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# 54<sup>th</sup> EUROPEAN MARINE BIOLOGY SYMPOSIUM

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BOOK OF ABSTRACTS

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## Talk

### Movement and redistribution of species

#### Can environmental gradients promote non-indigenous species recruitment? The case study of the Ravenna channel-port

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Harbours are generally regarded as arrival and redistribution points for non-indigenous species that can be transported by both commercial and touristic marine traffic. The reduced water quality and the abundance of artificial structures may promote the development of simplified marine communities that offer reduced biotic resistance to the establishment of new competitive species, making these places receptacles of non-indigenous species. In Mediterranean ports, some species have been present for many decades or even centuries and are already naturalized, while others are recently introduced. The presence of environmental gradients within harbours could generate favourable conditions for different species. The Ravenna channel-port (northern Adriatic Sea), with over 11 km of length, is emblematic of this. The intertidal benthic communities inhabiting concrete walls drastically change along a marked gradient of pollution and confinement. In the upper half of the channel-port, the native mussel *Mytilus galloprovincialis* is replaced by the exotic mussel *Xenostrobus securis*. Beside the change in the main habitat-forming species, the number of alien species increases toward the inner part of the port. While most of the environmental management efforts are aimed at limiting the transport of individuals and propagules (e.g. cleaning hulls, developing better antifouling paints, regulate ballast waters), more attention should be directed in understanding the ecological processes behind these spatial patterns inside harbours in order to develop strategies and technologies to counteract the local establishment success of non-indigenous species within ports all-around the world. Therein, Ravenna channel-port with its strong environmental gradient may represent an ideal field laboratory.

Key words: Alien species, Marine traffic, Harbour, Mediterranean Sea