

# frequency on Antarctic benthic suspension-feeding communities.

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## Introduction

Antarctic benthic suspension-feeding communities are complex, dense, highly structured, mature, multi-specific and they have high diversity with high endemism levels.

Sponges, anemones, ascidians, gorgonians corals, hydroids, bryozoans are typical suspension Antarctic feeders. They have slow reproduction and growth rates.

**Ice scouring** damages benthic fauna and begins a succession process → mosaic of different stages.

Iceberg scouring is one of the dominant structuring forces along the continental shelf (>800m).

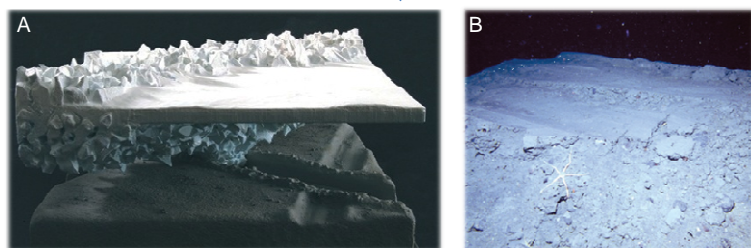


Fig.1: (A) Impact of iceberg scouring on the antarctic seabed. Source: Teixidó (2004). (B) Seafloor recently scoured by iceberg in SE Weddell Sea shelf. Source: Gutt i Piepenburg (2003).

## Discussion

If ice scouring frequency increases: 340 → < 250 years

Loss of final stages of succession; it causes :

Ice scouring

250 -500 years

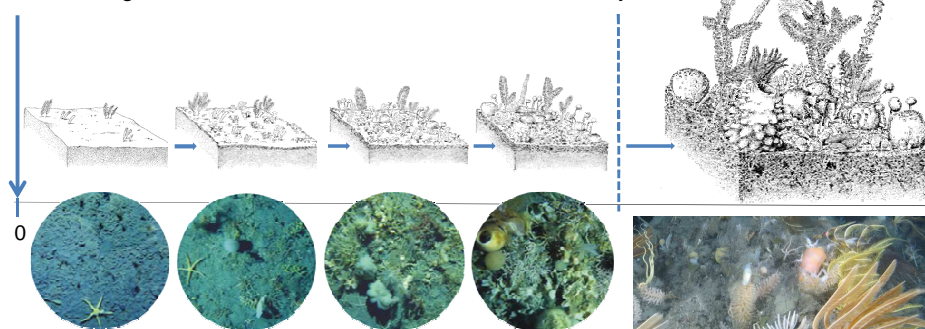


Fig.3: Succession after an ice scour disturbance in Antarctic shelf. Source: modified from Gili et al (2001) and Teixidó et al (2007).

## Conclusions

Increase of ice scouring frequency are likely to have significant effects on the **diversity** and **composition** of the benthic fauna, with associated changes in **ecosystem function**.

For a recent future, is important to continue determining how these exceptional communities will respond in fort of increase climate change consequences.

State of the art:

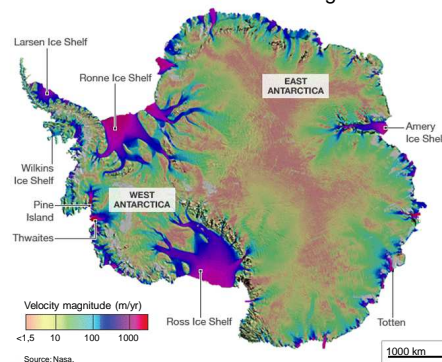
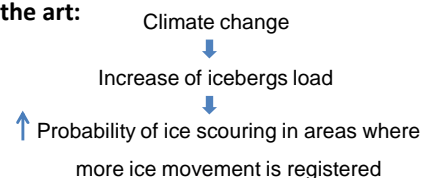


Fig.2: Ice movement registered between 1996-2009. Source: Ringot et al (2011).

**The aim:** is determine the effects of the increase of ice scouring frequency on the Antarctic benthic suspension-feeding communities and on the ecosystem associated. .

1. Loss of benthic suspension feeders.

- Modification of the ecological role:
  - ↓ Recycling of pelagic production
  - ↑ Sedimentation rate
- ↓ Structural complexity
- ↓ Diversity and richness → loss of endemisms
- Loss of epibiotic species.

2. Selection of opportunistic and pioneering species, typical of early stages of succession.

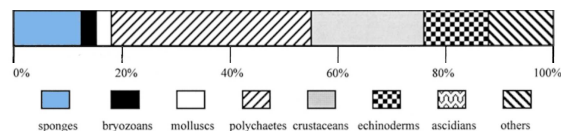


Fig.4: Typical taxonomic composition of an early stage of succession (wet biomass proportions) Source: modified from Gerdes et al (2003).

3. Loss of the mosaic → ↓ heterogeneity at regional scale.

