

— Daily bioeconomic analysis in a multispecific artisanal fishery in Yucatan, Mexico —



We describe daily allocation patterns of fishing effort (hookah diving) of the artisanal fleet in San Felipe, Yucatan (Mexico), using catch, fishing effort, catch per unit of effort, variable costs, quasi rent and distance from port to four fishing grounds as performance variables. Two vessel categories were defined by the presence/absence of a Long Range Navigation (LORAN) system. Hookah divers caught a daily average of four species in 95% of the trips, thus precluding the quantification of effective fishing effort allocated by species. Highest catches and quasi rent were mainly obtained on Thursdays and Fridays, coinciding with the highest catches of *Octopus maya* and spiny lobster (making up 50% of the total economic revenue) on Fridays in 3 of the 5 weeks analysed. An upper ceiling of daily catch per diver occurred close to the weekend, suggesting a limited capacity in terms of handling time and diving hours, and also a catch level that fulfills daily economic expectations. Both LORAN and non-LORAN vessels preferred to work the nearest ground to port, in spite of higher yield and economic rent from more distant grounds. Nonlinear modelling of fishing effort allocation showed distance from port as the key decision factor. Generalized linear modelling (GLM) revealed significant effects of vessel type and fishing ground, with LORAN vessels having significantly higher catch rates and tending to allocate more effort to distant grounds than vessels without LORAN. GLM performed by species corroborated that Friday was the most productive day concerning spiny lobster and octopus. This day effect in the most valued species also suggests that pressure for higher economic benefits occurs before diminishing (Saturday) or ceasing (Sundays) fishing activities.

Auteurs du document : Jose Luis Cabrera, Omar Defeo

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