TRAFFIC
REPORT

The Southern Bluefin Tuna market in China

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Front cover photograph: Southern Bluefin Tuna *Thunnus maccoyii* circling in holding pen, Port Lincoln, South Australia.
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Southern Bluefin Tuna *Thunnus maccoyii* circling in holding pen, Port Lincoln, South Australia.

This study was conducted with the kind support of

TABLE OF CONTENTS

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ABBREVIATIONS AND ACRONYMS

ABT	Atlantic Bluefin Tuna, *Thunnus thynnus*
BET	Bigeye Tuna, *Thunnus obesus*
BFT	Bluefin Tuna, a general term for Atlantic and Pacific Bluefin Tuna
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CDS	Catch Documentation Scheme
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CNM	Cooperating Non-Members of CCSBT
CNY	Chinese Yuan
CSD	Census and Statistics Department, which keeps import and export data for Hong Kong SAR
CSIRO	Commonwealth Scientific and Industrial Research Organisation
FAO	Food and Agriculture Organization of the United Nations
HKD	Hong Kong Dollar
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
IOTC	Indian Ocean Tuna Commission
ISC	International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean

IUCN	International Union for the Conservation of Nature
IUU	Illegal, Unregulated and Unreported fisheries
Korea	Republic of Korea
NCNM	Non-Cooperating Non-Members of CCSBT
PBT	Pacific Bluefin Tuna, *Thunnus orientalis*
RFMOs	Regional Fisheries Management Organizations
Sashimi tuna	Bigeye Tuna, Atlantic Bluefin Tuna, Pacific Bluefin Tuna, Southern Bluefin Tuna, and Yellowfin Tuna
SBT	Southern Bluefin Tuna, *Thunnus maccoyii*
TAC	Total Allowable Catch
TRAFFIC	The wildlife trade monitoring network
UN Comtrade	United Nations Commodity Trade Statistics Database
USD	United States Dollar
WCPFC	Western and Central Pacific Fisheries Commission
YFT	Yellowfin Tuna, *Thunnus albacares*

EXECUTIVE SUMMARY

The Southern Bluefin Tuna (SBT) is a high-value tuna species which is distributed between latitudes 30–50 S. The SBT fishery is managed by the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) which sets an agreed annual total allowable catch (TAC) with Members and Cooperating Non-Members (CNM) receiving a national allocation. Mainland China is neither a Member or CNM of CCSBT. If any SBT within the Chinese market is derived from China-flagged vessels, it would identify China as a SBT Market State and potentially as a Flag State too.

Based on recorded catch and trade data from Regional Fisheries Management Organizations (RFMOs) kept by the General Administration of Customs of the People's Republic of China, mainland China retained more than 108 t of SBT in 2014, accounting for 0.61% of all tuna sashimi (Yellowfin Tuna (YFT), Bigeye Tuna (BET), Atlantic Bluefin Tuna (ABT), Pacific Bluefin Tuna (PBT) and Southern Bluefin Tuna (SBT)) retained in mainland China.

Sashimi is not a traditional component of the Chinese diet, but a newly introduced fashion. The researchers found that tuna sashimi was mainly offered for sale in Japanese-style restaurants, e-commerce platforms, as well as some high-end supermarkets and high-end Chinese restaurants. According to dianping.com[1], there are around 7,380 Japanese-style restaurants in Shanghai (3,569), Beijing (1,770) and Guangzhou[1] (2,042) and these cities can be considered the main markets for tuna sashimi in mainland China.

Two hundred tuna sashimi samples were collected from Japanese-style restaurants in Beijing and Shanghai in early 2016, to gain an insight into the tuna species composition in the market. Restaurants were selected based on stratified random sampling. DNA tests conducted by CSIRO (Davies *et al*., 2016) found that 26 out of 199 tested tuna sashimi samples were SBT (13%). This is considerably less than found by similar research undertaken in 2011–2012 (26% out of the total sample size, or 30% out of 88 *Thunnus* samples) (Anon., 2012). Of the 26 SBT samples identified, 25 were obtained in Shanghai and only one was from Beijing. Fifteen out of the 26 SBT samples were from the mid-price category (CNY 201-400[2]), only two SBT samples were from the high-price restaurant category (>CNY400). However, there may well be significant variation in the tuna species composition between cities, restaurant price categories and different times of the year, so caution should be applied before extrapolating these findings to the wider Chinese market, especially given the small sample size. Nevertheless, the results provide a starting point to gain an insight into the species of tuna available in the sashimi market in mainland China.

