Skipjack tuna in relation to sea surface temperature and chlorophyll-a concentration of bone bay using remotely sensed satellite data

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Abstrak

Skipjack tuna is an important species targeting by pole and line fishery in Bone Bay. The distribution and abundance of this species tended to aggregate to the preferred bio-physical environments. To describe the short term relationship between skipjack tuna and oceanographic conditions and to visualize the predicted high catch areas, remotely sensed satellite based-oceanographic sea surface temperature (SST) and chlorophyll-a together fisheries data were used. Results indicated that the highest skipjack CPUEs were mainly found in coastal areas of Palopo and Kolaka both in 2007 and in 2009 during the period of study. The high tuna concentrations corresponded well with chlorophyll-a of 0.15-0.40 mg mg-3 and SST of 29.0-31.5 °C. The preferred ranges provide a good indicator for initially detecting potential skipjack fishing grounds. This study suggested that thermal and chlorophyll fronts as well as upwelling may important mechanisms in explaining the temporal and spatial dynamics of skipjack tuna distribution and abundance in Bone Bay.