EuroSciCon
13th Edition of International Conference on
Oceanography and Marine Biology
Oceanography 2019
September 26-27, 2019 | London, UK

Spatial variability of phytoplankton assemblages during the intermonsoon in Baler Bay, Outer and Inner Casiguran Sound, Aurora, Northeastern Philippines.

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Abstract

This study investigates phytoplankton community changes in relation to environmental parameters between and within Baler Bay and Casiguran Sound, Aurora, facing Philippine Ri. Samples were collected from thirteen stations last May 2013 by filtering 10L buckets of surface water and 5L Niskin samples at 20 meters and 30-40 meters depths through a 20um sieve. Conductivity-Temperature-Depth and Acoustic-Doppler-Current Profilers were used to determine the water characteristics of each station.

A total of 89 genera from four phytoplankton groups: diatom (62), dinoflagellate (25), silicoflagellate (1) and cyanobacteria (1) were identified. Diatom showed significant vertical ($p<0.001$) and horizontal ($p<0.001$) variations. *Chaetoceros spp.* (2.73×10^6 cells L^{-1}) co-existed *Bacteriastrum spp.* at surface waters of Inner and Outer Casiguran. *Pseudonitzschia spp.* (1.73×10^6 cells L^{-1}) bloomed at the bottom of innermost Casiguran. *Trichodesmium spp.* subjugated cyanobacteria exhibited significant vertical variation in three basins, forming bloom at 20 meters depth (15,125 filaments L^{-1}). *Gonyaulax spp*.-dominated dinoflagellate revealed insignificant vertical/horizontal variations across basins. Chlorophyll significantly varied between (KW, $p<0.001$) and within basins (KW, $p<0.05$), producing Deep-Chlorophyll-Maxima at deeper waters and innermost embayment.

Aurora's distinct shelf morphology regulated counterclockwise circulation, advective transport, continuous stratification and water quality had influenced the phytoplankton assemblages with multi-species blooms at different water columns of Baler Bay and Casiguran Sound, Aurora, Northeastern Philippines influencing high productivity to the Philippine Rise.

Biography

Aime P. Lampad - Dela Pena is a Master of Science in Marine Science graduate of the Marine Science Institute, University of the Philippines - Diliman, Quezon City. She is currently the Director of Department of Environment and Natural Resources - Siargao Islands Ecotourism Coordinating Office (DENR - SIECO), a premier Ecotourism Office in Siargao Island, Philippines. She has been a resource person / speakers of relevant topics on Physical, Chemical and Biological Oceanography; Climate Change Adaptation and Mitigation; Ridge - to - Reef Environmental Conservation; and Community-Based Integrated Coastal Resources Management.