

## Abstract

The transition from the marine to the freshwater environment and vice versa is a key event in the evolution of organisms. Although these transitions are relatively rare from an evolutionary point of view, most large groups of organisms have undergone this event at least once. The marine and freshwater environment differs in many aspects, especially salinity. During the transition between these two environments, the organisms are forced to overcome a significant salinity gradient and adapt to changes in the osmotic potential. However, biotic factors also play an important role, especially competition and predation in the new environment. The aim of the bachelor 's thesis is to provide comprehensive information on the mechanisms of adaptation to a wide gradient of salinity in algae in general and to focus on freshwater-marine transitions in chrysophytes, that occurred repeatedly and relatively frequently in the course of evolution.

**Key words:** chrysophytes, Chrysophyceae, salinity gradient, osmoregulation, marine-freshwater transition