

Sand bank Koketrays – a Case Study on the Effect of Marine Protected Area Designation as a Key Approach to Black Sea Biodiversity and Habitats Conservation

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Abstract: Sand bank Koketrays is the second marine area declared ‘protected’ along the Bulgarian Black Sea coast in 2001. A comparative analysis between zoobenthic coenoses in Bourgas Bay and sand bank Koketrays, as the main prerequisite for the conservation of the sand bank as a protected area is discussed in the paper. Three periods in the evolution of macrozoobenthic community are outlined: the period when no local anthropogenic impact was registered (1990-1992), just after the performance of bottom trawling for *Rapana venosa* in 1999 (2000-2002) and a three years period later (2003-2006). An increasing of the opportunistic Polychaeta and Oligochaeta species in abundance is established between 2000-2002 (a total of 44% vs. 69%) and nearly 5 times decrease in abundance of the conservative mollusk species (42% vs. 9%). A positive tendency toward recovery of the ecological state of bottom invertebrate fauna after the announcement of the site as ‘protected area’ is established – the participation of sensitive species (I EG) increases up to 27.7 % and the AMBI index reaches 2.18, which indicates a process of gradually improvement of zoobenthic coenosis ecological status.

Key words: ecosystem approach, ecological state, zoobenthic coenosis