

Surface monitoring

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According to Warzocha (2004), the **underwater sandbanks (1110)** are defined as “sandy shoals situated in the sublittoral zone, permanently submerged in water”. They are elongated, curved or irregularly shaped, shallows, permanently submerged and usually surrounded by deeper water. Sublittoral sandbanks are mainly composed of sandy sediments but also of sediments with bigger (boulders, pebbles) or smaller (mud) grains. Shoals situated on hard bottom are considered as sandbanks only when fauna is typical of sands, not stony bottom that is underneath. Depth of 20 m is regarded as a borderline of habitat 1110 (Interpretation manual ... 2013). Usually, no phytobenthos species are found there, except algae growing on pebbles or on blue mussel aggregations which are occasionally present on the sandy bottom. Very typical of underwater sandbanks are invertebrates like *Bathyporeia pilosa*, *Pygospio elegans* and *Cerastoderma glaucum* (Warzocha 2004), which are commonly found on sandy bottom in the sublittoral zone.

The habitat 1110 is a highly natural area. Its location in shallow water and exposition to waves prevent organic matter deposition. Moreover, its location far away from pollution land sources allows to maintain natural conditions for bottom fauna communities.

In the Polish marine zone, there are three sites that are regarded as 1110 habitat, i.e. the Odra Bank, the major part of the Słupsk Bank (Warzocha 2004) and the Middle Bank (Łomniewski et al. 1975), (Fig. 23).

Odra (Odrzańska) Bank is a sandy shoal situated in the middle of the Pomeranian Bay and restricted to the depth of 10 m (site central point 14°25,195'E 54°19,118'N). Average depth of the Odra Bank is 7-8 m, while the shallowest part is 5 m. The width of the shoal, from western to eastern margin, is about 25 km, length is approx. 35 km. The eastern part of the Odra Bank is situated in the Polish exclusive economic zone and comprises 19% of the whole Sandbank. The Odra Bank is situated in two Natura 2000 areas: Refugium in the Pomeranian Bay (PLH990002) (comprises 25% of its area) and Pomeranian Bay (PLB990003) (Ławicki et al. 2012, SDF for PLH990002, SDF for PLB990003). It is composed of sandy sediment with diverse grain size. There are no reports about macrophytes in the Odra Bank area, however benthic fauna is diverse, with 21 species recorded, mainly amphipods *Bathyporeia pilosa*, bivalves *Mya arenaria*, *Cerastoderma glaucum*, *Macoma balthica*, snails *Hydrobia ulvae* and polychaetes *Pygospio elegans*, *Hediste diversicolor* (Zettler and Gosselck 2006, Ławicki et al. 2012). Also fish like flatfish, herring, sprat and salmon are observed (Warzocha 2004).

Słupsk Bank is situated in the central part of the Polish marine area, approximately 25 NM northward from Ustka and is limited by the depth of 20 m (Warzocha 2004), (site central point 16°42,068'E 54°56,344'N). This site includes 20% of the Słupsk Bank (PLC990001), which belongs to the Natura 2000 network (SDF for PLC990001). The Słupsk Bank is covered with compacted gravely-sandy sediment with aggregations of glacial erratic (habitat 1170 – reefs). Sandy bottom is devoid of macrophytes while more stony bottom area, known as “the Słupsk Bank boulder area”, is overgrown with communities of macroalgae. Sandy bottom is

inhabited by loosely lying aggregations of *Mytilus trossulus* (Jakusik et al. 2013), *Cerastoderma glaucum*, *Pygospio elegans* and *Macoma balthica* (Kruk-Dowgiałło et al. 2011).

Middle Bank is an abrasive-accumulative plain and the biggest Baltic sandbank, covering area of 33310 ha (site central point 17°24,219'E 55°39,139'N). Its southern part, so called the Southern Middle Bank, is situated in the Polish exclusive economic zone and comprises 19% of the whole Sandbank. The Middle Bank is surrounded by the Bornholm Basin, the Eastern Gotland Basin and the Słupsk Furrow. Compared to the Słupsk and Odra Bank, it is deeper, with minimum depth of 13-14 m. Its southern part is one of the most poorly investigated area in the Southern Baltic in terms of living organisms. The Middle Bank is situated outside the region covered by the Polish State Environmental Monitoring, SEM (Zaucha and Matczak 2011).

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