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Libro degli Abstract

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CAN MPAS PROTECT SEA URCHIN STOCKS?

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Sea urchins have long attracted attention from scientists worldwide for their ecological role in coastal areas. Entire communities structures associated to kelp beds and related ecosystem functions were found to strictly depend on grazing by urchins. Sea urchins, in addition, have been used as a food resource by humans since prehistory, and presently they are one of the important sea food (both exploited from the wild and in part obtained from aquaculture) consumed in many regions, but also exported-imported through the world. In the Mediterranean sea, the purple sea urchin *Paracentrotus lividus* (Lamarck) exerts a key ecological as a main regulator of the structure of coastal communities. At the same time *P. lividus* is recreationally and commercially exploited in many Mediterranean areas, as both male and female gonads are considered a delicacy in several countries. In the past, this species was locally fished and consumed. Presently the market of this sea food is expanding, and therefore major concern should be devoted to avoid overexploitation and possible community-wide effects of overfishing. The goal of the study is to figure out if well-enforced marine reserves can increase density, size and reproductive potential (gonad weight) of *P. lividus*, often important for the local economy. We examined the effects of *P. lividus* recreational harvesting on the species itself on rocky substrates of Ustica Island MPA. We compared the average density, size structure and gonad weight of *P. lividus* recorded at protected (no take zone) and fished sites (take zone C) in summer 2015 and 2016. *P. lividus* was always larger and more abundant at the protected sites than the fished ones. Results suggest that stronger management measures should be adopted by managers of MPAs to accomplish conservation of wild *P. lividus* populations also in the take zones.