

La Grande Vasière - A Potential MPA

Location

„La Grande Vasière“ is a large mud plain on the continental shelf of France in the Bay of Biscay, bordered by a massive coral reef on the continental slope. It extends NE to SW between 47°45'N- 45°40'N (see Fig. 1) partly in territorial waters, partly within the Exclusive Economic Zone (EEZ) of France.

Potential Reasons for Selection

The „Grande Vasière“ *s.s.*, as well as the adjacent coral reef on the continental slope is the natural habitat for communities of fragile species which are particularly sensitive to physical damage. While biogenic reefs ought to be subject to conservation measures under the EU Habitats Directive, there are currently no national or international protection mechanisms applied to fine sediment habitats. However, sublittoral fine sediment habitats e.g. characterised by sea-pens and burrowing macrofauna (EUNIS habitat classification A4.3/B-CMU.SpMeg) have been proposed as being of special concern to OSPAR. Hence, future measures agreed at OSPAR level could supplement the EU provisions.

Site Description

The Grande Vasière is the largest mud patch on the continental shelf in the Bay of Biscay (300 km long and 30 km wide), stretching at a depth of 90-130 m between the Penmarch peninsula in the North and the Isle of

Oléron in the South. The sandy-silty-clayey deposits stem from the rivers Loire and Gironde. The

location of the mud belt on the continental shelf coincides with the location of the winter-thermohaline front, a sedimentary area between estuarine coastal and offshore waters. The mud basin on

the shelf has its origin in the ancient „Lagune de la Vasière“, which 30 million years ago

connected the former discharge area of the Loire (Mer des Faluns) with the Golf d'Aquitaine at 46°25'N.

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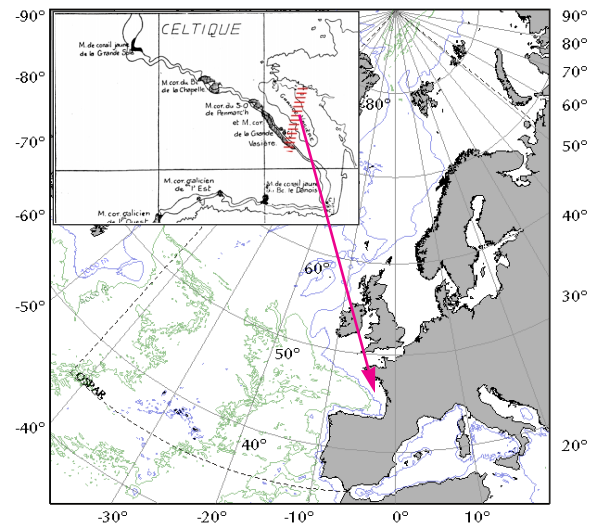


Fig. 1: Location of the „Grande Vasière“ in the North-East Atlantic. Inset: The Celtic shelf, indicating the Grande Vasière and large coral formations. (from: Le Danois, 1948, detail of Fig. 35). The hatched area indicates the location of a possible recovery transect, corresponding to the transect in Le Danois, 1948, Fig. 49.

Nowadays, this is one of the numerous canyons which form the sedimentary and ecological link between the continental shelf and the deep sea. North of this canyon, the continental shelf is made up of very rough volcanic rock, providing a habitat for extensive and highly diverse cold water coral communities forming the „Massif corallien de la Vasière“. South of the canyon, sedimentary rock forms an extremely steep slope where no coral is found. At 130-200 m depth, coarser substrate separates the mud patch from the continental slope.

Historical Biological Features - Descriptions by Le Danois (1948) and Glemarec (1973)

The characteristic fauna of the „Grande Vasière“, although differing from north to south, is best described by Fig. 2, taken from Le Danois (1948): due to minimal natural physical forcing as indicated by the aggregations of fine sediments, most fragile species such as sea-pens and sea-fans (*Pennatula phosphorea*, *Virgularia mirabilis*, *Chondractinia nodosa*) can thrive here. They live on rather long stalks and are highly sensitive to being touched by sampling gear or bottom trawls. Therefore, it is almost impossible to know about their actual distribution. Similar to the deep sea environment, where conditions are very constant depending on seasonal sedimentation of organic matter, it may be assumed that life-cycles are long and propagation low. The polychaet *Hyalinoecia tubicola*, another filter-feeder, is the most frequently observed mud inhabitant. Numerous species of echinoderms such as the brittle star *Brissopsis lyrifera*, the sea-urchin *Echinocyamus pusillus* and holothurians live on and in the sediments.

