

De Mesel Ilse

Royal Belgian Institute of Natural Sciences

Author(s): Ilse De Mesel¹, Steven Degraer¹, Isa Schön²

Affiliation(s) : ¹Royal Belgian Institute of Natural Sciences, Operational Directorate Natural Environment, Marine Ecology and Management, Oostende and Brussels, Belgium; ² Royal Belgian Institute of Natural Sciences, Operational Directorate Natural Environment, Freshwater Biology, Brussels, Belgium

Population genetics and phylogeography of Patella (Mollusca, Gastropoda) to assess the role of wind turbines as stepping stones for non-indigenous species in the Southern North Sea

With the introduction of offshore wind farms in the shallow waters (<50m) of the Southern North Sea, a new habitat for benthos has been created. Vertical hard structures extend from the sandy seabed to the sea surface. Species otherwise being restricted to coastal habitats could now invade offshore areas. Monitoring in Belgian waters confirmed the hypothesis that the introduced hard substrata of offshore wind farms play an important role in the establishment and the expansion of populations of both indigenous and non-indigenous species (NIS). We will present first data of an ongoing study on the population genetics of the NIS *Patella vulgata*, typically found in the intertidal zone and now also occurring on Belgian windfarms. We are screening mitochondrial (COI) and nuclear (microsatellites) markers to assess genetic connectivity between *Patella* populations along the European coast and identify the origin of the novel populations on the wind farms. These results will, in combination with dispersal modelling (see presentation of Lacroix et al.), elucidate the dispersal pattern and connectivity of *Patella* along the North Sea, and the role of wind farms as stepping stones for indigenous and non-indigenous species.

Keywords: COI, microsatellites, connectivity, NIS