Sea ice conditions in the north-western Weddell Sea are still severe and dominated by second-year ice.

Backtracking revealed sea ice origin from the southern Weddell Sea (Filchner–Ronne Ice shelf area).

Superimposed ice gap layers (GAP) do not sustain high biomass, however they are still a repository for higher nutrient concentrations.

Algae biomass below the ice (UIW) is low and dominated by flagellates.

Multi year ice conserves high biomass in various layers which results in biomass-associated nutrients remineralization and accumulation.

Sea ice biomass standing stocks observed in this region are among the highest previously found in Antarctica and dominated by diatoms.

Sea ice derived carbon is a significant food source for higher trophic levels during the late summer season.