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Major changes in data available for the 2014 tropical tuna assessments

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Peter Williams[1]

[1] Oceanic Fisheries Programme (OFP), Secretariat of the Pacific Community (SPC), Noumea, New Caledonia.
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1. INTRODUCTION

This paper provides background information on the major changes to the data available for stock assessments since the last tropical tuna assessments. It does not attempt to describe **all** changes to the data, rather it describes where substantial changes occurred, primarily as a result of improved estimates and/or the availability of new information where data had been lacking in the past. SC10 Working Paper ST WP-1 (Williams, 2014) describes the current gaps in scientific data provisions to the WCPFC. This paper will describe, in more detail, the progress made in the past year in addressing the most important gaps relevant to the data available for stock assessments.

This paper concentrates on the work done in improving the aggregate catch/effort data for the Japanese Small-vessel longline and Vietnamese domestic tuna fisheries. For future SC meetings, this paper will cover other major changes in data available for stock assessments, as they occur.

2. JAPANESE SMALL-VESSEL LONGLINE FISHERIES DATA

Aggregated data for the Japanese Small-vessel Longline fleet were provided to the WCPFC for the first time in July 2013 covering years 1994-2012 (2013 aggregated data were provided in April 2014).

Prior to the first submission of aggregated data for this fleet by Japan, the regional stock assessments relied on aggregate data which were produced from annual catch estimates, disaggregated by time (year/month) and area (5°x5° cells) according to our broad understanding of activities of this fleet. Catch in number in the aggregate data were determined by applying the average weights by species obtained from size data for the Japanese offshore/distant-water fleets by time and broad area. While these 'generated' aggregate data may not have represented the actual spatial and temporal (e.g. seasonal) patterns of activity for this fleet, it nonetheless ensured that this fishery were included in the previous stock assessment models, which was better than not having them accounted for at all. Figure 1 (LEFT) shows the distribution of bigeye catch from the previous version of "generated" aggregate data for the Japanese Small-vessel longline fleet.

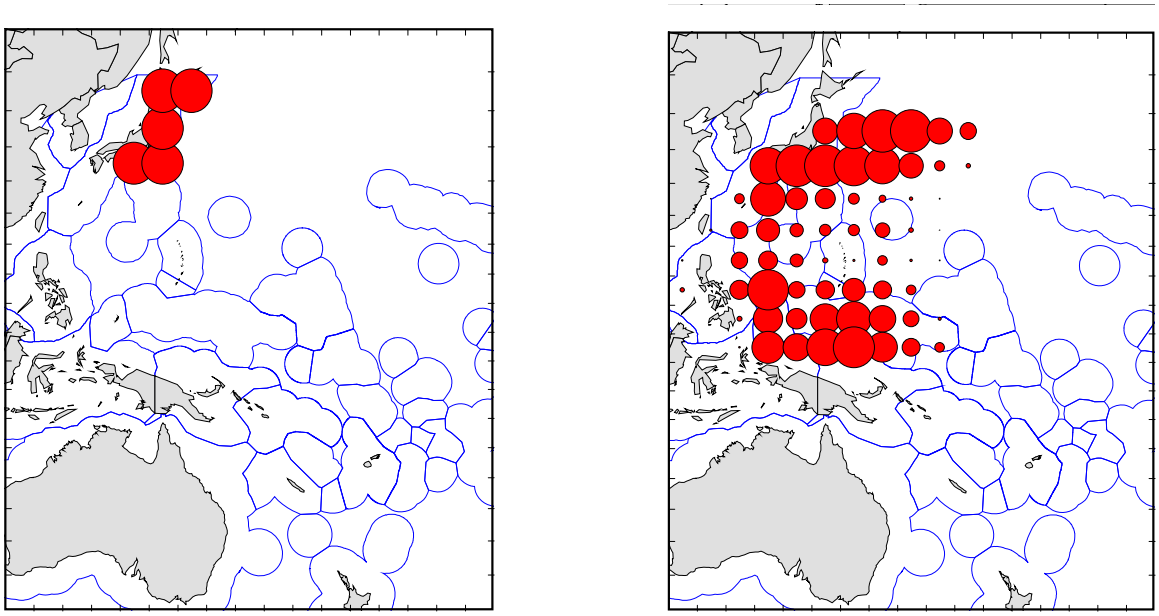

Figure 1. The distribution of bigeye tuna catch for the Japanese Small-vessel Longline fleet, based on

(i) Aggregate data "generated" from Annual catch estimates (LEFT), and

(ii) Aggregate data provided by Japan from logbook data (RIGHT).

