

***Abstract***

Title: Restauració del Delta de l'Ebre 1. Recuperació de la configuració del Delta de l'Ebre.

Author: Víctor Molinet Coll.

Tutor: Salvador Tarragó Cid.

Nowadays the Ebro Delta is in serious danger of disappearance. Construction of high dams in the Ebro River has caused a 99% decrease of sediment that arrived to river's mouth by the early 20<sup>th</sup> century. Solid contribution's retention has caused the cease of Delta's growing and threatens reducing its extension. In the last years many people has concerned about the importance of a natural landscape like the Delta, and this feeling has grown after the numerous protests against Ebro River's diversion. It becomes necessary to analyze all problems surrounding the Delta and to try to propose global answers.

The Tesina begins describing different aspects from the Ebro Delta: morphology, the Ebro River and its drainage basin, sediments, coastal dynamics, socioeconomic aspects and its natural wealth. Later we study its history, from its origin 6000 years ago to present time. We discuss on the two theories about its evolution, and we analyze in detail recent changes, from the construction of Ebro River's high dams (Riba-roja and Mequinzenza) to present time.

After knowing its history we talk about the different problems affecting the river. The most important one is the reduction of solid contribution due to the regulation of 97% of the river basin, which has stopped Ebro Delta's evolution. Coastal erosion is changing its form, in certain zones surface is lost (mainly Cap Tortosa, great ecological and social value) and it gains in others (the two Flechas). Subsidence, compaction of Delta's sediments, could become a serious problem in the future, and it can be increased by relative sea level rise as a result of climatic change. Presence of saline wedge and eutrophication causes anoxia states on the river, an important ecological issue. Finally we study Ebro River's pollution in its mouth.

Before studying possible solutions to Ebro Delta's problems, we analyze issues from other important deltas worldwide and some institutional arrangements.

Finally we study some proposals made for Ebro Delta's conservation. There are interventionist options, like building high embankments and dikes surrounding coastline and lakes; softer ones, like artificial feeding to threatened zones, and even those who talk about nonintervention. We specially emphasize flushing, a new technique practically unknown in Spain that seems to be a very good short term alternative to increase Ebro River's sediment transport.