

**Seasonal Programming of Fish Community Structure in
Tropical Contrasting Estuarine Habitats
(Términos Lagoon, México)**

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ABSTRACT

This lagoon-estuarine system has a great environmental heterogeneity with a semi-permanent physical, chemical and biological gradients which permit to delimit five main habitats: 1) seagrass beds; 2) central mesohaline basin; 3) fluvial-deltaic marshes, mangrove swamps, and two inlets connecting the lagoon with the sea; 4) the eastern inlet (Puerto Real),; and 5) the western inlet (El Carmen). In this ecosystem, there are at least 150 fish species. The ecological analysis of the fish community structure for each habitat, shows temporal synchronism with the peaks of diversity and biomass related with the peaks of primary productivity. This programming of the community structure is related to the sequential use of the habitat by the fish species in different stages of their life cycles, following the time scale of dry, rainy and "nortes" climatic periods. The different habitats are coupled by patterns of fish migrations in a manner that leads to great overall regional production. Disruption in these couplings, either naturally or because of human activities, leads to lower biological and fishery productivity and simpler ecosystem structure.