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**SPATIO-TEMPORAL VARIATION IN SEA TURTLE BYCATCH IN SELECTED
MUNICIPALITIES OF TAWI-TAWI: IMPLICATIONS TO ECOLOGY & CONSERVATION**

By

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ABSTRACT

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Bycatch is one of the leading threats to the dwindling population of sea turtles. Tawi-Tawi specifically the municipality of Turtle Islands is considered to be one of the extensive nesting sites and feeding grounds of sea turtles, specifically green and hawksbill in the Philippines as well as in Southeast Asia. Moreover, fishing is the most important activity and source of income of the people in Tawi-Tawi. As human populations have expanded, fishing pressure in coastal areas has intensified and coastal fisheries increasingly play a central role in the economies and livelihoods of people around the world. This study would be the first sea turtle bycatch assessment of small-scale fisheries conducted in the Philippines specifically in selected municipalities of Tawi-Tawi. This study aimed to determine the spatio-temporal variation of sea turtle bycatch rates in selected municipalities of Tawi-Tawi namely Sibutu, Bongao and Languyan to shed light to their conservation needs. Specifically, this study aimed to (1) estimate the total number of sea turtle bycatch in 3 selected municipalities of Tawi-Tawi (2) determine bycatch attributes and magnitude in relation to spatio-temporal use of fishing gears, (3) map the sea turtle's bycatch distribution areas in relation to available pertinent including secondary data, (4) assess other sea turtle's threats, and (5) identify potential sea turtles' critical habitats or 'hotspots' in the study sites. Bycatch data were gathered through on board observations, actual enumeration survey from March 2012 to March 2013, by focus group discussions and structured interview surveys. The sea turtle bycatch in these selected municipalities significantly varied in space and time. A total of 378 sea turtles were bycaught in the entire period of the study. Among the study sites, Sibutu

recorded the highest number of bycaught sea turtles (n=335), followed by Bongao (n=41), and Languyan (n=2). The top catching fishing gear that bycatch sea turtles were: the bottom set gillnets for rays (n=251) in Sibutu, drive- in gillnet (n=19) in Bongao and set gillnet for stingrays (n=1) in Languyan. Sea turtle bycatch occurred mainly during the months of March to June, which has been implicated as the breeding and nesting season of green sea turtles in the area coinciding with the peak of the best seagrass cover. Hence, this study concluded that the spatio-temporal variation in sea turtle bycatch in Tawi-Tawi was predominantly gear related coupled with habitat availability, extent and complexity. This study showed that Sibutu is an area of concern (=‘hotspot’) for sea turtle bycatch. Moreover, most of the bycaught were green sea turtles (n= 368) and predominantly females, particularly in Sibutu (n=280) and mostly were already adults ranging in straight carapace length (SCL) of 80-110 cm (n=197) in 3 sites among top catching fishing gears, which implies a greater impact on sea turtle populations because recruitment maybe eventually impaired. Extrapolating from these results, there could be a potential annual bycaught of 12,526 sea turtles in the three (3) municipalities alone. The other main threat that complicated the situation of the sea turtles in the areas covered was direct takes by poachers in the area. This study recommends bycatch mitigation measures for the identified top catching fishing gears in Sibutu that accounted for the highest sea turtle bycatch – bottom set gillnet for rays (‘pukot pagi’). The results of this study exposed the needs to determine the abundance of the sea turtles in these areas as well as understand their recruitment rates and extent of their distributional range. This study provided evidences necessary for the need to develop conservation cum management plans for sea turtles not just in the study sites covered but also for the entire province of Tawi-Tawi.