

**VI.INTERNATIONAL HALICH CONGRESS ON
MULTIDISCIPLINARY SCIENTIFIC RESEARCH**

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THE BOOK OF ABSTRACTS



**Edited by
Prof. Dr. Muhittin ELIAÇIK
Gulnaz GAFUROVA**

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AN UPDATED OVERVIEW ON ALIEN MACROPHYTES IN SICILIAN MARINE
PROTECTED AREAS (SOUTHERN MEDITERRANEAN SEA)

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ABSTRACT

Biological invasions are a key driver of global change, affecting biodiversity and natural ecosystem functioning. Non-indigenous species (NIS) with significant established and expanding populations have the potential to become invasive, with serious environmental, socio-economic, and/or human health consequences. Sicilian Islands and all the Marine Protected Areas (MPAs) they host, are notably vulnerable to biological invasions, due to their strategic position at the crossroads between the South Western and Eastern Mediterranean Sea, by virtue of the intense maritime traffic. The impact of NIS on marine habitats within MPAs, whose major aim is biodiversity conservation, can be significant, even highly detrimental. Therefore, monitoring NIS distribution and expansion trends is critical in these areas for planning effective conservation strategies. To date, a total of 25 macrophytes was recorded for the Sicilian MPAs, belonging to the following taxonomic groups: Rhodophyta (15), Ochrophyta (6), Chlorophyta (3) and Tracheophyta (1). Pelagian Islands, Plemmirio and Ciclopi MPAs, located in the Strait of Sicily and the Ionian Sea respectively, registered the highest number (13), followed by the Egadi Islands MPA (12), located in the Tyrrhenian Sea. The red alga *Asparagopsis armata* Harvey and the green alga *Caulerpa cylindracea* Sonder were the most frequently recorded species. The presence of *C. cylindracea* in all the Sicilian MPAs, confirms the invasiveness of this species, which is able to compete with native macrophytes. Despite their fundamental role in the conservation of marine biodiversity, MPAs are not immune to NIS, evidencing their vulnerability to this phenomenon and confirming that protection does not hinder the introduction and spreading of NIS. The creation of permanent observatories and alarm systems, able to early detect new introductions and to follow the spread of species already present might be an effective tool in the management of present and future introductions of NIS in MPAs.

Key words: Biodiversity, Islands, Marine Protected Areas, Mediterranean Sea, Non-Indigenous Species.