

Biofilm Respiration Rates: A Mechanism for Mid-Ocean Hypoxic Conditions?

Many studies have been conducted on marine plastics pollution, but none address the respiration of dissolved oxygen by microbes that naturally foul plastics in marine systems. Respiration rates by microbial biofilm communities were quantified in this study to estimate the total oxygen consumption per day for the entire marine plastisphere. Variations between fouling densities were also observed for two plastic substrates (polypropylene and polystyrene), and these variations were related to relative oxygen consumption. This study suggests that the oxygen consumption by microbial biofilms on marine plastics are an important factor in the world oceans.