Energy fluxes in a mangrove ecosytem from a coastal lagoon in Yucatan Peninsular, Mexico

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Energy fluxes in a mangrove ecosystem were evaluated with Ecopath model through a predator/prey matrix with 19 functional groups including primary producers and three levels of carnivores. Some input data (biomass of the fish groups, zooplankton and benthic communities) were obtained from the field and by stomach content analysis of dominant fish species (32) while others were taken from previous studies. Within fish, nine functional groups were obtained through trophic similarity analysis, being microcrustaceans an important prey in five of them. Results showed that a great proportion of the primary production is exported to adjacent ecosystem while within the system only 4% is grazed and 7% goes to detritus, with a detritivory/herbivory ratio of 2.0. Within the mangrove, detritus plays an important role with 64% of the flows being utilized and transferred to juvenile fish by microcrustaceans. Mixed trophic impacts showed that detritus and low trophic levels had a positive influence on most groups, while a negative one occurred with increasing biomass at high trophic compartments ([`]other fish' and piscivorous). Small EE for fish groups indicated a low predation rate to these groups, while greater P/B and Q/B suggest that mangrove is a high productive system with characteristic properties of a transition between mature and immature stage.

Palabras clave: Ecopath model, Manglove ecosystem, Energy fluxes, Yucatan Peninsula

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