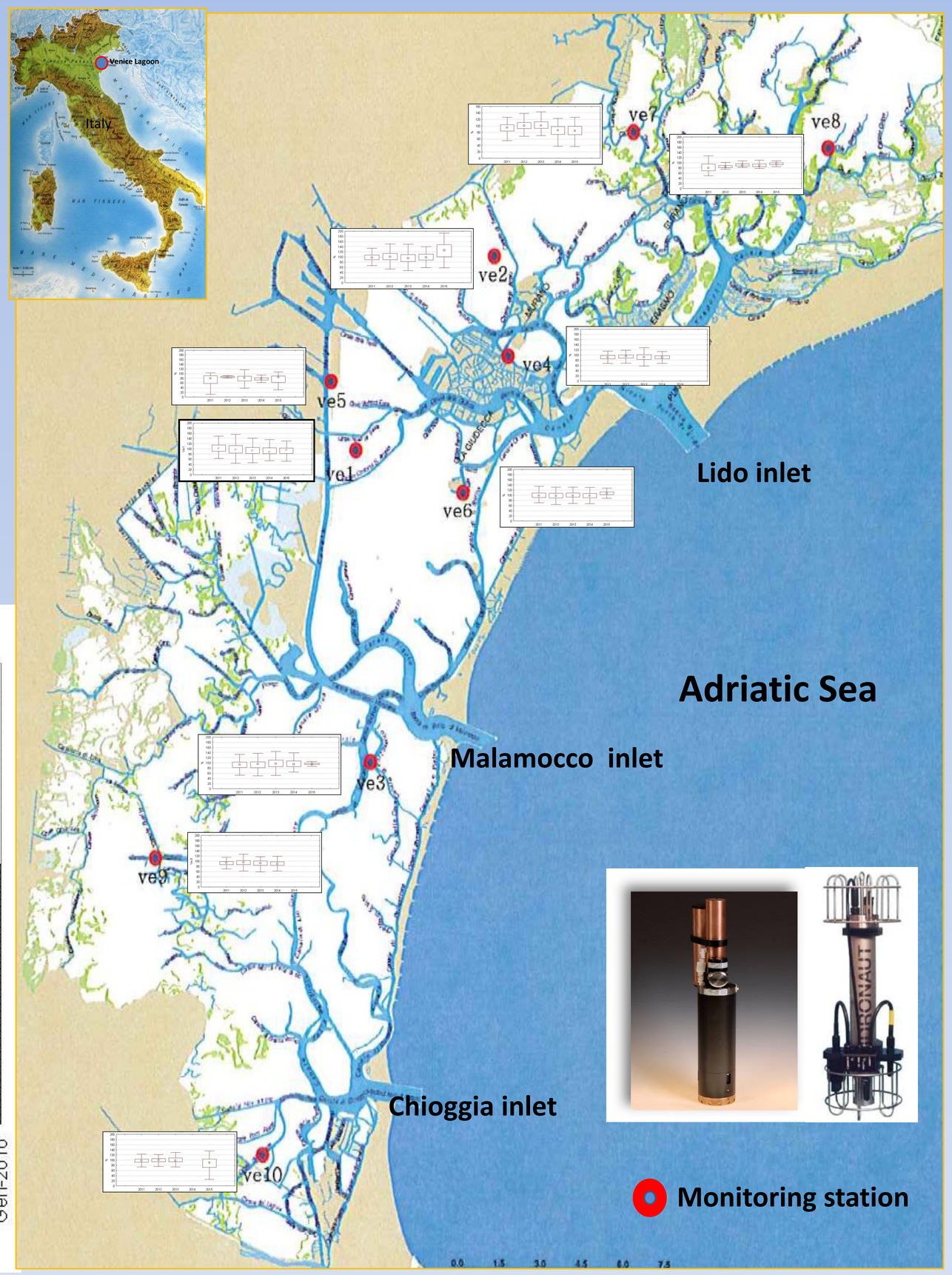
THE REAL-TIME WATER QUALITY MONITORING NETWORK OF THE VENICE LAGOON

Christian Badetti[1*], Claudio Carrer [1], Alessandro Gurato[1], Alberto Antico[2], Mauro Grassi[2], Francesco Sorrentino[2]
[1] Thetis Spa, Castello 2737/f, 30125 Venezia, Italy
[2] Ministero delle Infrastrutture e dei Trasporti Provveditorato Interregionale per le OO.PP. Del Triveneto, San Polo 19, 30125 Venezia, Italy
e-mail: Christian.Badetti@thetis.it