**The Grande Vasière -
a Showcase Example
for the OSPAR System
of Marine Protected
Areas**

Crustaceans including galathean crabs and sea-spiders predate here whereas the Norway lobster, target species of a whole fishery, lives within the soft sediments, often burrowing up to 2 m under the sediment surface. The fish fauna is rich in predators (sole, rays, angler, dragonets, gurnards) and seasonally occurring planktivorous species (mackerel, anchovis, sprat and herring).



Fig. 2: The fauna of „La Grande Vasière“ as described and illustrated by Le Danois (1948, Pl. I, p. 128).

Present Day Condition

The present day condition of all parts of the „Grande Vasière“ is unknown or at least unpublished. However, the extensive fishery for *Nephrops norvegicus* seems to constitute a major threat to the soft bottom fauna of the „Grande Vasière“. Trawling for *Nephrops*, although considered to be a sustainable fishery for this target species in most ICES sub-areas, causes severe effects on the benthos and the habitat. The fishing gear has been shown to (i) directly reduce the overall surface roughness of the seabed and (ii) indirectly change the complexity and oxygenation of the muddy sediment by increasing the mortality of the main bio-turbating species. The communities characterising mud habitats consist of a.o. extremely sensitive species including brittle stars, sea-pens, sea-fans which vanish upon the physical contact with fishing gear. *Nephrops* fishing grounds have been shown to decrease in species diversity. In particular, there is a complete absence of large benthic infauna (with the exception of the target species). Mortality mainly occurs on the seafloor, only a minor part of the damaged biomass is hauled up as discard which may account for 50-90 % of the catch volume. Likewise, the „Massif de la Grande Vasière“ on the shelf is endangered by contact with fishing gear and possibly food web implications of the fishery.

Human Impacts

The most substantial impact on species and habitats of the „Grande Vasière“ supposedly comes from the *Nephrops* fishery .

The stock of *Nephrops norvegicus* in the Bay of Biscay (ICES sub-area VIIIa., b) is showing signs of severe overexploitation and/or an inadequate fishing pattern causing high mortality of juveniles (ICES ACFM Report 2002). Although the stock has been declining since the early 1990s, the landings (LPUE) even have increased since 1994 due to increased gear efficiency. Twin-trawls and rock-hopper gear made trawling possible in areas that were previously inaccessible. Nearly all landings are taken by French trawlers (ICES), particularly in spring and summer. Spanish bottom trawlers fish on the southern part of the Gascogne Shelf and along the continental shelf north to 47°30 N, thus including the „massif corallien de la Grande Vasière“. Beyond the fisheries impact, litter seems to constitute a major problem for e.g. migrating turtles, in particular on the continental shelf.

Existing/Proposed Protection

At present, no management regime other than the Common Fisheries Policy (CFP) applies to human activities in the offshore waters of France. Soft sediment habitats are currently not included in the Annexes to the EU Habitats Directive, and hence sites like the „Grand Vasière“ do not qualify for inclusion in the future Natura 2000 network of protected areas. WWF proposes the designation of a recovery area, designed as a cross-shelf transect from the coast to the outer continental shelf. Such designation under French national law should at the same time become part of the envisaged OSPAR system of MPAs. The transect could also serve as experimental site for testing management measures and time-scales required to restore the natural community patterns that are characteristic for the respective environments, and the *Nephrops* stock. ICES advises to immediately reduce the exploitation rate of *Nephrops norvegicus* by 50% in order to achieve a significant increase of the stock in the short term, or a recovery plan.

Action to be Taken

WWF urges OSPAR to renew and emphasize its concern, *vis-à-vis* the bodies responsible for fisheries management, with regard to the impact of *Nephrops* fisheries on soft sediment ecosystems. The protection of habitats and species as required by Annex V of the OSPAR Convention has to be linked to fisheries management. EU institutions must put the environment at the heart of their future CFP and amend the lists of habitats and species for the selection of Special Areas of Conservation (SAC) with regard to offshore waters, including muddy habitats.

Text prepared by Sabine Christiansen

References/Further Reading

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