



EVOLUTIONARY PALEOECOLOGY AND PALEOCLIMATOLOGY OF THE MARINE BIOSPHERE

The marine biosphere has been shaped for over 3.5 billion years of evolution by a combination of factors, including dramatic extinction events, paleoclimatic upheavals, shifts in marine and atmospheric chemistry, and competition for resources. Without such an evolutionary paleoecological context it is impossible to properly understand the marine biosphere today.

Marine nektonic, planktonic and benthic assemblages are the most easily preserved combinations of species occurring in the fossil record. As a consequence, paleoecological studies of marine fossil assemblages offer great potential for a detailed understanding of recurrent associations of fossil species, the changes of these associations in space and time, and their relationships with other species and the environment. Moreover, these studies may provide information about the causes and development of adaptive morphological changes, niche structure, as well as for the recognition of detailed paleobiogeographic patterns and of the ecological and paleoclimatological factors controlling these patterns. Therefore, the fossil record of the marine biosphere can be used to investigate how organisms interacted with, responded to, and influenced their dynamic environments.

The paleontological team of the Dipartimento di Scienze della Terra is actively involved in projects dealing with Mesozoic and Cenozoic marine vertebrates and calcareous plankton. Any project concerning these groups is welcome and applications about any group of benthic invertebrates are also strongly encouraged.

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