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Spatial variation of demersal fish communities in the platform and channel of Yucatan

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The nature semi-closed of the Gulf of México, together with its oceanographic pattern and freshwater discharges, provide a rich region considering biodiversity. However, the demersal fish community structure is almost not known, even that this great ecosystem has been continuously impacted by oils spills and over exploitations of fishery resources. The present study was developed to evaluate spatial variation of the demersal fish community, considering depth gradient in the platform and channel of Yucatan in southern Gulf of Mexico. Fish sampling was realized in 18 stations with an oceanographic ship using a shrimp trawl at 99 m as average depth. A total of 130 species were recorded, where *Serranidae* family was the most diverse (10 species), following in importance *Paralichthyidae* (eight species), *Sparidae* and *Triglidae* with seven species each. The most representative specie considering density was *Syacium papillosum* (12.4% del total). The highest density and biomass were recorded in the Channel of Yucatan due to the abundance of *Sphoeroides spengleri* and *Syacium papillosum*. Considering fish composition and abundance, three groups of stations were associated. Fish abundance relationship to three ranges of depth was not significant. However, in the superior stratum (<50 m), the highest species richness (103) was obtained; while at 100 m, the diversity (3.35 bits) was recorded. By contrast, at the highest depth (>200 m), the lowest species richness (41) and diversity (2.9 bits) were found. These results are the first ones conducted in the region, contributing to the management of the large ecosystem of the Gulf of Mexico in order to stop further decline in biodiversity. This information is also a line base to evaluate the changes in demersal fish community originated by oil spills and other stressors related with climate change.

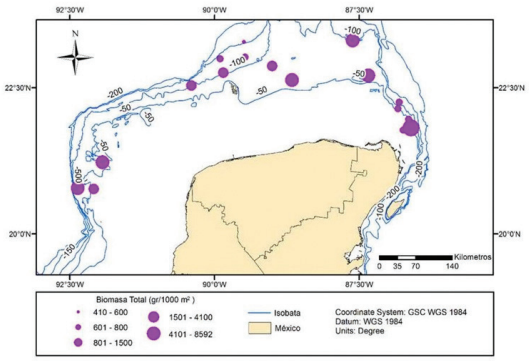

Figure 1. Average biomass (g/1000m^2) of the fish species recorded in the sampling sites in the Platform and Channel of Yucatan during the oceanographic campaign GOMEX-04.

Biography

Maria Eugenia Vega-Cendejas has been working on taxonomy and ecology of fish communities, contributing to biodiversity knowledge in protected areas and coastal -marine ecosystems. She has used the fish resources on impacted ecosystem as bio-indicators of the environmental quality, and studied trophodynamics and energy fluxes in coastal ecosystems considering fish association (structure) and the use of the ecosystem (function).

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