

Project Update: September 2008

Little is known about long term trends in fish abundance in the most biodiverse marine ecosystem (coral reef) in one of the most marine biodiverse regions (the Philippines). I analysed finfish family level catch per unit effort (CPUE) data for 1950-2007 from hook-and-line and gillnet based on fishers' knowledge and underwater visual census (UVC) numerical abundance data for 1985-2007 from Pamilacan and Balicasag islands; and CPUE species level landings data for 1983-2005 from Davao Gulf and the Camotes Sea. Linear mixed models with random intercept and generalised least squares showed that in CPUE data large predators (e.g. Epinephelinae, Lutjanidae, Carangidae and Lethrinidae) declined the most while in UVC abundances other common target families (e.g. Acanthuridae, Caesionidae and Scaridae) declined the most.

Declines in UVC data of large predators (e.g. Epinephelinae, Carangidae and Lethrinidae) were not detected, possibly because these groups were depleted prior to the period as shown by mean abundances of $0 < 1$ per 500m² in non-sanctuary areas from 1985 to 2007 at Pamilacan. Non-target families such as Pomacanthidae, Chaetodontidae and Zanclidae declined in abundance. Several grouper species, considered very vulnerable reef apex predators, declined in mean size over the study period based on fishers' knowledge. There was positive correlation between the most reduced in size and either the largest grouper species or the species with the lowest intrinsic rate of increase. At least 18 species no longer caught based on fisher interviews and species disappearances from UVC data (1999-2007) were moderate to very large-bodied and some slow-growing and late-maturing fish, concurring with the Fishbase vulnerability index categories of 'moderate' to 'very high'. At Davao and Camotes almost half of the major target species declined due to fishing pressure. Declines for Pamilacan and Balicasag are attributed to intrinsic vulnerability and fishing pressure in conjunction with habitat degradation. The significance of these findings at local, national and global levels are discussed.