Oceanography/Vol.4/No.14/Summer 2013/1/9-9

Biomass and Production of the Marine Sponge Family: Haliclonidae (*Haliclona simulans* and *Haliclona oculata*) on Artificial Reefs in Northwest of the Persian Gulf

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Received Date: November 01, 2011 **Corresponding Author* *Accepted Date: June 26, 2012*

Abstract

Sponges are important components of the Persian Gulf animal communities. In this research, ecological characterization of the marine sponge, family: Haliclonidae (*Haliclona simulans* and *Haliclona oculata*) on Artificial Reefs (ARs) of Bahrakan in Northwest of the Persian Gulf was studied. Seasonal variations in biomass and productivity in two species of sponges were estimated. The sampling was carried out (from May 2009 to February 2010) by using SCUBA diving at 12m depth by throwing quadrate (0.25×0.25) randomly. 4 sites (A, B, C and D) were selected for sampling, one site were placed on old artificial reef (D) and three others on new artificial reef (A, B and C). Sponge production in ARs was studied over one year period. In both species, biomass peaks were found in February and March (Winter). The minimal production during the period of study was recorded in warm seasons. The average production for *H. simulans* and *H. oculata* was: 7.01 $gAFDMm^{-2}yr^{-1}$, yielding P/B ratio of 0.88 and 7.39 $gAFDMm^{-2}yr^{-1}$, yielding P/B ratio of 0.30, respectively. Chemical and physical factors (temperate, salinity and DO) of water in each season were measured and their relationships with biomass of sponges were compared. The results of relation between physicochemical properties of water and sponges biomass showed that the increase in salinity during cold seasons corresponded with increased biomass of vice versa.

Keywords: *Sponge, Biomass, Productivity, Artificial Reefs (ARs), Persian Gulf.*