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S4.3 Environmental factors driving parasite community composition of European eel in the Comacchio lagoon

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Parasites represent a ubiquitous component of aquatic communities. Occurrence, burden, distribution and also pathogenicity of parasites are affected by numerous abiotic and biotic factors acting at different scales and having direct effects on parasites or indirect on hosts. Complex relationships link parasites, host and their common environment.

This research is based on a long-term monitoring of the parasite fauna of European eel *Anguilla anguilla* from Comacchio lagoon (North Adriatic Sea). The great majority of studies on parasite community of eel in Europe have been carried out in freshwater ecosystems, rivers and lakes, whilst little is known with reference to saline or brackish lagoons. Three hundred forty-five eels were collected and analyzed between 1997 and 2017 with the following aims (i) to describe the parasite component community and its temporal trend over 20 years of study, (ii) to compare the eel parasite community of Comacchio with those of *A. anguilla* from other Mediterranean coastal lagoons and (iii) to determine the influence of environmental variables (i.e. temperature, salinity, season, density of hosts) and host characteristics (i.e. stage, size) on occurrence and burden of the parasite species.

The total component community was composed of 10 species of helminth endoparasites with complex life cycles requiring different host species (i.e. mollusks, crustaceans, annelids, fishes, birds). The relative abundance of the parasite species varied over time but the parasite community in Comacchio lagoon appeared stable with little change in composition over 20 years. Despite overall similarities in parasite fauna between different coastal lagoons, a salinity-dependence of parasite community structure emerges.