{rokbox title=|Number of mass mortality events reported in the Mediterranean Sea :: Image: Authors|
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Collaborative Database to Track Mass Mortality Events in the Mediterranean Sea.
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Abstract: Anthropogenic climate change, and global warming in particular, has strong and increasing impacts on marine ecosystems (Poloczanska et al., 2013; Halpern et al., 2015; Smale et al., 2019). The Mediterranean Sea is considered a marine biodiversity hot-spot contributing to more than 7% of world's marine biodiversity including a high percentage of endemic species (Coll et al., 2010). The Mediterranean region is a climate change hotspot, where the respective impacts of warming are very pronounced and relatively well documented (Cramer et al., 2018). One of the major impacts of sea surface temperature rise in the marine coastal ecosystems is the occurrence of mass mortality events (MMEs). The first evidences of this phenomenon dated from the first half of'80 years affecting the Western Mediterranean and the Aegean Sea (Harmelin, 1984; Bavestrello and Boero, 1986; Gaino and Pronzato, 1989; Voultsiadou et al., 2011). The most impressive phenomenon happened in 1999 when an

unprecedented large scale MME impacted populations of more than 30 species from different phyla along the French and Italian coasts (Cerrano et al., 2000; Perez et al., 2000). Following this event, several other large scale MMEs have been reported, along with numerous other minor ones, which are usually more restricted in geographic extend and/or number of affected species (Garrabou et al., 2009; Rivetti et al., 2014; Marbà et al., 2015; Rubio-Portillo et al., 2016, authors' personal observations). These events have generally been associated with strong and recurrent marine heat waves (Crisci et al., 2011; Kersting et al., 2013; Turicchia et al., 2018; Bensoussan et al., 2019) which are becoming more frequent globally (Smale et al., 2019). Both field observations and future projections using Regional Coupled Models (Adloff et al., 2015; Darmaraki et al., 2019) show the increase in Mediterranean sea surface temperature, with more frequent occurrence of extreme ocean warming events. As a result, new MMEs are expected during the coming years. To date, despite the efforts, neither updated nor comprehensive information can support scientific analysis of mortality events at a Mediterranean regional scale. Such information is vital to guide management and conservation strategies that can then inform adaptive management schemes that aim to face the impacts of climate change.

Keywords: