



S.It.E. - Società Italiana di Ecologia

# Capitale Naturale: la Gestione per la Conservazione



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## S4.P2 The history of the introduced parasite *Anguillicoloides crassus*: insights from the case study of the Comacchio lagoon

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Most fish in wild or cultivated populations are infected and their translocations involve of necessity the translocations of their parasites. By the last century, parasitic helminths have changed and expanded their geographical ranges as a consequence of the human transportation of fish for differing purposes. This is the case of the nematode *Anguillicoloides crassus* which was introduced into Europe from East Asia around 1980, through transfer of live *Anguilla japonica* for consumption, and then spread. This parasite is considered a serious pathogen for the European eel *Anguilla anguilla*: monitoring the occurrence and understanding the ecological factors which drive the burden of *A. crassus* in its endangered host are of prime importance for the conservation and management of eel populations. The first report of *A. crassus* in the Comacchio lagoon dates back to 1997. From 2005 to 2017 on numerous occasions 303 eels (yellow and silver) were sampled from the same site and examined in search of *A. crassus* in the swimbladder: 15 eels (5%) were infected, the intensity of infection ranged from 1 to 5 and a total of 27 parasites were found. The prevalence and abundance remained low throughout the period of the investigation and had increase slightly from 2005-6 to 2013-17. These parameters were much higher in eel populations from freshwater localities. Low levels of *A. crassus* similar to those found in Comacchio lagoon were reported in other Mediterranean lagoons with survivorship declining with increasing salinity.

*A. crassus* could be an excellent colonizer but the conditions of the study area limited its invasiveness and pathogenic effects. The infection due to this parasite appears to be of little or no importance in the decline of eel population.