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Composition, density and spatial distribution of zooplankton on wet season (June-August) in Inner Ambon Bay

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Abstract. Inner Ambon Bay is part of Ambon Bay, it is semi closed area and is a small pelagic fish fishing ground, especially anchovy. The anchovy is zooplankton predator therefore existence of anchovy is affected by abundance of zooplankton. The aim of the research are to know composition, density and spatial distribution of the zooplankton during wet season (June to August). Data of zooplankton composition were obtained from sampling by using plankton net at 10 observation stations, meanwhile, data of densities were collected using scientific hydroacoustic system, BioSonic DTX, on six parallel transect lines and one cross-parallel transect line. Geostatistical analyses technique was used to describe horizontal distributions of zooplankton and vertical distributions were plot in the graphs. The result shows that zooplankton community dominated by Copepod and meroplankton. Highest density was found on August (9393/m^2), while lowest density was on June (903 ind./m^2). Vertical distribution of zooplankton shows that highest density was found near surface and decrease to deeper water coloumn. On the horizontal distribution, lower densities (0 – 400 ind./m^2) occupy wider space, they evenly distributed in western, middle (north to south) and east, on the contrary, higher densities (3000- 5000 ind./m^2) occupy smaller space i.e in the south-west, south and east to north-east of Inner Ambon Bay

1. Introduction

Ambon Bay consist of Inner Ambon Bay and Outter Ambon Bay. The area of Inner Ambon Bay is 11.03 km^2, as semi closed waters and a narrow basin. According to depth detection using hydroacoustic device, known Inner Ambon Bay has 45m maximum depth [1]. This waters is a small pelagic fish fishing ground especially anchovy (*Stolephorus* spp.) in Ambon island. Anchovy resources in Inner Ambon Bay comprises *Stolephorus heterolobus*, *S. indicus*, and *S. buccannieri* [2]. These species are predator of zooplankton and best live baits used in skipjack pole and line fishery in Ambon City.

The previous results of the research of the zooplankton community in Ambon Bay found 53 genera of zooplankton which were dominated by subclass of *Copepoda* comprising *Evadne*, *Calanus*, *Parucalonus*. *Psedocalarus*, *Centropages*, *Acartia*, *Oithona*, *Lucifer*, *Oikopleura*, *Sagitta* dan fish egg. *Stolephorus* spp is the main omnivore group of phytoplankton and zooplankton [3]. Young *Stolephorus heterolobus* fish with a length of 40 mm eat small phytoplankton and zooplankton, while adult S. *heterolobus* fish eat Calanoid, Leptochela, polychaeta larvae, Lucifer, Brachyuran and larvae from other large decapods and eggs of *Stolephorus* spp. [4] and [5] found that Copepoda is the dominant zooplankton in the Inner Ambon Bay.

From the description above, it is clear that the zooplankton community plays an important role as food for anchovy, which is used as live bait to support the operation of the skipjack pole and line fishery in Ambon City. Previous studies on zooplankton as described above only include species composition and density, but have not shown the spatial distribution of these densities.

It is complicated to estimate the abundance and distribution of biomass using sampling methods with plankton net because of the small sample size, large variation, high costs and high bias also

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