Thursday, October 11
Poster Session 4
10:30–12:00

**Poster 140**

## HABITAT SUITABILITY INDEX MODEL FOR CHUB MACKEREL (SCOMBER JAPONICUS) IN THE SOUTHERN SEA OF SOUTH KOREA USING GEOSTATIONARY OCEAN COLOR IMAGER (GOCI) AND VISIBLE INFRARED IMAGING RADIOMETER SUITE (VIIRS)

The decline of fishery landings driven by the climate change in South Korea has been a big concern over the last several decades. The climate-induced warming in Korean waters has led to not only a decrease of fishery landings but also a change of habitat location of many marine fishes. For instance, the landed amount of commercial fish had decreased for about a million ton during the last decade. Moreover, the populations of warm-water fish species are growing while the cold-water fish species are being reduced by the increased SST in Korea. Accordingly, monitoring the distribution of the fishery resources is becoming increasingly important. Habitat suitability index (HSI) model has been widely used to locate fishing spots with satellite dataset. In this study, we used the commercial catch data of the chub mackerel (Scomber japonicus) and environmental factors derived by Geostationary Ocean Color Imager (GOCI) and Visible Infrared Imaging Radiometer Suite (VIIRS) to calculate the HSI for chub mackerel in the South Sea of South Korea. Optimal environmental conditions for the chub mackerel were found to be SST, chlorophyll-a (chl-a) concentration, and primary production of phytoplankton. Approximately more than 85% of the total catch was found in the areas with the ranges of 0.17-0.39 mg $m^{-3}$ for chl-a, 10.85-23.26°C for SST, and 289.31-641.32 mg C $m^{-2}$ $d^{-1}$ for primary production. We expect that the high spatio-temporal resolution data from GOCI will provide us a diurnal variation of the chub mackerel's habitats in the South Sea of South Korea.

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