Exploring the ecological consequences of the sinking of LGC B. Montanari : Fouling on the Wreck

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In November 21984 Italian liquid gas carrier (LGC) "Brigitta Montanari" with mor than 1300 tons of vinyl chloride monomer (VCM) sank in the middle Adriatic Sea a the depth of 82 m. Rudjer Boskovic Institute, Zagreb, Croatia, supervised houling ou the wreck and recovering the cargo. The salvage operation started in autumn 1985, bu due to an accident it was stopped. Action was renewed in 1987 and successfull finished in spring 1988. More than 700 tons of VCM was recovered from the wreck bu the rest was released to the environment.

Rudjer Boskovic Institute project "Exploring the Ecological Consequences of Sinkin of LGC B.M." included the research of fouling on the wreck. Due to the fact that th fouling organisms were in the longest contact with the VCM leaking from the wrec (from the moment of larvae attachment till the hauling the wreck out), they can b one of the best indicators of toxic effects of VCM.

The fouling samples were taken on the 24th and 25th of June, 1988, during the la stage of the houling, immediately after the wreck appeared on the water surface.

Qualitative samples were taken from the stern, low, portside, starboard, ropes, an quantitative sample was taken from the left side of the bow.

Fouling developed on the wreck that had rested at the depth of 82 m for 3 years wa similar to the natural fouling of the circalitoral of the middle Adriatic. The element of the biocenosis "coraligen of lower horizon of littoral zone", the biocenosi "community of open-sea underwater rocks" and the elements of biocenosi "community of detritical bottom of the open inland area" on spots with settle sediment were found.

Decks, deck gears, masts, davits, stays, rescue boats, funnel, stern and portside of th bow were heavily overgrown. Less fouling was observed on starboard and starboar upperdeck, and there was almost no fouling on the hull below the water line, at th front side of the commanding bridge and a part of the portside. Fouling was las developed at the surfaces which were in vertical positions (surfaces with no sedimer on them). Surfaces with some sediment were less overgrown and there were n fouling organisms on the parts which were lying on the seafloor. Besides exposition t sedimentation it is possible that chemical components of paints used on the ship als influenced the larvae attachment and growth.

Quantitative sample taken from 1 m^2 of the portside weighed 7765 g and tot weight of fouling on the wreck was estimated at 10 tons.

Although more than 30 species were found the most abundant organism wa *Pygnodonta cochlear* (Poli) (over 95% of biomass). Macroscopical analysis of a organisms showed no sign of either acute or chronical toxic effects of VCM.

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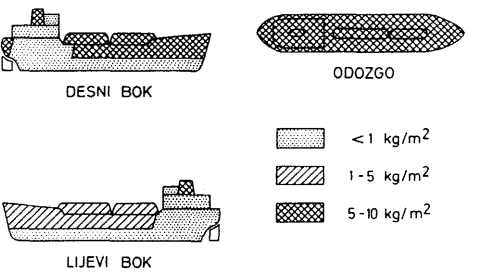

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