

Improvement of the physical-biogeochemical-fish coupled model for the western North Pacific

*Takaaki Yokoi¹, Shin-ichi Ito¹, Yoshimasa Matsumura¹, Raphael Dussin², Enrique Curchitser²

1. Atmosphere and Ocean Research Institute University of Tokyo, 2. Department of Environmental Sciences Rutgers University

Generally, the western North Pacific is well known that it has the large volume of fish catches. Japanese food culture, that highly depends on seafood, is supported by the marine capture fishery in such region. However, it has been known that the amount of catch of many fish species in Japan showed multidecadal fluctuations, whose mechanism has been unclear. The authors are focusing on Jack mackerel, chub mackerel, and Pacific cod. To simulate transport and migration processes of those species, we have applied the Regional Ocean Modeling System (ROMS) coupled with North Pacific Ecosystem Model for Understanding Regional Oceanography For Including Saury and Herring (NEMURO.FISH) in the western North Pacific (hereafter: the model is referred as the ROMS-NEMURO.FISH). This model was driven by the two atmospheric forcings in order to compare with each other: one was Common Ocean Reference Experiment version 2 (COREv2), and the other is Japanese 55-years Reanalysis (JRA-55). Also, Simple Ocean Data Assimilation (SODA) was used as the initial and boundary conditions.

Keywords: ROMS-NEMURO.FISH, chub mackerel