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Väinameri - MPA

Location

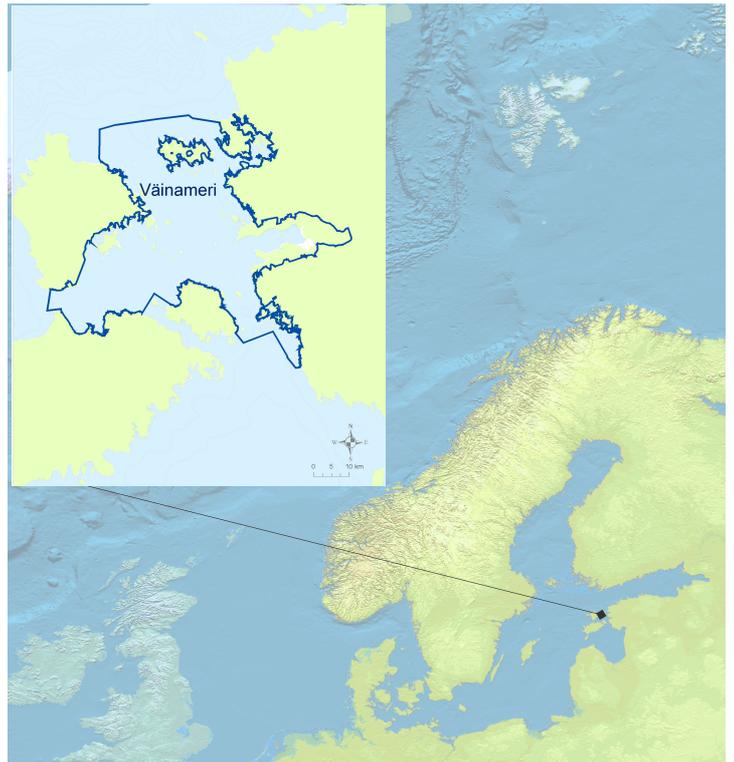
The area is located in the NE Baltic Proper and covers the marine area between the islands of Saaremaa, Hiiumaa, Vormsi, Muhu and the Estonian mainland.

Reasons for Selection

Väinameri is a sea area with high biological productivity and high diversity in different habitats. 90 % of the sea area is shallower than 10 m and therefore the photic zone reaches the bottom enabling primary productivity in most parts of the area. These habitats are important feeding grounds for diving waterfowl – over a million seabirds winter in the area – and important nursery grounds for several fish species.

Area Description

Väinameri is formed by a system of straits connecting the waters of the Gulf of Riga to the Baltic proper and the entrance to the Gulf of Finland. The total surface area of Väinameri is 2243 km² and the total cubic volume 10.6 km³. This sea area is characterized by its shallow waters. The average depth of the whole system is less than 10 m with the deepest location at 22 m in the middle of the Suur Strait. The general water exchange processes are highly dependent on the shallowness of the sea (minimum sill depth 5 m on the Suur Strait). The impact of the riverine inflow on the system is very small, because the amount of fresh water entering the system reaches only 1 km³ yr⁻¹. Due to the numerous shallow bays and the network of small islets the area could be divided into two more or less independent bodies of water. Kassari Bay, in the western part of the area, is connected to the Baltic proper through the narrow Soela Strait and separated from the eastern part by a string of islets. This part of Väinameri is more influenced by the saline waters of the Baltic proper. The system of Hari Strait – Suur Strait is strongly influenced by the water masses originating from the Gulf of Riga. Depending on wind-conditions, the basic hydro chemical characteristics can fluctuate within a wide range depending on the origin of the water filling the basin. Strong hydrological



Väinameri - the sea area between the Estonian main land and large islands of Saaremaa and Hiiumaa

fronts and sub fronts exist in the area. The seafloor constitutes mainly of soft sediments including fine mud and sand fractions. Harder substrates as gravel or boulders can be found only in the shallowest and wave exposed areas. Due to the shallowness and the substrate being dominated by fine sediment fractions on the bottom, the water transparency is often very poor. After storm events the visibility may decrease to 0.5 m, while in the case of prolonged calm weather conditions the photic zone reaches the bottom in about 90% of this area.

Feature	Value
Area size	app. 2250 km ²
Mean depth	> 10 m
Depth range	5 - 22 m
Salinity	app. 7 ‰

Habitats and biological features

Many sensitive and valuable marine habitats are represented in the area. Among them vast submerged sandy and muddy sea bottoms, stony reefs, sheltered archipelago systems are very common in the area. Among most valuable species inhabiting this area are six species of charophytes and a community of loose red algae *Furcellaria lumbricalis* and *Coccotylus truncatus* inhabiting the seafloor on the territory of approx. 200 km² in Kassari Bay.

Birds

Väinameri is one of the most important staging areas of water birds in Baltic Sea with over 0.5 million birds using it as a resting area during spring and autumn migration. 18 species of waterfowl occur in numbers of international importance, of which species that regularly gather into flocks of 50 thousand or more individuals are Barnacle Geese *Branta leucopsis*, Scaup *Aythya marila* and Goldeneye *Bucephala clangula*. The area is of particular importance for the Tundra Swan *Cygnus columbianus*, Greylag Goose *Anser anser* and Pintail *Anas acuta* with staging numbers exceeding 1/3 from total flyway population size. The Lesser White-fronted Geese – species of global conservation concern – occur in the area in significant numbers.

Väinameri is one of the strongholds in the Baltic Sea area also for threatened breeding birds. From globally threatened species healthy populations of the White-tailed Eagle *Haliaeetus albicilla*, Great Snipe *Gallinago media* and Corncrake *Crex crex* breed here. From species listed in Annex I of the EU Birds Directive largest national populations of Marsh Harrier *Circus aeruginosus*, Avocet *Recurvirostra avocetta*, Dunlin *Calidris alpina schinzii*, Caspian Tern *Sterna caspia*, Sandwich Tern *Sterna sandvicensis* and Little Tern *Sterna albifrons* breed at Väinameri.

Human uses and impacts

The area is experiencing very low human impact as the population density and overall agricultural and other economic activities in the West-Estonian Archipelago are very low. The environmental conditions are mainly influenced by climatic and environmental background impacts. Coastal fishing could be described as the only significant human impact in the area.

Protection and Management

Väinameri and its coastal areas are of outstanding value for waterfowl and waders migrating through the area, nesting, resting or moulting here. It is home for the seals and a spawning ground for the fish. Biodiversity here is closely connected to the traditional use of land, especially mowing and grazing that have created semi-natural meadow communities characteristic of the area. Therefore both land-use



Luxurious Phytobenthos communities inhabit large areas of seafloor.

intensification and abandonment would cause problems here and nature conservation is inseparably connected to resource use management. Many habitats of the area are listed in Annex 1 of the European Union's habitat directive: Reefs, coastal lagoons, mudflats and sand flats not covered by seawater at low tide, large shallow inlets and bays, estuaries, sandbanks which are slightly covered by sea water all the time.

The area is relatively rich in renewable resources that provide an important development opportunity. Important or potentially important sectors of economy are agriculture, fisheries, reed-harvest, and tourism. This far co-ordination of different activities has not been sufficient in the area – Integrated Coastal Zone Management could help to overcome this situation.

Existing/Proposed Protection

Väinameri is included in the HELCOM list of areas proposed for protection as Baltic Sea Protected Areas (BSPA). There is no legal full protection of the area, but it is proposed as Natura 2000 site and at the moment it is a temporary protected area. A coastal management plan script has been written but it has not been officially approved.

References and further reading

Suursaar et al. (1998)

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