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Orientation: Sustainable use of marine resources
Specialization Area: Management and Use of Resources
Research Area: 2.3 Assessment of fish and shellfish resources



PhD project: Population dynamic of mussel *Mytilus galloprovincialis* (Lamarck) in two Portuguese Marine Protected Areas and its fecundity along the coast

Supervisors: Dr. Henrique Queiroga (University of Aveiro)
Dr. Laura Peteiro (University of Vigo)

Summary: Understanding population dynamics of complex-life species is crucial to understand the spatial structure of coastal populations and develop effective management strategies. Larval dispersal patterns determine local population size and the degree of connectivity between sub-populations, providing crucial information for MPAs design. Studies of settlement patterns combined with local oceanography are essential to infer larval dispersal patterns and potential connectivity pathways between populations. This work proposes to do field observations to infer larval dispersal patterns of *Mytilus galloprovincialis* in the Western Iberia Upwelling Ecosystem in the frame of two existing MPAs, and fecundity along the Portuguese coast. Spatial settlement patterns will be evaluated inside and in adjacent areas of two MPAs exposed to different oceanographic characteristics (*e.g.* upwelling intensity). Post-settlement mortality and growth rates of early settlers will be inferred from the settlement time series. And, estimates of fecundity and its relationships with the environmental conditions along the Portuguese coast will be performed. The integration of this information will allow us to increase our understanding on the population dynamics of this model specie.

