

Atlantic Sailfish (*Istiophorus albicans*) Distribution off the East Coast of Florida from 2003 to 2018 in Response to Sea Surface Temperature

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Abstract : The Atlantic sailfish (*Istiophorus albicans*) ranges from 40°N to 40°S in the Western Atlantic Ocean and has great economic and recreational value for sport fishers. Off the eastern coast of Florida, charter boats often target this species. Stuart, Florida, bills itself as the sailfish capital of the world. Sailfish tag data from The Billfish Foundation and NOAA was used to determine the relationship between sea surface temperature (SST) and the distribution of Atlantic sailfish caught and released over a fifteen-year period (2003 to 2018). Tagging information was collected from local sports fishermen in Florida. Using the time and location of each landed sailfish, a satellite-derived SST value was obtained for each point. The purpose of this study was to determine if sea surface warming was associated with changes in sailfish distribution. On average, sailfish were caught at $26.16 \pm 1.70^{\circ}\text{C}$ ($\bar{x} \pm \text{s.d.}$) over the fifteen-year period. The most sailfish catches occurred at temperatures ranging from 25.2°C to 25.5°C. Over the fifteen-year period, sailfish catches decreased at lower temperatures (~23°C and ~24°C) and at 31°C. At ~25°C and ~30°C there was no change in catch numbers of sailfish. From 26°C to 29°C, there was an increase in the number of sailfish. Based on these results, increasing ocean temperatures will have an impact on the distribution and habitat utilization of sailfish. Warming sea surface temperatures create a need for more policy and regulation to protect the Atlantic sailfish and related highly migratory billfish species.

Keywords : atlantic sailfish, Billfish, *istiophorus albicans*, sea surface temperature

Conference Title : ICOMM 2020 : International Conference on Oceanography and Marine Management

Conference Location : Miami, United States

Conference Dates : March 12-13, 2020