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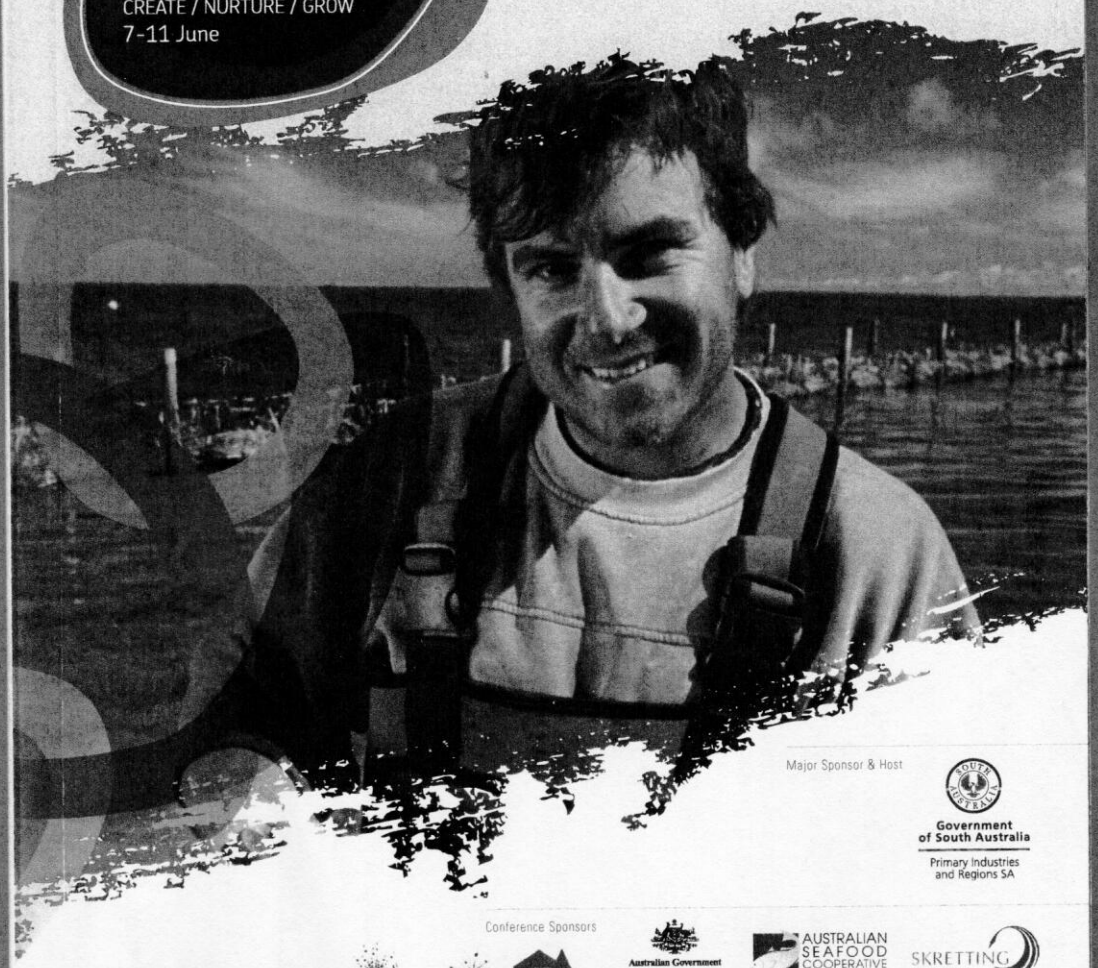