However, it is also unclear to what extent all retained fresh and frozen tuna is used for sashimi. YFT, for example, may be used in the manufacture of canned tuna. This and other factors may help to explain discrepancies between the composition of tuna species found by market sampling and the composition reported in retained tuna.

Further research is needed in order to produce more accurate estimates of overall SBT consumption in mainland China. No restaurant samples were obtained from Guangzhou, for example, which may prove to be a significant centre for SBT consumption, while at least two major business to consumer (B2C) e-commerce websites based in mainland China were offering both BFT and SBT for sale.

[1] dianping.com is an online restaurant search and recommendation platform in mainland China.
[2] 1 CNY = 0.15287 USD. The average monthly exchange rate from January to March 2016 between Chinese Yuan (CNY) and US dollars (USD) was obtained from an exchange rate website. https://www.oanda.com/currency/average

RECOMMENDATIONS

- Encourage all CCSBT Members and CNMs to report their annual SBT catch to FAO to keep accurate and up to date information in the database.
- Encourage Australia and New Zealand to check with UN Comtrade on their trade data records for better consistency.
- Encourage countries/territories to change their Customs HS CODES as soon as possible to follow World Customs Organization (WCO) recommendations for better comparison between importers and exporters.
- Encourage countries/territories to make Customs trade data publically accessible (e.g. online) or, at least to provide data upon request, without charge.
- Encourage Japan to confirm all sashimi tuna trade volumes with mainland China and Hong Kong SAR to eliminate any possible illegal trade.
- Encourage Japan to record all values of import and export, including those equal or under JPY 200,000 in value, and report all recorded trade to UN Comtrade for a better estimation of global trade.
- There are likely to be other places in mainland China with high sashimi tuna consumption, e.g. Guangzhou. Therefore, more sampling in these centres for DNA testing is necessary to understand better sashimi tuna species composition across mainland China.

BACKGROUND AND INTRODUCTION

The Southern Bluefin Tuna (SBT) is a high-value tuna species which is distributed between latitudes 30–50 S. The SBT fishery is managed by the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) which sets an agreed annual total allowable catch (TAC) with Members and Cooperating Non-Members (CNM) receiving a national allocation. However, in order to estimate the trade and global catch of SBT better, and to assist in the detection of potential Illegal, Unregulated and Unreported (IUU) trade in SBT, the CCSBT also monitors the trade with countries that are "Non-Cooperating Non-Members" (NCNM).

China is a member of four of the five tuna Regional Fisheries Management Organizations (RFMOs)[3] (Western Central Pacific Fisheries Commission (WCPFC), Indian Ocean Tuna Commission (IOTC), International Commission for the Conservation of Atlantic Tunas (ICCAT) and Inter-American Tropical Tuna Commission (IATTC)). China is not a member or cooperating non-member of CCSBT, although SBT appears to be traded within the domestic market and (re)exported. If any SBT within the Chinese market was derived from China-flagged vessels, it would identify China as a SBT Market State and potentially as a Flag State too.

SBT is a very high value fisheries product traditionally and exclusively consumed as sashimi rather than other types of tuna products. DNA tests of sashimi-grade tuna samples obtained by WWF from restaurants and supermarkets in Shanghai and Beijing in 2011–2012 identified 26 out of 100 samples as SBT (Anon., 2012). The degree to which SBT appeared to be present in the Chinese market did not seem to tally with what would be expected based on the import quantities reported in Chinese Customs statistics: 10.3 t in 2011 and 3.8 t in 2012[4].

Chinese Customs data showed that mainland China imported relatively small quantities of frozen SBT in 2011 (9,864 kg) and 2012 (1,674 kg), with imports jumping to 34,290 kg in 2013, 102,936 kg in 2014 and 111,914 kg in 2015, a total of approximately 261 t of frozen SBT over the five years. However, Customs data from China show reported (re)exports of around 50.6 t of frozen SBT between 2011 and 2013, more than the total imported frozen SBT (34.3 t) in the same period. These data indicate that some SBT might either have been traded to mainland China through undocumented channels and thus not recorded by the General Administration of Customs of the People's Republic of China, or may have been landed by China-flagged vessels and again were not documented.