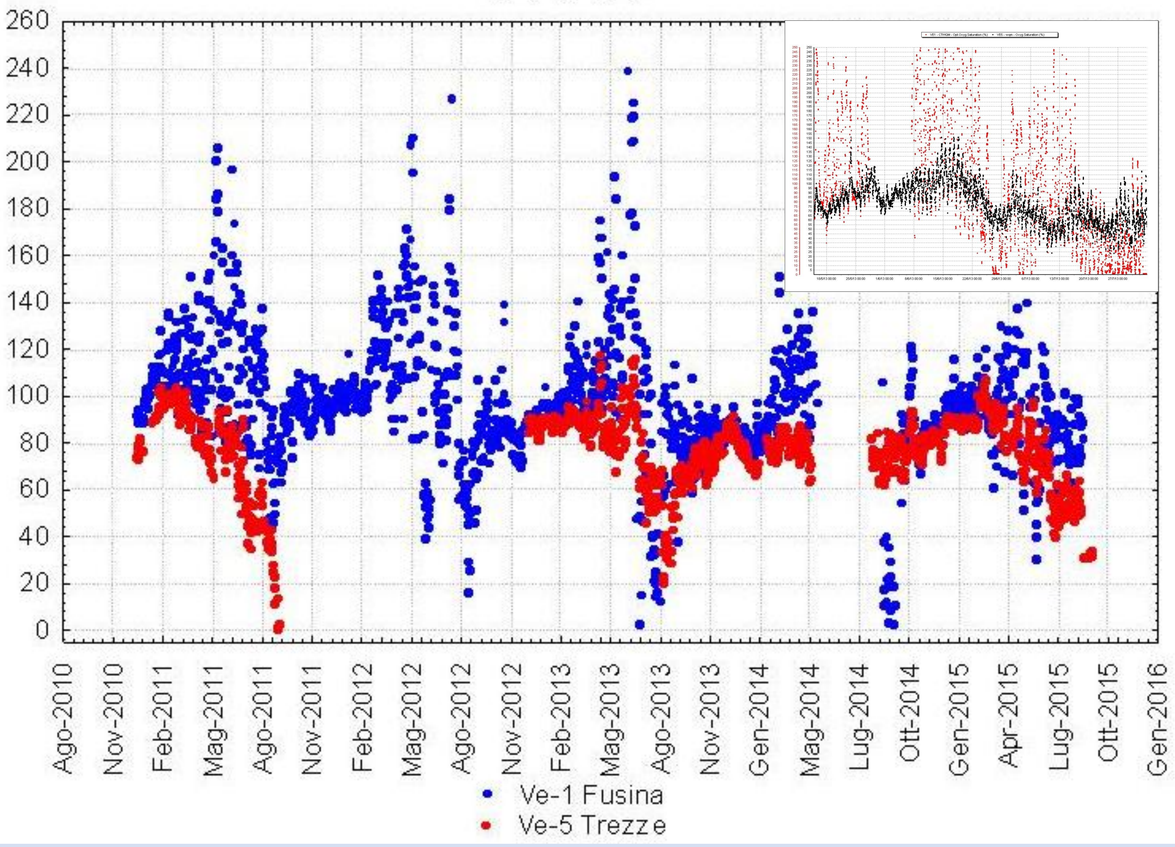
Introduction: The Venice Water Authority is taking a series of measures to counteract: *i*) the degradation of the lagoon, including the dredging and clean-up of contaminated sediments and sites, ii) control and prevention of industrial pollution and iii) wetlands reconstruction. In order to control the status of the ecosystem the Provveditorato Interegionale per le Opere Pubbliche del Triveneto has set up a real-time system to monitor the quality of the Venice lagoon water .

Parameters followed : The monitoring system is composed of 10 stations placed in different areas of the lagoon. Each station is equipped with multi-parameter probes which measure: water depth, temperature, conductivity, salinity, dissolved oxygen, pH, redox potential, chlorophyll concentration and turbidity.

Discussion: The level of oxygen in the Lagoon is an important measure of the water quality. Dissolved oxygen is essential for a healthy aquatic ecosystem. It decreases with higher temperature, salinity, pressure changes and degradation of organic matter and it can vary following daily and/or seasonal patterns. If dissolved oxygen concentrations drop below a certain level, fish mortality rates can rise. The situation is more critical during spring and summer seasons.



Dissolved Oxygen %



Conclusions and Future Work: The real-time monitoring system is producing crucial information which are fundamental to study and protect the Venice lagoon ecosystem. Beside a real-time monitoring of several chemical and physical parameters in the Lagoon ecosystem, the collected data allows to predict alteration of the lagoon equilibrium.