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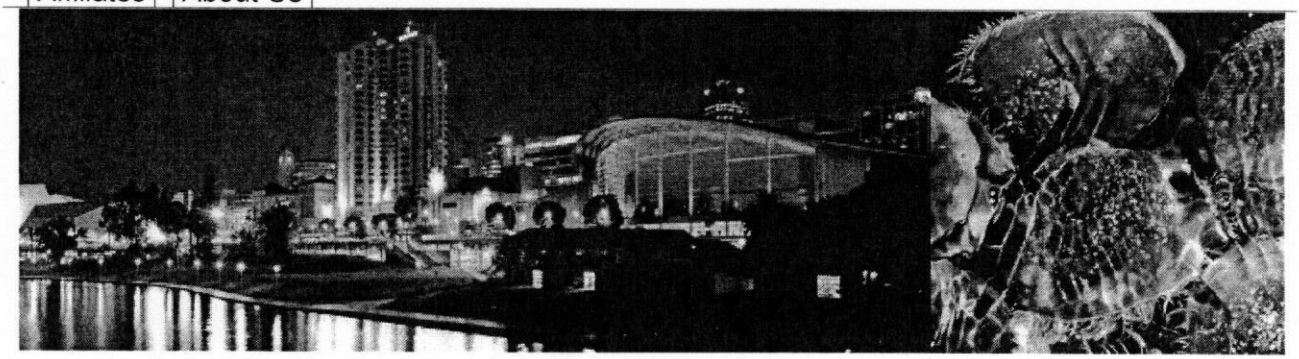

World Aquaculture 2014 - Meeting Abstract

Acartia clausi AND *Noctiluca scintillans* IN THE BOSPHORUS STRAIT REGION: EVIDENCE OF POPULATION INTERACTIONS

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Recent studies indicate that in the Turkish Straits System mesozooplankton abundance reduces in the direction from the Black to the Mediterranean Seas whilst the species composition increases [1 - 4]. However, the data about the species interactions in the zones of mixing of the Mediterranean and Black Sea zooplankton communities are scarce. The aim of the present study was to analyze the dynamics of *Noctiluca scintillans* abundance in relation to the numbers of live and dead individuals, age structure of *Acartia clausi* population in the Bosphorus Strait region of the Black and Marmara Seas during 2005 - 2009.

Mesoplankton samples were collected with a closing Nansen net seasonally during 2005 - 2009 at the permanent stations located in the Marmara Sea near the Prince Islands (MP) and Bosphorus (MB) and in the Black Sea near the Bosphorus Strait entrance (BB) by vertical hauls from surface layers consisting of the Black Sea water, intermediate layers and deep layers formed by the Mediterranean Sea water. Depth and thickness of the layers were due to the dynamics of water masses vertical structure in the studied area. The samples were preserved with 4 % borax-buffered formaldehyde. In the laboratory the numbers of *A. clausi* developmental stages being alive before sampling and their carcasses were determined under a dissecting microscope.

In 75 % of our observations *A. clausi* abundance decreased in the direction from the Black Sea toward the Marmara Sea from 41566 ± 24862 ind. m^{-2} in BB to 10459 ± 7530 ind. m^{-2} in MB and 9630 ± 8996 ind. m^{-2} in MP. In April and November 2008 maximum abundance of *A. clausi* (87116 and 72045 ind. m^{-2}, respectively) was in MB, probably, because of strong southern winds. Except these two months, total abundance of *A. clausi* in MB highly correlated with that in MP (r = 0.84) whilst the share of early copepodite stages in MB correlated with the share of females in MP (r = 0.76) and did not relate to age structure of *A. clausi* population in BB. In the Marmara Sea (especially in MB) mean mortality of *A. clausi* constituted 30 % and reached 79 % in intermediate layers consisting of the Mediterranean and Black Sea water. The share of dead individuals in MB correlated with total abundance of *A. clausi* in MP (r = 0.73) and did not correlate with total number of this species in BB. In contrast to *A. clausi*, the abundance of *N. scintillans* was higher in MB than in BB amounting to 545250 ind. m^{-2} in winter and 177500 ind. m^{-2} in summer. The number of this species in MB correlated with that in MP (r = 0.91) and did not relate to *N. scintillans* population state in BB. In MB *N. scintillans* abundance highly correlated with the share of dead *A. clausi* (r = 0.93) suggesting a significant role of necrozooplankton in the development of studied dinoflagellate. Consequently, the trends of population dynamics of *A. clausi* and *N. scintillans* seem to indicate that these two species form independent populations in the north-western Marmara Sea.