To gain a better understanding of the presence and potential sources of SBT traded and/or consumed in mainland China, desk-based research and a market survey "snapshot" were carried out. Market research focused in particular on increasing the understanding of the availability of SBT in Japanese-style restaurants offering sashimi tuna in Beijing and Shanghai. In total, 200 sashimi-grade tuna samples from restaurants in these cities were collected for the purposes of DNA testing to confirm the species of tuna. This sampling and identification technique demonstrated it to be a useful method for undertaking a wider analysis of SBT markets in Shanghai and Beijing.

[3] RFMOs are international organizations focused on the management of fisheries resources in particular areas of international waters. RFMOs may focus on particular highly-migratory species, such as tuna, throughout vast geographical areas.
[4] Based on Chinese Customs statistics, mainland China imported frozen SBT only from Japan in 2011 and only from Australia in 2012 and 2013.

METHODOLOGY

Mainland China sashimi tuna trade

For the estimation of Southern Bluefin Tuna presence in mainland China, the catch of Bigeye Tuna (BET), Bluefin Tuna (BFT), Yellowfin Tuna (YFT) and SBT for mainland China, between 2011 and 2014, were obtained from six different RFMOs[5] (Table 1).

Table 1. Catch data recorded by different RFMOs

RFMOs	Stocks of tuna
CCSBT https://www.ccsbt.org/en/content/sbt-data	Southern Bluefin
IATTC http://www.iattc.org/CatchReportsDataENG.htm	Pacific Bigeye Eastern Pacific Yellowfin
ICCAT http://www.iccat.es/sbull/SB43-1-2016/index.html	Atlantic Bigeye Eastern Atlantic Bluefin Western Atlantic Bluefin Atlantic Yellowfin
IOTC http://www.iotc.org/documents/nominal-catch-species-and-gear-vessel-flag-reporting-country	Indian Ocean Bigeye Indian Ocean Yellowfin
ISC http://isc.fra.go.jp/fisheries_statistics/index.html	Pacific Bluefin
WCPFC https://www.wcpfc.int/statistical-bulletins	Pacific Bigeye Western and Central Pacific Bigeye Western and Central Pacific Yellowfin

Information source: Fishery Statistical Collections Global Tuna Catches by Stock, http://www.fao.org/fishery/statistics/tuna-catches/4/en

The trade data for four sashimi tuna—BET, BFT, YFT and SBT—for mainland China, Hong Kong SAR and six CCSBT members (Australia, Indonesia, Japan, Republic of Korea, New Zealand and the Fishing Entity of Taiwan) were obtained to understand if there were data recording gaps and to obtain an estimation of the overall trade.

The trade of fresh and frozen commodities for BET, BFT, YFT and SBT from 2011 to 2015 were obtained from the United Nations Commodity Trade Statistics Database (UN Comtrade), which provided commodity trade records with six-digit HS (Harmonized System) codes. The trade of eight sashimi tuna commodities beginning with 0302 (fresh) and 0303 (frozen) were collected (Table 2). The bluefin tuna trade recorded in UN Comtrade includes both Atlantic Bluefin Tuna and Pacific Bluefin Tuna.

[5] Catch data in 2015 were not available.

Table 2. The trade of fresh and frozen tuna commodities recorded in UN Comtrade.

Commodity Codes	Commodity
030232	Yellowfin Tuna, fresh
030234	Bigeye Tuna, fresh
030235	Bluefin Tuna, fresh
030236	Southern Bluefin Tuna, fresh
030342	Yellowfin Tuna, frozen
030344	Bigeye Tuna, frozen
030345	Bluefin Tuna, frozen
030346	Southern Bluefin Tuna, frozen

Customs trade records for sashimi tuna commodities, under the codes of 0302 and 0303 from mainland China and Hong Kong SAR, as well as five CCSBT members (Australia, Japan, Republic of Korea, New Zealand and the Fishing Entity of Taiwan) between 2011 and 2015 were obtained from relevant authorities (Table 3). For some countries/territories, the trade records for bluefin tuna were separated into Atlantic Bluefin and Pacific Bluefin tuna (Table 4 and Annex 1).

