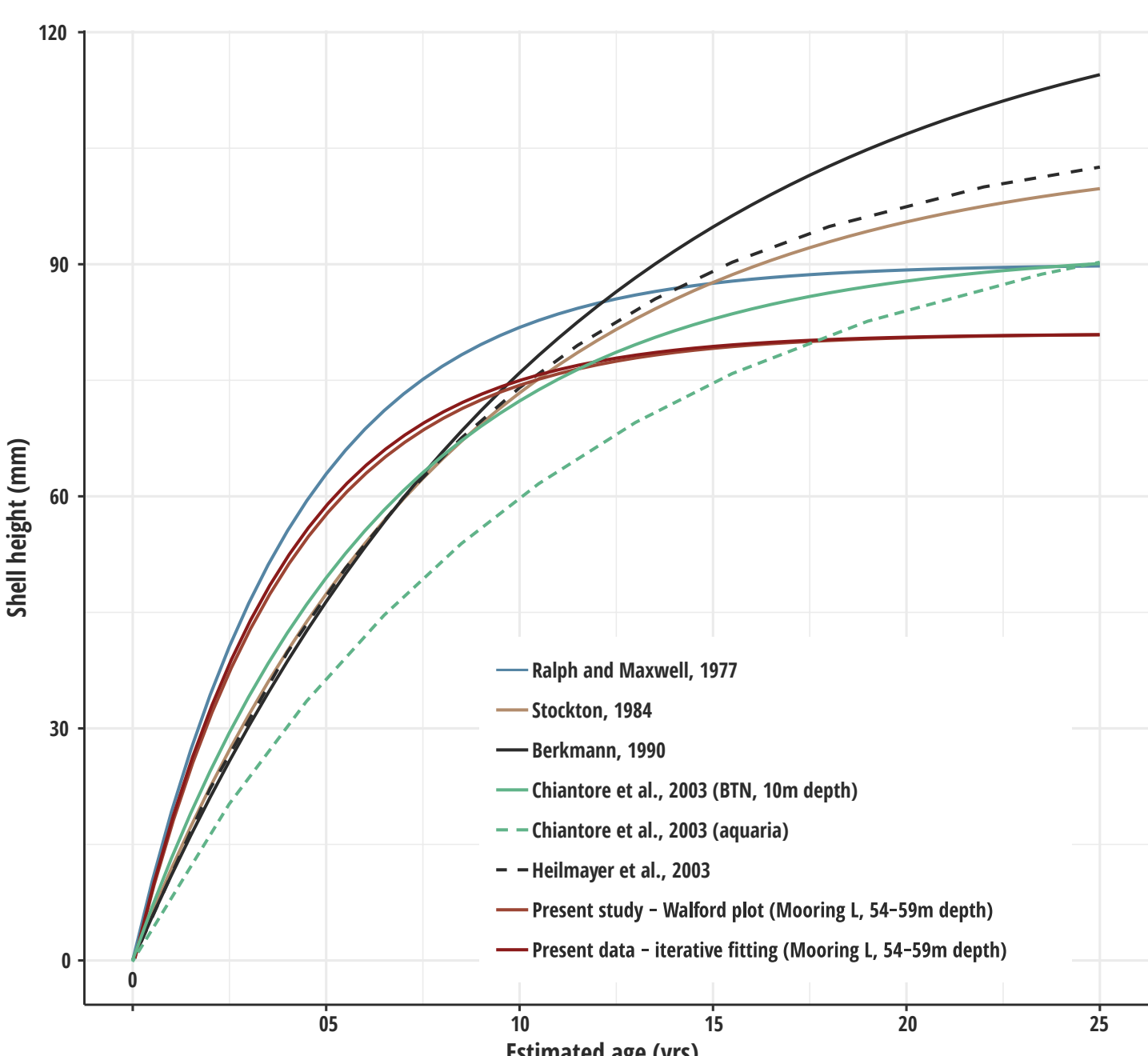


## RESULTS

The growth performance of caged *A. colbecki* was similar to that from previous growth studies of this species. The remarkable survival rate of caged specimens (96.6%) supports the feasibility of caging experiments, even for a species with a fragile shell such as the Antarctic scallop.

