Hypoxia and anoxia have occurred in the Northern Adriatic in both offshore and coastal waters, at least since the beginning of 1900. Despite several specific studies on these events are available, an overall long-term analysis of their recurrence and triggering mechanisms may provide a tool for a better understanding of ecosystem present evolution. A compilation and analysis of historical information on the occurrence of hypoxia and anoxia in the North Adriatic was therefore done, focusing on the Emilia Romagna coast.

Time series of Po River discharges and meteorological data (air temperature, precipitation, wind intensity and direction) were analysed as local conditions that may favour this phenomenon. Extension, duration and diffusion of hypo-anoxic events were also analysed, in order to evaluate space and temporal evolutionary trends. To this aim, time series of bottom dissolved O$_2$ distribution for the years 1981-2005 were analysed and compared with reported field observations.

The results point to an increase of short-lived events in shallow waters, often repeated over the year, which causes a continuous stress on pelagic and benthic habitats. A complex connections of the events with precipitation, due to the time delay between rainfall and Po River loads caused by the W-E elongated shape of its drainage basin, is shown. An important effect is also played by meteorological conditions at local scale (low wind intensity, high air temperature, winter NNE wind). Long term changes may be related to regional changes of climatic conditions, in particular as concerned as the highest frequency of irregular seasonal cycles.