

**DIVERSITY AND ABANDANCE OF
ZOOPLANKTON OFF BERUWALA AND
WELIGAMA, WEST COAST OF SRI LANKA**

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
UvaWellassa University
in partial fulfillment of the requirement of
the degree of
Bachelor of Science in Aquatic Resources Technology

by

W.M.H.P.WEERASEKARA

**Aquatic Resources Technology Degree Programme
Faculty of Animal Science and Export Agriculture
Uva Wellassa University**

2014

Abstract

Zooplankton serves as a productive base of marine ecosystems and most recently they are used as a biological indicator to assess the ecological status of aquatic environments. The purpose of this study was to determine the diversity, abundance and biomass of zooplankton in 4 areas (defined as; area A; Beruwala coastal area B; Weligama coastal area C; Beruwala offshore area and area D; Weligama off shore area) off south-western coast of Sri Lanka. Total of 22 plankton samples were collected by using R/V "Samudrika" during March and April, 2014. The sampling was carried out by using the WP-2 plankton net of 180 μm mesh-size with an opening area of 0.25 m^2 .

Preserved zooplankton sample were analyzed using microscope up to genus and species level. To determine the net-plankton biomass, a number of techniques such as displacement volume, wet weight, dry weight, ash-free dry weight method was done and tested for significant difference of biomass among different stations by ANOVA. Various diversity indices such as Shannon-Weiner, Margalef and Evenness were used to assess the zooplankton diversity in the ocean. Multiple correlation analysis revealed that there was a positive significant correlation diversity indices in different areas.

94 genera and 90 spp. of zooplankton were found in all A, B, C, and D areas. Only Beruwala area was found species are the *Microcalanus*, *Ophiothrix*, Polychaeta larvae and *Callianassa*, *Monstrilloida*, *Scaphocalanus*, *Necora*, *Poecilostomatoid*, *Anapagurus*, *Calycephorae*, *Diogenes*, *Euchaeta*, *Eudoxoides* was only found in weligama area. Zooplankton density of the area varied from 1.41 - 2.03 individuals per liter. Biomass in terms of organic matter was high compared to other areas around Sri Lanka with a range of $93.03 \pm 1.67 \%$.

The distribution pattern of major constituents of zooplankton community indicated the Weligama area is most productive in terms of secondary productivity in comparison with other areas.

Keywords: zooplankton, diversity, abundance, coastal area, offshore area, Sri Lanka