

**Purcell, Geoffrey, “Mean Length and Weight of Mature Fish; Species: *Cynoscion albus*, *Lutjanus guttatus*, and *Centropomus viridis* Caught in the Gulf of Nicoya, Costa Rica.”
Advisors: Michael McCoy and Christopher Vaughan. Luther College. 2010. 22pp.**

The three species *Cynoscion albus* (weak fin whitefish), *Lutjanus guttatus* (spotted rose snapper), and *Centropomus viridis* (common or white snook) (Goodson and Weisgerber 1988) are an important part of their catch in the gulf of Nicoya for small-scale fishermen. The diminishing mass of the catch for all three species is accompanied by difficulty in distinguishing between adults and juveniles for snapper of medium size, which has broader implications to the health of the fishery. I measured 308 Snook and their frequency distribution by length classes did not follow a normal curve, as seen (Fig. 1) ($\chi^2=99$, d.f.=5, $P<0.0001$); 372 snapper and the frequency of distribution did not follow a normal distribution as shown in Fig. 2 ($\chi^2=53$, d.f.=3, $P<0.0001$); and 155 weakfish were and their distribution did not follow the normal curve of the same mean and standard deviation as seen in Fig.3 ($\chi^2=71$, d.f.=8, $P<0.0001$). As seen in the figures the frequency distributions do not fit a normal curve, substantiated by the chi-square and P-values. These distributions are representative of traditional fishing techniques, taking the largest fish out of the population or “fishing down the marine food web” (Pauly et al 1995), which takes only the most fecund adults out of the population diminishing the ability of the fishery to sustain itself and narrowing the spread of trophic levels in the ecosystem (Pauly et al 1995).