

## Sea ice as a driver of Antarctic benthic macroalgal community composition and near-shore trophic connectivity

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### Research Locations

Anvers Island to Marguerite Bay

### Supporting Station/Vessel

ARSV *Laurence M. Gould*

### Dates in Antarctica

Early August to early October

### Project Description

The Western Antarctic Peninsula is a model for understanding cold-water communities and how they are changing in Antarctica. Brown macroalgae (seaweed) form extensive undersea forests in the northern portion of this region and provide physical structure and a food source for shallow-water communities. Between Anvers and Adelaide Islands these macroalgae are less abundant and diverse, probably because the area is covered by more sea ice for a longer period, which reduces the amount of light reaching the algae. The reduced macroalgal cover impacts other organisms in the food web, but the ways it alters sea-floor community processes and organization is unknown. This project will quantitatively document macroalgal communities at multiple sites between Anvers and Adelaide Islands using a combination of diving, video surveys, and algal collections.

### Field Overview

A team of researchers will deploy on the ARSV *Laurence M. Gould*. They will use satellite data on sea-ice extent and water turbidity to choose study sites. The team will dive to survey and collect samples from nine to 18 sites. The divers will quantify macroalgal cover by video transect and will collect macroalgae and invertebrates for later biochemical and isotope analyses. Some of these collections will use an airlift suction device. The team will also collect benthic microalgae from dive sites and phytoplankton from nearby but deeper waters.

### Program Director

Dr. Jennifer Burns

### ASC Points of Contact

Rachel Shackelford / Jamee Johnson