The provision of the aggregate data for the Japanese Small-vessel fleet over the past year has now replaced the previous "generated" aggregate data, although the time series for the new data only starts in 1994. Figure 1 (RIGHT) shows the distribution of bigeye tuna catch for the same period as Figure 1 (LEFT), but based on the data provided by Japan which has been sourced from Logbooks. The new data show that the spatial extent of the Japanese Small-vessel Longline fleet is beyond the waters adjacent to Japan and extends down to Micronesia. For the period 1994 onwards, the new aggregated data simply replaced the old "generated" data. However, there remained the issue of how the "generated" aggregated data for years prior to 1994 should be adjusted to reflect the best spatial representation possible for activities for this fleet. This was resolved through information and advice provided by Japan suggesting that the average distribution (seasonality and area) of catch by species for the period 1994-2012 be applied to the annual tuna species catch estimates for each year prior to 1993 to produce a revised "generated" aggregate data set for years 1952-1993. Figures 2 and 3 show the results of this process and the new "generated" data were included in the WCPFC databases.

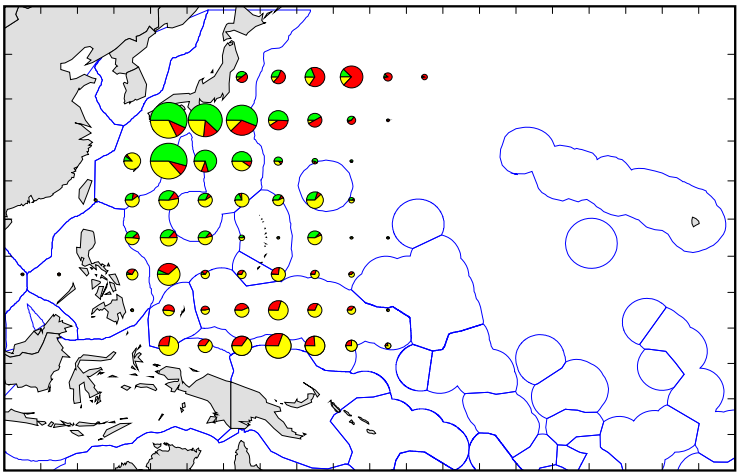

Figure 2. Distribution of Japan small-vessel LONGLINE catch by species – 1952-1993
ALBACORE TUNA–Green; BIGEYE TUNA–Red; YELLOWFIN TUNA–Yellow

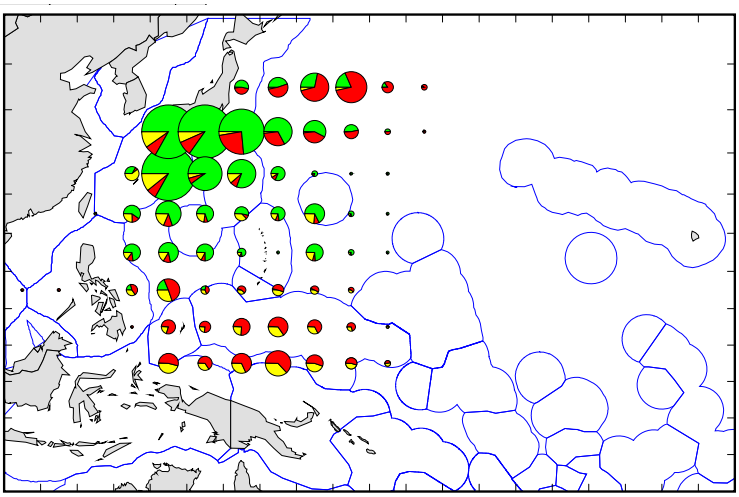

Figure 3, Distribution of Japan small-vessel LONGLINE catch by species – 1994-2012
ALBACORE TUNA–Green; BIGEYE TUNA–Red; YELLOWFIN TUNA–Yellow

