



A Vision of Venice in the next Fin-de-Siècle

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The IPCC's Fifth Assessment Report projections of sea level rise are larger than in the previous one. In the Adriatic a sea level rise higher than 60 cm is considered possible and rise of one meter cannot be excluded.

An end-of-century a scenario in which the mobile barrier at the inlets will not be sufficient to protect the City of Venice from permanent floods is realistic and the closure of the lagoon will become inevitable.

The possibility of converting the lagoon of Venice in an enclosed non-tidal basin is discussed. The aim is to protect the City preserving as much as possible the features of a healthy brackish ecosystem able to provide many of the ecosystem services it provides at present.

This involves technological challenges, a deeper understanding of the ecological functioning of enclosed coastal basins, and last but not least, a shift in the educational and cultural paradigms.

There is the need to endorse a coordinated and large-scale research effort to understand what will be the new hydrology and ecohydrology of the lagoon. The relationship between ecosystem metabolism and hydrology should be approached in the conceptual framework of lagoonal saprobity. Ad hoc research programs with experimental studies and observational monitoring should be implemented to improve our understanding of new ecological scenarios.

Among the new opportunities arising from an heavy hydrological management there is the possibility to keep the water at an optimum level for the fruition of the City as it was a few centuries ago. It is likely that the sea level rise would change the entire geographical context. Brackish and freshwater wetlands surrounding the lagoon of Venice, reclaimed during the last century, will be probably ingressed by the sea. An attentive adaptive policy of wetland re-creation could supply both the ecological functions and the ecosystem services lost by the lagoon of Venice.

The rapid adoption of a long-term strategy is therefore needed. Strategies should include careful economic and territorial planning addressing the reduction of loads and pressures on the lagoon, making possible the attainment of a sound ecological balance in an enclosed lagoon.