

This thesis summarizes the current knowledge of the effect of iron on the growth of plankton in relation to lowering the concentration of CO<sub>2</sub> in the atmosphere. Iron is a limiting factor for phytoplankton growth in large parts of the Pacific Ocean and the Southern Ocean. This thesis is focused on the Southern ocean, where it chronologically describes natural and artificial experiments, where the objective was to uncover the possibilities of artificial iron fertilization of the ocean. The iron fertilization experiments were based on supplying the upper layer of the ocean with an iron solution, which resulted in an increase in phytoplankton growth and chlorophyll concentration. The reaction of plankton to a natural iron input via upwelling was also observed. In these cases an increase of phytoplankton and chlorophyll was observed. Nowadays, the lively discussed possibility of large-scale fertilization is restricted by the United Nations due to insufficient knowledge and concerns of geoengineering.