# ROLLING AROUND ROCKY SHELFS – FOSSIL AND EXTANT RHODOLITHS ON NORTH ATLANTIC ISLANDS

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Rhodoliths can be regarded as the response of coralline red algae to a lack of hard substratum. They form unattached nodular aggregates that are mainly composed of coralline algae. Since they are not attached to any substratum, their composition, growth from and size are controlled by the physical conditions of the depositional/living environment. These control composition, growth form and size of the heavily calcified nodules. As a consequence, deeper-water rhodoliths usually show a different taxonomic composition compared to shallow-water equivalents, and high-energetic nodules have other growth forms than low-energetic ones. Therefore, rhodoliths are valuable proxies for the analysis of fossil environments. The analysis of rhodoliths for the reconstruction of fossil environments requires a profound knowledge of their extant equivalents. This presentation shows three examples for such an approach, dealing with the Macaronesian islands in the Northern Atlantic, which include the Azores in the north, and the Cape Verde islands in the tropical belt in the south. They are comparably young volcanic islands and reveal Late Pliocene to Recent rhodoliths. The topographic changes of the islands over time are well known and have been studied in detail, including the relative sea-level changes. This makes them a perfect natural laboratory for the study of extant rhodoliths and their implications for the fossil record. We are currently studying them in cooperation with biologists, paleontologists, and volcanologists from the Universities of the Azores and Lisbon.