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Assessing Fish Biodiversity and Ecological Health through its Physico-Chemical Parameters in Iligan Bay, Mindanao, Philippines

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Abstract: Fish biodiversity and ecological health in Iligan Bay, Northern Mindanao, were assessed through analysis of species composition, catch abundance, and catch per unit effort (CPUE). Monthly landing surveys conducted from April to August 2025 at Linamon, Calangahan, and Manticao recorded twelve fish species from seven families, including Scombridae, Clupeidae, Engraulidae, Balistidae, Belonidae, Mugilidae, and Carangidae. Results revealed Bali sardine (Sardinella lemuru) as the most abundant species (40.70%), followed by anchovy (Encrasicholina oligobranchus, 13.43%) and bigeye scad (Selar crumenophthalmus, 11.33%). The dominance of these small pelagic fishes indicates a shift in catch composition from historically larger, high-trophic-level species to smaller, fast-growing species, reflecting national patterns of overfishing and ecosystem decline. CPUE values showed spatial variation: Sigpaw and Gillnets yielded the highest catches in Calangahan, while Castnets were more productive in Linamon and Punta Silum. These outcomes highlight the influence of gear selectivity, habitat conditions, and localized fishing pressure. The heavy reliance on small pelagic resources underscores the vulnerability of small-scale fishers to declining stocks and competition with commercial fleets. The findings provide an important baseline for sustainable fisheries management in Iligan Bay, emphasizing the need for effective monitoring, gear regulation, and habitat conservation to secure biodiversity and the livelihoods of fishers.

Key Words: ligan Bay, fish composition, catch per unit effort, small pelagic fisheries

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