Annual summary report to Small Grants in Aid of Research 2018

Wongibe Poupezo Dieudonne

Determinants of African Manatee (*Trichechus senegalensis*, link 1795) bycatch and fishing effort in Lake Ossa Wildlife Reserve: Perspectives for Human Wildlife Conflict Mitigation.

The resources provided by this award supported the completion of the research related to my Masters project. In the beginning the aim of this research was to determine a possible gillnet configuration suitable for fishing in Lake Ossa Wildlife Reserve (LOWR) without entangling the African manatee (*Trichechus senegalensis*), the cause of most fishes destruction on these fishing nets, if there was a site effect and if there was any seasonal variation in any of these in two lakes sites of Lake Ossa. This work was conducted for a period of six months (3 wet seasons and 3 dry seasons). When people and wildlife species share the same natural resources, it may lead to human wildlife-conflict with consequences on human livelihoods and survival of the threatened species. Accidental capture of African manatees by artisanal gillnets in Lake Ossa Wildlife Reserve, Cameroon, is a major conservation issue. This study sought to understand the relationship between gillnet placement method and manatee conflict. We address this gap by investigating on whether (1) there is any association between gillnets spatial deployments method and manatee nets destruction, and (2) there is any seasonal difference on manatee bycatch or net destruction. Five focus-group and 150-interviews with local fishers were conducted in June 2019 to map fishing-manatee conflict areas. We conducted an experiment testing different gillnet placement and their likelihood of being destroyed by a manatee. We deployed nets a) parallel to the manatee feeding shoreline, b) perpendicularly across channels, c) circularly in open water and d) linearly in open water, all (four gillnets) equidistantly separated, with a 12 hour observation time frame for five days/month over six months. Net destruction; was recorded according to the likely species involved. We measured water quality and fish catch

(kg)/net every 12hours. We found an association between gillnet deployment and destruction by manatees. Deploying gillnets linearly appear to be the most desirable technique as it yielded highest fish catch (mass=1.35±0.5kg) and least (14.81%) destroyed by manatee. Comparatively, most destroyed gillnet where those along feeding shoreline and across channels and yielded lowest mean catch of 1.06±0.89kg. Also, deploying nets linearly experienced the least destruction (25%), while configurations along feeding shorelines and parallel to vegetation, recorded the highest mixed destruction (33.39% and 31.25%) respectively. In addition to that it was observed that the principal cause of most fish destruction on gill net were the *Giant shrew*, recording (21.89%) and the *Lutra lutra* registering (61.33%) and other unknown scoring (16.78%). The best fishing period from this study is the dry season compared to the wet season. As a whole, there is a great effect on the fishing site, more that 80% of the fishing output in Lake Mevia were often bad during the time of harvesting, compered of those of the big lake. Diversity was best in the big lake compared to Lake Mevia. We recommend setting gillnets linearly or circularly in open water, as they have little interaction with manatee, navigation boats, and little deployment effort; preventing further manatee entanglement and an immediate intervention in Lake Mevia sector.