Abstract

Phylogeography of deep-sea fish remains poorly explored, largely due to the extreme conditions in which these organisms live and limited technological capabilities for researching these species. The aim of this thesis is to summarize the information known about the phylogeography of deep-sea fish, identify factors influencing population distributions, and connect them on a global scale. The distribution of deep-sea fish populations is influenced by physical, topographic, and hydrographic factors. Their connectivity is driven by the migratory abilities of fish and the utilization of marine currents for their dispersion. Migration is divided into vertical and horizontal. The vast majority of deep sea fish undergo some form of migration, at least during ontogenetic development. The most common is diurnal vertical migration, where fish regularly move to shallower depths at night for feeding. Molecular methods, mainly mitochondrial DNA markers, were used for research to determine the phylogenetic tree of species. The results suggest that the topography of the seafloor is rarely a barrier to the flow of genetic information. Furthermore, the results often refute the hypothesis of isolation caused by the distance between populations. They often exhibit a relatively high rate of panmixia. When speciation occurs, it is sympatric or parapatric.