



# IMMR'09

INTERNATIONAL MEETING ON MARINE RESOURCES

Auditório da Escola Superior de Turismo e Tecnologia do Mar  
16 17 18 November 2009 · Peniche · Portugal

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Abstracts

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Nov. 2009

## » The exploitation of patellid limpets in the Azores

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Once the 6<sup>th</sup> most important fishery in the Azores, the exploitation of patellid limpets collapsed in 1985. Legislation was passed in 1993 to protect this resource and included the establishment of (i) Limpet protected Zones (LPZ) where the harvesting of limpets is permanently restricted, (ii) seasonal closures and, (iii) minimum catch sizes. In the present study we examine the population structure of patellid limpets in the Azores, the effects of management on population stocks and the community-level impacts of this fishery. Our results show that LPZ's, as well as the seasonal closure, have been largely ineffective in protecting this resource. Low enforcement and high levels of illegal harvesting are likely to have considerably impaired the success of current management strategies. At the scale of the archipelago, the population structure of patellid limpets showed clear signs of recruitment-exploitation for *Patella aspera* and size-exploitation for *P. candei*. The abundance and size structure of limpets differed among islands most probably as a result of different exploitation regimes. As such, limpets were more abundant and attained larger sizes in the less exploited islands (Flores) and were less abundant and of smaller size in the most exploited islands (São Miguel). Regional-scale variations in the community structure were also correlated with variations in limpet abundance and hence with the intensity of limpet exploitation. Where limpet exploitation was more intense, turf-forming algae outcompeted barnacle dominance at mid shore levels. This suggests that over-exploitation of limpets has led to cascading community effects with important energetic consequences promoting a shift between a net-consumer and a net-producer ecosystem.

**Keywords** Harvesting · Limpet Protected Zones · Population Structure · Community Structure · *Patella* spp. · Cascading Community Effects

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# The exploitation of patellid limpets in the Azores

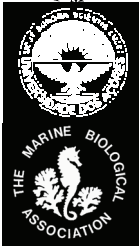
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Peniche, November 2009