Table 3. Information source for Customs trade data from different countries/territories

Countries/territories	Information source
Mainland China	China Cuslink Company, Ltd
Hong Kong SAR	Hong Kong's Census and Statistics Department (CSD)
Australia	Multilateral and Migratory Stocks Section, Sustainable Agriculture and Fisheries Division, Department of Agriculture and Water Resources
Japan	Ministry of Finance http://www.customs.go.jp/toukei/info/index_e.htm
Republic of Korea	Korea International Trade Association (KITA) http://global.kita.net/
New Zealand	Statistics New Zealand http://www.stats.govt.nz/infoshare/TradeVariables.aspx?DataType=TEX
Fishing Entity of Taiwan	Taiwan's Bureau of Foreign Trade http://cus93.trade.gov.tw/ENGLISH/FSCE/

Note: Customs data for Japan, Republic of Korea, New Zealand and the Fishing Entity of Taiwan are available online.

Table 4. List of Customs codes in mainland China and Hong Kong SAR for sashimi tuna commodities, 2011–2015

Tuna products	Mainland China	Year	Hong Kong SAR	Year
Yellowfin Tuna, fresh	03023200	2011–2015	03023200	2011–2015
Bigeye Tuna, fresh	03023400	2011–2015	03023400	2011–2015
(Atlantic & Pacific) Bluefin Tuna, fresh	03023500	2011–2014	03023500	2011–2012
Atlantic Bluefin Tuna, fresh	03023510	2015	03023510	2013–2015
Pacific Bluefin Tuna, fresh	03023520	2015	03023520	2013–2015
Southern Bluefin Tuna, fresh	03023600	2011–2015	03023600	2011–2015
Yellowfin Tuna, frozen	03034200	2011–2015	03034200	2011–2015
Bigeye Tuna, frozen	03034400	2011–2015	03034400	2011–2015
(Atlantic & Pacific) Bluefin Tuna, frozen	03034500	2011–2014	03034500	2011–2012
Atlantic Bluefin Tuna, frozen	03034510	2015	03034510	2013–2015
Pacific Bluefin Tuna, frozen	03034520	2015	03034520	2013–2015
Southern Bluefin Tuna, frozen	03034600	2011–2015	03034600	2011–2015

Only Hong Kong SAR and New Zealand clearly separated exports from re-exports in their Customs data. Therefore, in this analysis, the term "(re)export" is used to refer to both, the trade involving export and re-export.

Mainland China has 10 eight-digit Customs codes starting with 0302 and 0303 to record fresh and frozen sashimi tuna trade, respectively. Mainland China has two Customs codes for live Atlantic (03019491) as well as Pacific (03019492) Bluefin Tuna. The live tuna trade was not included in this study as live fish might be traded for research and/or as breeding stock, and would not enter the market. Mainland China only imported 190 kg of live Pacific Bluefin Tuna from Japan in 2015, and did not record any (re)export of live tuna. Mainland China has Customs code 03048700 and 16041400 for consolidated but not species specific tuna commodities. The trade data from these two codes were not included in this research.

Hong Kong SAR also uses eight-digit Customs codes, but the coding system is not always equivalent to mainland China's system. However, for tuna commodities concerning this research, Hong Kong SAR has the same 10-digit Customs codes beginning 0302 and 0303, although the codes for Pacific and Atlantic Bluefin tuna were different for some of the period (Table 4).

The export data for SBT from Japan to mainland China and Hong Kong SAR were also obtained from the Catch Documentation Scheme (CDS) system kept in the Fisheries Agency of Japan to complement Japan Customs data that do not record trade value equal or less than JPY 200,000 (USD 2,123) (Japan Fisheries Authority *in litt.* to TRAFFIC).

FAO sashimi tuna catch and trade data from FishStatJ were available only up to 2011. Thus, the SBT catch and trade data from 2007 to 2011 were obtained to understand the data reporting quality from mainland China, Hong Kong SAR and six CCSBT members.

The trade value in Hong Kong SAR CSD was recorded in HKD and converted to USD for comparison with the value recorded in UN Comtrade. The average annual currency exchange rates from 2011 to 2015 between HKD and the USD were obtained from online sources[6].

