

Thoughts on an illustrative map of Average Fishing Status

Introduction

Every year, when the red dragonflies (Akiakane in Japanese) begin to fly, I think of Akibin (autumn albacore). Akibin sounds like an established word, but I do not hear this word very often these days and it may not resonate with many people. Akibin is the albacore version of Kudari-katsuo (skipjack moving southward) and is a relatively inexpensive albacore caught by pole and line fishing with plenty of fat. The catch was quite large and Akibin was very popular among consumers. However, these days, Akibin is no longer as common in markets and supermarkets as it used to. It is unfortunate that there is no information on whether the fishing grounds have changed, or whether the fish are still there but the fishing pattern has changed and fishermen no longer go there to catch them. Changes in fishing grounds and fishing seasons over time are a reflection of various factors that cause them. These days, descriptive research like this seems to be undervalued, but I believe that creating fishing maps with appropriate explanations and analysis is a fine research field that should be continued.

The thick illustrations of “Average Fishing Status Map” of Japan’s tuna longline fishery, which entered the world soon after the Second World War, come with detailed explanations in a separate volume, giving us a sense of the enthusiasm of the researchers at the time who were undertaking this unprecedented endeavor. You can also learn what kind of knowledge and ideas they had regarding tuna resources. These works, which provide insight into the historical changes in fisheries leading up to the present day, may provide many hints for future research. Therefore, I would like to introduce “Average Fishing Status Map” and works that followed it, as well as the characteristics and problems associated with them, and express my expectations for future work.

Changes in Average Fishing Status Map

Average Fishing Status Map for tuna and billfish was published twice by the former Nankai Regional Fisheries Research Laboratory shortly after the Second World War (1952 edition and 1958 edition). The year 1952 is a memorable year when the US restriction on Japanese tuna fishing operation to the waters near Japan was abolished, and the industry began to expand dramatically, aiming to reach the world’s three oceans.

At that time, catch statistics for Japan's tuna longline fishery had not yet been systematically collected and compiled, so researchers took the lead in actively gathering information at Japan's major fishing ports where tuna longliners landed their products. The explanatory version records the history of the fishery and the length and weight composition of the catch, as well as provides detailed explanations of the spread of fishing grounds and seasonal changes as indicated by CPUE (catch per unit of effort).

After that, no similar Average Fishing Status Maps were created for a long time, but in 1997, the former National Research Institute of Far Seas Fisheries published "Average Fishing Status Map for tuna and billfish caught by longliners 1967-1992" (Uosaki et al., 1997, p.222). However, this detailed work was only used by researchers and was not made public. The reason is a bit long, but I will quote part of the preface to this publication as follows: We came up with the idea to create this Average Fishing Status Maps because, after the two similar maps, no similar one has been created even though the fishery has changed completely. One of the major reasons why this type of map has not been published is that due to fishing regulations and other factors it has become difficult to disclose such information to outside parties. This can be understood by considering that "Tuna Longline Fisheries Statistics Survey Report by Fishing Ground" was no longer published after 1983. This problem has yet to be resolved. Readers should be fully aware that this map was created for domestic researchers."

This new Average Fishing Status Map divides the entire period into: (1) 1967-1975 (the heyday of the Japanese tuna longline fishery; (2) 1976-1985 (the period when the 200 nautical mile system was almost established; and (3) 1986-1992 (the early stage of the introduction of effective management measures for tuna fisheries). It shows the average fishing status during these periods in terms of the fishing rate and number of hooks used by species, by 1 degree latitude and 1 degree longitude, and by month. It also shows the area of fishing operation during the heyday of the Japanese tuna longline fishery. I believe that no other fishery than Japan's tuna longline fishery has ever covered this vast sea area (Figure below). By comparing these three Average Fishing Status Maps, it is possible to clearly understand the shift from fishing for tropical tunas at the initial stage to fishing for temperate tunas due to the development of freezing technology, as well as changes in fishing grounds due to tightening of regulations. Looking at bluefin tuna in the Atlantic Ocean, we see fishing in the Gulf of Mexico, the Mediterranean Sea, and the Bay of Biscay, where there is no fishing today, and conversely, the current main fishing ground off the coast of Ireland did not exist in this era. .