2. VIETNAM TUNA FISHERIES DATA

In recent years, a succession of annual catch estimates workshops (Anon (2012), Anon (2013), Anon 2014) have been held to establish a historical time series of Vietnam tuna fisheries annual catch estimates, which did not exist prior to 2012. Since 2010, UNDP/GEF-funded West Pacific East Asia Oceanic Fisheries Management (WPEA[2]) has been instrumental in assisting Vietnam establish data collection systems to monitor their domestic fisheries covering logbooks, landings and port sampling. With the existence of a historical time series of annual catch estimates by gear and species, we have proceeded to produce a "generated" dataset by disaggregating the annual catch estimates by time/area information obtained from logbooks. The "generated" aggregate data have been included in the WCFPC aggregate databases and made available for the regional stock assessments.

Figure 4 shows an example of available logbook data and Figure 5 shows an example of the "generated" aggregate data now available in the WCPFC databases. As logbook coverage improves, the aggregate data will be generated directly from logbook data in the future.

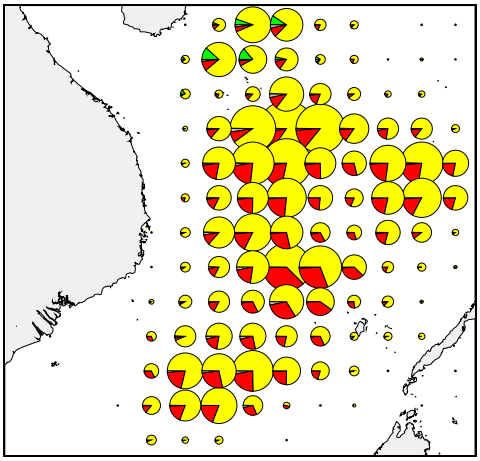

Figure 4. Example of distribution of Tuna species catches in the Vietnam longline fishery, according to available logbook data.

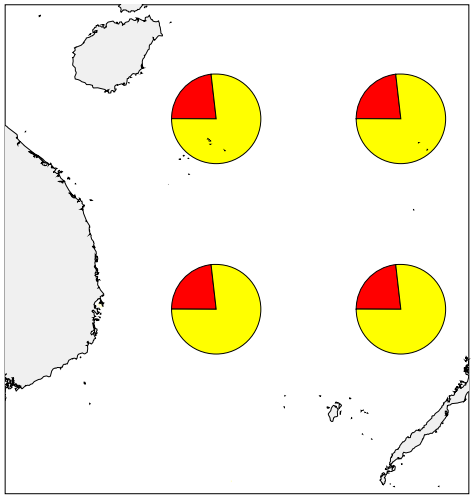

Figure 5. Example of distribution of Tuna species catches in the Vietnam longline fishery in the 5°x5°/month aggregate data.

[2] Refer to http://www.wcpfc.int/doc/2009/wpea-ofm-project-document; significant co-financing is included with this project in supporting the work in Indonesia, Philippines and Vietnam

References

Williams, P.G. 2014. Scientific data available to the Western and Central Pacific Fisheries Commission. Working Paper SC10 ST WP–1. Tenth Regular Session of the WCPFC Scientific Committee (SC7), 6–15 August 2014, Majuro,, Republic of the Marshall Islands. Oceanic Fisheries Programme, Secretariat of the Pacific Community, Noumea, New Caledonia.

Anonymous. 2012. Report of the first Vietnam Tuna Fisheries Annual Catch Estimates (VTFACE-1) Workshop, 2–6 April 2012, Da Nang, Vietnam. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia. http://www.wcpfc.int/west-pacific-east-asia-oceanic-fisheries-management-project

Anonymous. 2013. Report of the Second Vietnam Tuna Fisheries Annual Catch Estimates (VTFACE-2) Workshop, 1–5 April 2013, Nha Trang, Vietnam. Western and Central Pacific Fisheries Commission. http://www.wcpfc.int/west-pacific-east-asia-oceanic-fisheries-management-project

Anonymous. 2014. Report of the Third Vietnam Tuna Fisheries Annual Catch Estimates (VTFACE-3) Workshop, 19-21 June 2014, Da Nang, Vietnam. Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia. http://www.wcpfc.int/west-pacific-east-asia-oceanic-fisheries-management-project