Table 5. The average annual currency exchange rate for HKD to USD, 2011—2015

	Annual average rate
2011	0.12845
2012	0.12890
2013	0.12892
2014	0.12895
2015	0.12898

Information source: http://www.oanda.com/currency/historical-rates/

Sashimi tuna sample collection

A restaurant search and recommendation website, 大众点评 (Dai Zhong Dian Ping, dianping.com)[7] in mainland China was searched to gain an insight into the sashimi tuna market in Beijing and Shanghai, as well as for selecting the 200 restaurants for two rounds of sashimi tuna sample collection in January and March 2016 (Table 6). Restaurants were randomly selected and stratified based on the average cost per person per meal (restaurant price) listed on dianping.com. During sample collection, the restaurant location, the stated source of tuna purchased, the purchase price and the claimed tuna species were obtained to provide further information about the SBT and other sashimi tuna in markets in Beijing and Shanghai.

Table 6. Restaurants visited for sashimi tuna collection in Beijing and Shanghai

	Shanghai			Beijing		
Restaurant price* (CNY)	**Restaurants with price indication online**	**Restaurants visited in 1st round (6-11 Jan, 2016)**	**Restaurants visited in 2nd round (1-6 Mar, 2016)**	**Restaurants with price indication online**	**Restaurants visited in 1st round (13-25 Jan, 2016)**	**Restaurants visited in 2nd round (9-16 Mar, 2016)**
≤ 100	1,169	0	8	435	1	4
101 - 200	375	11	25	300	9	29
201 - 300	150	9	10	105	10	14
301 - 400	75	12	4	33	11	1
401 - 500	17	8	0	10	9	2**
> 500	21	10	3	21	10	0
Total	**3,287**	**50**	**50**	**1,738**	**50**	**50**

*Note: * restaurant price category is the average cost per person of restaurants stated on dianping.com*
*** one of the restaurants visited did not show an average consumption price on dianping.com.*

[6] http://www.oanda.com/currency/historical-rates/
[7] Dai Zhon Dian Ping, means public comments on the website http://www.dianping.com/

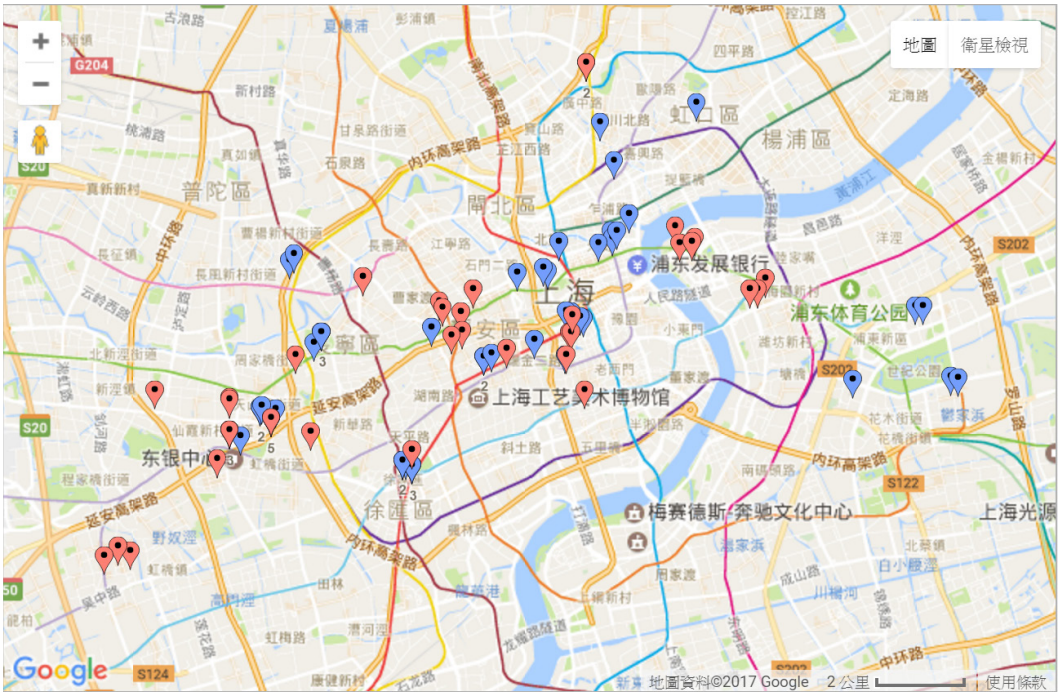
Twenty-six Japanese-style restaurants that offered SBT in an earlier study in 2012 in Beijing (5) and Shanghai (21) (Anon., 2012) were included in the sashimi tuna sample collection pool for this study in 2016.

