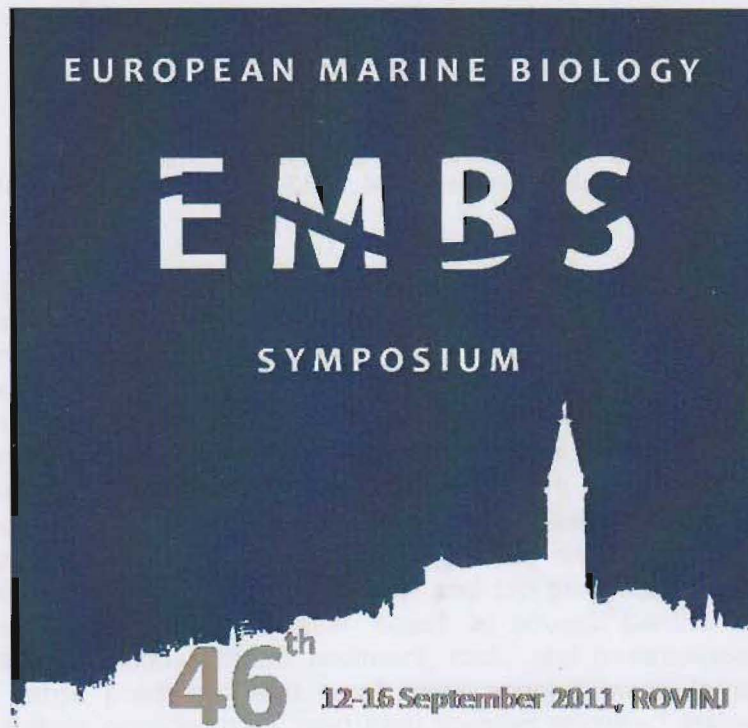


46th European Marine Biology Symposium



BOOK OF ABSTRACTS



12-16 September 2011 ROVINJ, CROATIA

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of Ruder Bošković

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**Sublittoral hard-bottom communities of Kola Peninsula Inlets
(Barents Sea) - current state and long-term changes**

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The first quantitative data on the hard-bottom shallow-water communities of the Russian coast of the Barents Sea were obtained in 1960-s. In order to access possible changes in the communities' structure we studied hard-bottom communities of the Kola Peninsula, mainly in the localities where previous studies had been done. Material was collected using SCUBA diving mainly in August of 2002-2007 from Dal'nezelenetskaja, Jarnyshnaja, Dolgaja and Medvezhja Inlets, that differ in their area and hydrology. In total, 97 quantitative samples (each 0.25 m²) from depths of 3-33 m were examined. We found 278 species of algae, invertebrates, and tunicates and distinguished five types of benthic communities according to the Morisita index for biomass. The most frequently occurred community dominated by kelp *Laminaria digitata* (204 species, depths range 3-20 m). This was followed by kelp community *Saccharina latissima* (92, 3-20 m) and bivalve community *Modiolus modiolus* (168, 15-33 m). Rarest communities dominated by sea urchin *Strongylocentrotus droebachiensis* (152, 3-20) and by red calcareous algae *Lithotamnion* spp. + barnacles *Balanus balanus* (99, 20-30). No correlation was found between the species richness of each inlet and their area and number of communities. Species richness was highest in places with intensive hydrodynamics and habitat variability. Number of communities depends mainly on the depth range where hard substrates occurred. The highest β -biodiversity was in the fjord-type inlets, while α -biodiversity – in the open inlets. Despite some observed changes potentially attributable to both red king crab introduction and warming of the Arctic, basically the structure of the hard bottom communities remained stable since the previous studies (12-40 years ago for different inlets). The most significant changes were strong increase in biomass of sea urchin *S. droebachiensis* and mussel *Mytilus edulis*. Studies were supported by programs "Biological diversity", "Fundamental basis of resources management" of RAS, and RFBR № 10-04-011764-a.

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