1967-75 AVERAGE OF 12 MONTHS FISHING EFFORT

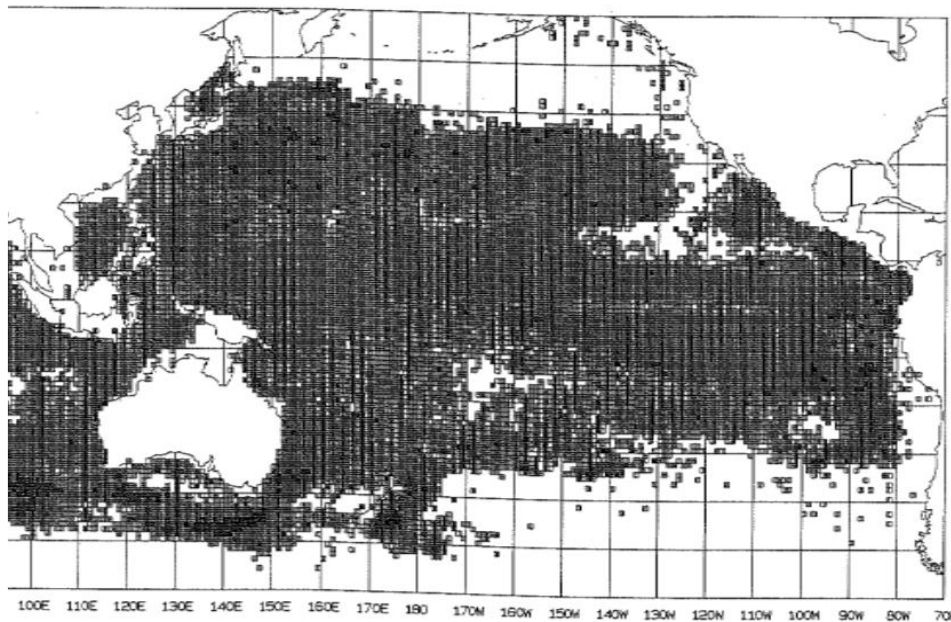
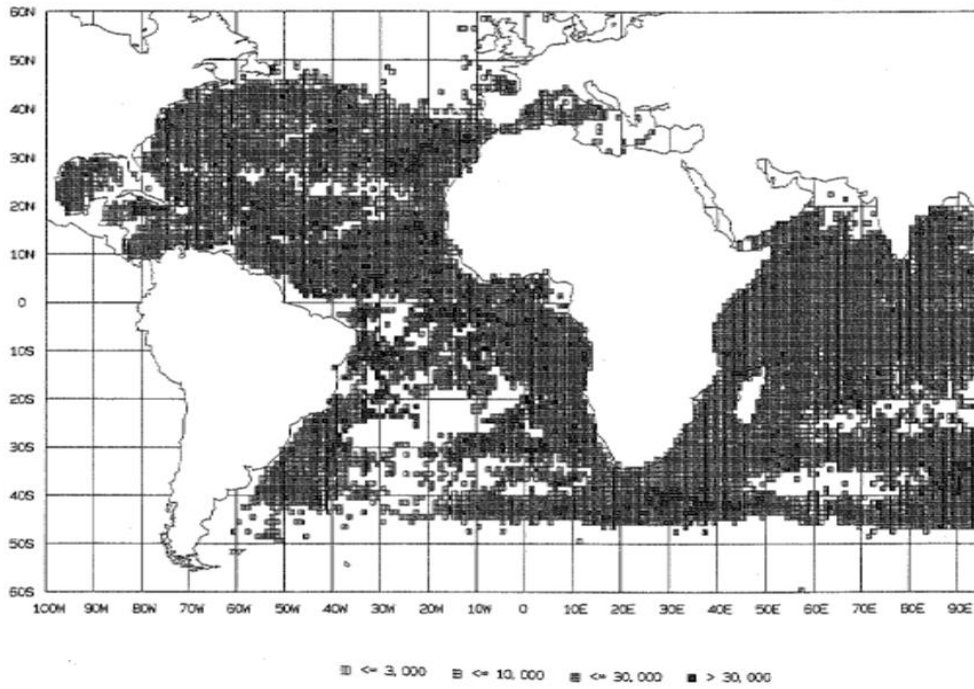


Figure: Distribution of number of hooks used in 1967-1975 (the heyday of Japan's tuna longline fishery) (Uosaki et al, 1997, quote from unpublished document)

Future work

So far, three sets of Average Fishing Status Map have been created with the nearly 20-year period between the last one produced by the former Nankai Regional Fisheries Research Laboratory and the one produced by the former National Research Institute of Far Seas Fisheries. More than 20 years have also passed since the last one. The filing of detailed catch reports for the tuna longline fishery has been completed, and it is hoped that a new version of Average Fishing Status Map will be created to fill in the gaps. Since this file contains valuable data from the early stages of fishery development that was not included in the one created by the former Nankai Fisheries Research Institute, it is hoped that Average Fishing Status Map that includes this period will be created again. Furthermore, since detailed data on Japan's tuna longline fishery is now publicly available, the one created by the former National Institute of Far Seas Fisheries can be published. If it is published in some form, it could be useful in many fields. Although it is a time-consuming task, if these remaining issues are resolved, the entire history of the fishery will be covered seamlessly, and it may become a legacy for future generations.