

{rokbox title=| European subregions (modified from Jensen et al. [34]) :: Image:
Authors|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-stat
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ceanografico-baleares-ieo-csic-status-trends-rate-comas-2022-et-al.jpg{/rokbox}

Argyro Zenetos, Konstantinos Tsiamis, Marika Galanidi, Natacha Carvalho, Cátia Bartilotti, João Canning-Clode, Luca Castriota, Paula Chainho, Robert Comas-González, Ana C. Costa, Branko Dragičević, Jakov Dulčić, Marco Faasse, Ann-Britt Florin, Arjan Gittenberger, Hans Jakobsen, Anders Jelmert, Francis Kerckhof, Maiju Lehtiniemi, Silvia Livi, Kim Lundgreen, Vesna Macic, Cécile Massé, Borut Mavrič, Rahmat Naddafi, Martina Orlando-Bonaca, Slavica Petovic, **Lydia Png-Gonzalez**, **Aina Carbonell Quetglas**, Romeu S. Ribeiro, Tiago Cidade, Sander Smolders, Peter A. U. Stæhr, Frederique Viard and Okko Outinen, 2022.

[Status and Trends in the Rate of Introduction of Marine Non-Indigenous Species in European Seas.](#)

Diversity 2022.14(12).1077. <https://doi.org/10.3390/d14121077>

Abstract: Invasive alien species are a major worldwide driver of biodiversity change. The current study lists verified records of non-indigenous species (NIS) in European marine waters until 2020, with the purpose of establishing a baseline, assessing trends, and discussing appropriate threshold values for good environmental status (GES) according to the relevant European legislation. All NIS records were verified by national experts and trends are presented in six-year assessment periods from 1970 to 2020 according to the European Union Marine Strategy Framework Directive. Altogether, 874 NIS have been introduced to European marine waters until 2020 with the Mediterranean Sea and North-East Atlantic Ocean hosting most of the introductions. Overall, the number of new introductions has steadily increased since 2000. The annual rate of new introductions reached 21 new NIS in European seas within the last six-year assessment period (2012–2017). This increase is likely due to increased human activities and research efforts that have intensified during the early 21st century within European Seas. As Europe seas are not environmentally, nor geographically homogenous, the setting of threshold values for assessing GES requires regional expertise. Further, once management measures are operational, pathway-specific threshold values would enable assessing the effectiveness of such measures.

Keywords: non-indigenous species, European seas, regional seas, MSFD, good environmental status, validation, uncertainties.