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➤ **Aquarium of Genova, Italy:**

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***Mediterranean Sea (2)***

1) The Mediterranean Sea is often described as a “miniature ocean” because of the many similarities in processes with the global ocean. However, the Mediterranean Sea characteristics are subjected to changes at temporal scales much larger than the seasonal variability.

1a) As an example it can be mentioned the long term changes in the Mediterranean Sea global temperature occurred in the last 50 years:

1b) But the long term interannual/interdecadal variability goes beyond the warming trend and can involve changes in the thermohaline circulation and consequent re-arrangement of the Mediterranean Sea water masses, as demonstrated by the occurrence of the so-called “eastern Mediterranean transient”, that is to say a change in the source area of the eastern Mediterranean deep water, that in the nineties shifted from the Adriatic to the Aegean Sea.

2) The long term variability of the physical characteristic of the basin has a profound impact on the structure and functioning of its ecosystems:

2a) Sometimes the impact of the physical characteristic could be regarded as “catastrophic” as the massive gorgonian and coral mortality occurred in 1999 at many coastal sites in the Mediterranean Sea that was ascribed to a strong and sudden summer warming of coastal waters:

2b) In other cases the influence of physical characteristics on the dynamics of the marine ecosystems can be linked to the long term variability of meteorological and hydrological pattern as could be the case of the occurrence of the “Mucilage events” in the northern Adriatic Sea.

3) EUROCEANS is actively supporting the investigation on the links between physical variability and marine ecosystems functioning through the establishment and the analysis of long time series of oceanographical properties (as stated by Ioanna Siokou) but also through the development and the use of coupled numerical models simulating the general circulation of the ocean and the dynamics of the marine ecosystem and its variability