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Community Structure of Benthic Marine Algae in Maxwell Bay, Antarctica

Hosung Chung[1]*, Yoon Sik Oh[2], and In Kyu Lee[3]

[1]*Polar Research Center, Korea Ocean Research & Development Institute, Ansan PO Box 29, Seoul 425-600, Korea*
[2]*Department of Biology, Kyeongsang National University, Kyungnam 660-701, Korea*
[3]*Department of Biology, Seoul National University, Seoul 151-742, Korea*

ABSTRACT. To identify the characteristics of macroalgal assemblages, systematic fieldworks carried out in Maxwell Bay, Antarctica during 1988-1995. A total of 44 species, 7 green, 1 golden-brown, 16 brown and 20 red algae was identified. Estimating the important value calculated from coverage and biomass, *Desmarestia* spp. (mainly composed of *D. menziesii* and *D. anceps*) and *Himantothallus grandifolius* amounted to 45%, and they played a leading role for macroalgal assemblages in Maxwell Bay. The infralittoral zonation was represented by the mixed vegetation of thallic rhodophytes from surface to 5 m deep, *D.* spp. on 5~15 m, and *H. grandifolius* below 15 m. Mud deposition was considered as a major factor which determined the species diversity, abundance and community structure in this area, and it was depended on the geographical location. Thus, horizontally, they could be divided into the two types; exposed outward type and protected fjord type. The high number of species was found at exposed sites (23-38 species) than at protected sites (8-16 species). The mean of total biomass (fresh-weight) was low with 204.5 $g \cdot m^{-2}$ due to the formation of bare zone depending on mud deposition and ice abrasion, and the deviation was obviously from 28.7 g m^{-2} to 364.8 g m^{-2} with the mixing extent of substrate component. At infralittoral rocks, however, the highest biomass was observed with more than 1,500 g m^{-2}.

*corresponding author (hschung@sari.kordi.re.kr)