The samples were all collected and preserved in RNA-Later, following the standard protocols developed by CSIRO. Guidance on the size of each tissue sample and the process for cleaning scissors/blades were provided in a step-by-step description to avoid tissue contamination. An experienced laboratory scientist in mainland China also carried out a demonstration of actual sample preparation for the benefit of the surveyors. The preserved frozen samples were then transported to CSIRO in Australia for DNA analysis and species identification.

A bead-based extraction protocol (Machery Nagel Nucleomag) kit was used on an Eppendorf EP motion robot to produce a 150uL archive solution and 50uL working stock of DNA in micro-titre format plates (Davies *et al.*, 2016). Archive plates of extracted DNA were stored in dedicated -80 °C freezers. The working stock plates of extracted DNA were used for genotype sequencing of approximately 5,000 single nucleotide polymorphism (SNP) loci.

DNA profiles consisted of information collected from 5,000 SNP loci for each individual. Genetic distances (i.e. percent difference between two individuals) were calculated for pairwise comparisons of all collected samples as well as comparisons to DNA profiles from control samples of known eight *Thunnus* and Skipjack Tuna species previously genotyped by CSIRO. Sequencing artefact errors on the Illumina sequencer occur at 1% or less frequency and thus individuals with less than 1% differences were considered to be samples of the same individual. Percent sequence differences of 2–3% were considered conspecifics and assigned the identification of the matching control species (Davies *et al.*, 2016).

Figure 1. Locations of restaurants in Shanghai for sashimi tuna sampling



Source: Map data © 2017 Google
Note: Red and blue dots were visited during the first and second round of sample collection, respectively.

Figure 2. Locations of restaurants in Beijing for sashimi tuna sampling

Source: Map data © 2017 Google
Note: Red and blue dots were visited during the first and second round of sample collection, respectively.

RESULTS

Sashimi tuna catch

FAO's production data in FishstatJ included data only up to 2011. They contain estimated Skipjack Tuna and tuna nei production, but no other tuna categories for mainland China (Table 7). The annual production volume was 3,350–16,550 t and 11,700–40,300 t for Skipjack Tuna and tuna nei, respectively, between 2007 and 2011.

Table 7. Mainland China tuna production (t), FAO 2007-2011.

Year	2007	2008	2009	2010	2011
Skipjack Tuna, frozen	3,350	3,950	8,440	13,130	16,550
Tunas nei, frozen	24,560	11,700	14,500	24,500	40,300
SUM	**27,910**	**15,650**	**22,940**	**37,630**	**56,850**

All FAO estimates from available sources of information

For Southern Bluefin Tuna, FAO has estimated production only for Australia, New Zealand, South Africa and the Fishing Entity of Taiwan (Table 8). Compared with CCSBT catch data (Annex 2), FAO's production estimates for Australia were apparently higher in three (2007, 2008 and 2011) out of five years (Table 8 and Annex 2). Conversely, FAO's production estimates for New Zealand and the Fishing Entity of Taiwan were lower than CCSBT catch records. It is not clear if FAO's SBT production estimate for Australia is the estimated catch volume or the volume after SBT has been fattened up in cages.

Table 8. Southern Bluefin Tuna production (t), FAO 2007-2011.

Year	2007	2008	2009	2010	2011
Australia	8,400	6,450	4,700	4,450	6,500
Taiwan	698	674	540	645	805
New Zealand	190	180	190	185	173
South Africa	-	-	-	-	-
SUM	**9,288**	**7,304**	**5,430**	**5,280**	**7,478**

- : Nil or zero
All FAO estimates from available sources of information

Based on the catch data of RFMOs, mainland China caught between 41,880–47,957 t of sashimi tuna (BET, YFT, BFT) annually from 2011 to 2014, but there was no report of SBT catch in that period (Table 9). Mainland China's annual catch of BFT was very limited, no more than 38 t annually. The YFT catch was large and fluctuated, accounting for 44-48% (18,428-22,665 t) of the total annual sashimi tuna catch for mainland China. BET was the most harvested sashimi tuna; the annual catch was 23,415-26,327 t (52-56%) between 2011 and 2014.

