



# Joint ESENIAS and DIAS Scientific Conference and 8<sup>th</sup> ESENIAS Workshop

*Management and sharing of IAS data to  
support knowledge-based decision making at  
regional level*

26-28 September 2018  
BUCHAREST, ROMANIA

## Book of Abstracts

BUCHAREST, ROMANIA  
2018

# NON-INDIGENOUS SPECIES (NIS) WITHIN MARINE PROTECTED AREAS (MPAS). THE CASE STUDY OF THE AEGADIAN ISLANDS MPA (SICILY, TYRRHENIAN SEA) AND THE DWEJRA MPA (MALTESE ISLANDS, IONIAN SEA)

*Anna Maria Mannino<sup>1</sup>, Paolo Balistreri<sup>2</sup>, Alan Deidun<sup>3</sup>*

<sup>1</sup>Department of Biological, Chemical and Pharmaceutical Sciences and Technologies, Section of Botany and Plant Ecology, University of Palermo, Via Archirafi 38, 90123 Palermo, Italy; annamaria.mannino@unipa.it

<sup>2</sup>Bio&Tec Soc. Coop., Via Marinella 33 B, 91100 Trapani, Italy

<sup>3</sup>Department of Geosciences, Faculty of Science, University of Malta tal-Qroqq campus, Msida MSD 2080 Malta

The introduction of non-indigenous species (NIS) has been pointed out as a major threat to biodiversity. NIS may become invasive alien species (IAS) and may cause biodiversity loss and ecosystem service changes. In the Mediterranean Sea, Sicily and surrounding islands, also including a high number of Marine Protected Area (MPAs), as a consequence of their geographic position and the intense maritime traffic, is a region particularly vulnerable and prone to NIS invasions. Since frontiers do not exist in the sea, biological invasions may severely affect MPAs, whose major aim is biodiversity conservation.

Among the Sicilian MPAs, the Aegadian Islands MPA report the highest number of NIS (19). Maritime traffic has certainly spearheaded the introduction and spread of these NIS. The presence of *Caulerpa cylindracea* in all the Sicilian MPAs, confirms the invasiveness of this species. Within the Aegadian Islands MPA anchoring is the main vector for the spread of this NIS, which has affected algal diversity but also favoured

Topic 1: Invasive alien species traits and trends | Topic 2: Vectors and pathways for invasive alien species introductions

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the establishment of other NIS namely the sabellid *Branchiomma bairdi*. Within the Dwejra MPA (Maltese Islands), anchoring has favoured the colonization by a number of vegetal NIS, namely the phanerogam *Halophila stipulacea* and the alga *Caulerpa taxifolia* var. *distichophylla*, mainly by creating clearances within the previously continuous *Posidonia oceanica* meadow. The high presence of NIS in MPAs confirms that they are not immune to NIS invasions. The expansion of NIS by recreational vessels represents a risk for MPAs, which are popular touristic destinations. The dissemination of good practices may stop new introductions, therefore enhancing biodiversity conservation.

The creation of permanent observatories and alarm systems involving Sicilian and Maltese MPAs, 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, Marine Protected Areas, Mediterranean Sea, Non-Indigenous Species