

Feeding of Antarctic asteroids - trophic resources, plasticity and diversity

Le Bourg Baptiste, Gilles Lepoint and Loïc Michel

Laboratory of Oceanology, MARE Centre, University of Liège, University of Liège B6C, Allée du 6 Aout 15, 4000 Liège (Sart-Tilman), Belgium

E-mail: baptiste.lebourg@student.ulg.ac.be

Antarctica is currently subjected to strong and contrasted impacts of climate change. While the Western Antarctic Peninsula is one of the most rapidly warming regions of the world, resulting in sea ice cover decreases, sea ice cover is increasing along East Antarctic coasts. Differences of temperature and sea ice cover changes between Antarctic regions is likely impact food web functioning through temperature-related changes in consumer physiology, modifications of benthic community structure (e.g. arrival of exogenous species such as predatory crabs), modifications of benthic-pelagic coupling intensity or disruption of benthic production. Asteroids are an important group of southern benthos. This group has also a great trophic variability and is potentially more resistant than other organisms to temperature changes. This research project proposes to investigate the trophic ecology of Antarctic asteroids using stomach contents and stable isotope analyses.

This research will be structured in two main axes. First, resources supporting asteroid communities will be identified in Western Antarctic Peninsula, where sea ice cover is decreasing, and in Terre Adélie, where sea ice cover is increasing. Second, through trophic niche width and overlap assessment and trophic level estimation, diversity and plasticity of asteroid diet will be studied along Antarctic coasts. Ultimately, this project will help understanding which ecological processes determine how an organism group copes with environmental modifications linked to climate change.

Keywords: sea stars; Antarctic; trophic ecology