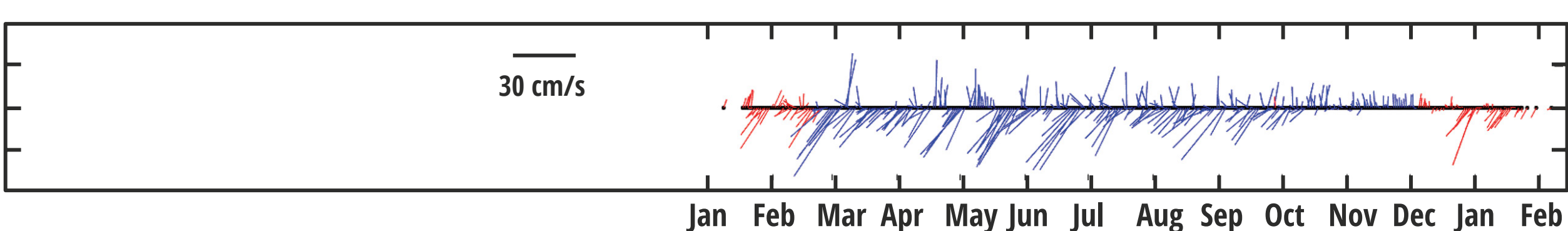
Some of the new recruits found on the mooring were the Antarctic scallop *A. colbecki*, the same species we put into special cages fixed to it. The settlement of the *Adamussium* juveniles started during the Austral spring with a peak in summer months and, remarkably, coincided with seasonal changes in water temperature and flow direction, which were recorded by the mooring's instruments. Genetic data from other settlers provided new information about their larval ecology and connectivity.

Von Bertalanffy growth functions for *Adamussium colbecki*

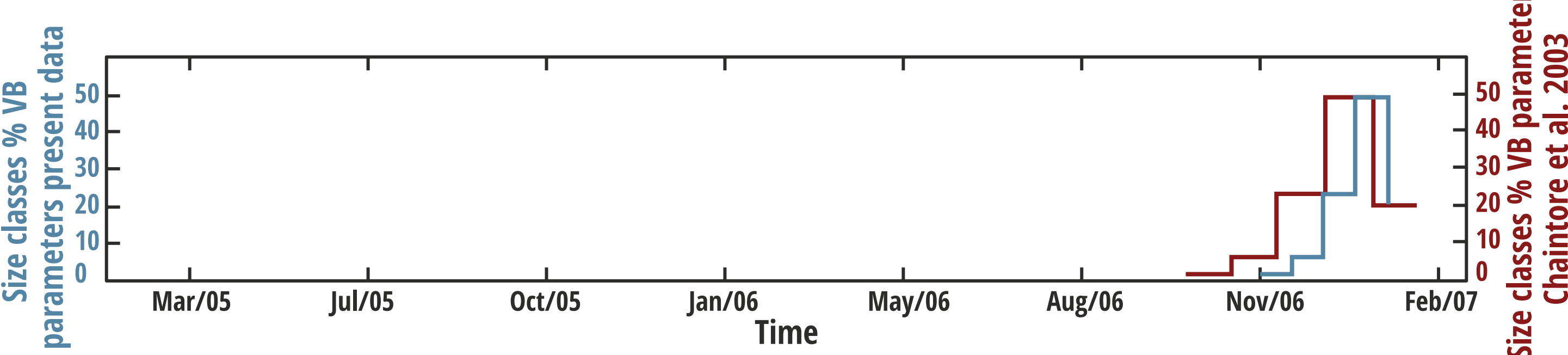


Water current timeseries 2006-2007

Blue: seawater temperature < -1.7 °C. Red: > -1.7 °C, indicating sea ice melting.



Time distribution of *Adamussium* size classes



## DISCUSSION

The outcome of this study represents a **baseline for the characterization of Antarctic fouling biodiversity**. We hope that in the near future an internationally coordinated systematic study of settlers could be initiated around the Antarctic continent. This could utilise 'new generation OMs' equipped with standardized settlement structures and agreed sampling protocols for the study of fouling communities.