

THE STATUS OF SEAGRASS HABITATS IN THE MEDITERRANEAN

JAVIER ROMERO¹

¹Department of Ecology, University of Barcelona, Avda. Diagonal 647, E-08028 Barcelona, Spain, jromero@ub.edu

Seagrass meadows are among the most threatened marine habitats worldwide. This is a matter of big concern not only for scientists and conservationists, but also for managers and, increasingly, for the society. This concern arises from the high value of these habitats in terms of the goods and services they provide and their outstanding ecological relevance. Moreover, seagrass deterioration is not only a matter of concern *per se*, but also because seagrasses are sentinel species reflecting general environmental quality of coastal waters.

Seagrasses constitute a poorly diversified group of marine angiosperms (ca. 60 species worldwide) belonging to a few families within the Hydrocharitales and the Najadales. In the Mediterranean, and excluding the Ruppiaceae, only five species are found. Among them, the most relevant from an ecological point of view is *Posidonia oceanica*, which forms extensive meadows in relatively shallow waters (from near the surface to 40-50 m). This species is extremely vulnerable to environmental changes, and, specifically, to man-made impacts. This vulnerability is caused by a series of biological features, among which the very high belowground, respiratory biomass (relative to the photosynthetic biomass), the position of leaf meristems close to the sediment, the low colonization capacity and the seemingly low genetic diversity.

Mediterranean coastline is densely populated, especially in the NW basin, and human activities (sewage disposal, aquaculture, boating, fishing, coastal constructions...) represent important pressures on those ecosystems, that have caused their significant decline at least over the last 50 years. To these, recent pressures, such as the spread of invasive species of climate change, should be added. Despite the scientific efforts invested in understanding the causes of this decline, and the processes underlying it, and despite the increasing public awareness, the real extent of seagrass (*P. oceanica*) losses at a Mediterranean scale and its present status remains largely unknown.

The term "status" refers to the condition with respect to circumstances. Applied to natural ecosystems, it should probably be understood as the actual condition with respect to a reference, unaltered condition. In the case of seagrasses, status should be evaluated at least from three points of view: seagrass distribution (surface of the meadows), seagrass abundance (cover and density of the ramets or shoots) and seagrass health (physiological and ecological indicators). In the absence of reliable and extensive data for the whole Mediterranean, I suggest to use the Catalan Coast (ca. 600 km, NE Spain) as a well documented example of the situation in a densely populated area, taking putative pre-industrial conditions as the reference. Meadows seem to have regress to 75-80% of their former surface. The abundance (cover and shoot density) has decreased significantly in 30% of the meadows, and dramatically in another 30%. Finally, 35% of extant meadows show signs of health deterioration. These figures are probably representative of the continental coasts of the NW basin. However, seagrass status should be much better in other areas, such as islands (Balearic, Corsica, Sardinia), large parts the Eastern basin and areas on the south side.

To provide an accurate, updated and extensive status evaluation of seagrass habitats of the Mediterranean seems a challenge for future cooperative research.

INDICE