Table 9. Mainland China sashimi tuna catch volume (kg), 2011-2014

RFMOs	Tuna stocks	2011	2012	2013	2014	Sum
WCPFC	BET	15,524,000	13,804,000	14,446,000	12,068,000	55,842,000
	YFT	20,321,000	15,601,000	18,585,000	15,138,000	69,645,000
IOTC	BET	239,536	2,405,096	4,310,855	3,862,392	10,817,879
	YFT	191,123	537,896	922,028	1,077,679	2,728,726
IATTC	BET	5,450,000	4,386,000	5,199,000	5,253,000	20,288,000
	BFT	0	0	0	0	0
	YFT	1,807,000	2,591,000	1,874,000	2,120,000	8,392,000
ICCAT	BET	3,720,000	3,231,000	2,371,000	2,232,000	11,554,000
	BFT	36,000	36,000	38,000	37,000	147,000
	YFT	346,000	264,000	211,000	92,000	913,000
ISC	BFT	0	0	0	0	0
CCSBT	SBT	0	0	0	0	0
Total	**YFT**	**22,665,123 (47.58%)**	**18,993,896 (44.32%)**	**21,592,028 (45.02%)**	**18,427,679 (44.00%)**	**81,678,726 (45.29%)**
	BET	**24,933,536 (52.34%)**	**23,826,096 (55.60%)**	**26,326,855 (54.90%)**	**23,415,392 (55.91%)**	**98,501,879 (54.62%)**
	BFT	**36,000 (0.08%)**	**36,000 (0.08%)**	**38,000 (0.08%)**	**37,000 (0.09%)**	**147,000 (0.08%)**
	SBT	**0 (0.00%)**	**0 (0.00%)**	**0 (0.00%)**	**0 (0.00%)**	**0 (0.00%)**
SUM		**47,634,659**	**42,855,992**	**47,956,883**	**41,880,071**	**180,327,605**

Mainland China sashimi tuna trade and retention

Based on mainland China Customs data and UN Comtrade records
The sashimi tuna trade records kept by mainland China Customs and in UN Comtrade reported by mainland China matched well in general (Annex 3). Obvious discrepancies were observed for BFT in 2012 and 2013. BFT imports in 2012 and 2013 as well as (re)exports in 2012 were recorded in UN Comtrade, but not in mainland China Customs data (Annex 3). Some minor difference also existed for the import of YFT in 2014 and 2015. Mainland China Customs data recorded lower YFT import than UN Comtrade in 2014, but higher import in 2015. The trade records of BET and SBT were exactly the same in both datasets.

The annual retention for sashimi tuna in mainland China was estimated based on the catch volume plus import and minus (re)export volume. Because the catch data from RFMOs were not available for 2015, it was not possible to estimate the sashimi tuna retention by mainland China for that year (Table 9). However, the retention estimation for SBT in 2015 was possible owing to there being no recorded SBT catch for mainland China.

Unit Price
Regarding the sashimi tuna import to mainland China, BFT had the highest annual unit price (33–48 USD/kg), higher than the annual unit price for SBT (21–32 USD/kg) (Table 10). The low annual unit import price for BET and YFT may result from the relatively large amount of national catch.

The unit prices for SBT imported by mainland China varied across different exporters and different years (Table 11). The annual unit price was high for imported SBT from New Zealand (32 USD/kg), followed by Japan (30 USD/kg), Australia (23 USD/kg) and Indonesia (5 USD/kg). Based on UN Comtrade, Indonesia exported 1,500 kg of SBT to mainland China in 2013 for 2,250 USD, only 1.5 USD/kg.

Table 10. Unit price of mainland China imported sashimi tuna (USD/kg), 2011-2015

	2011	2012	2013	2014	2015
YFT	7.71	5.76	6.69	5.31	5.86
BET	13.55	8.79	2.63	6.51	5.23
BFT	47.62	-	-	32.50	38.91
SBT	28.74	31.50	25.91	20.77	25.67

Information source: based on mainland China Customs data, 2011–2015

Table 11. Unit price of mainland China imported SBT (USD/kg), 2011-2015

	2011	2012	2013	2014	2015	Average
Australia	9.00	33.72	25.53	23.14	16.03	22.87
Japan	49.62	-	26.68	18.24	26.00	30.13
New Zealand	27.58	27.07	-	34.10	35.14	31.80
Indonesia	-	-	-	5.22	-	5.22
Average	**28.74**	**31.50**	**25.91**	**20.77**	**25.67**	**25.82**

Information source: based on mainland China Customs data, 2011–2015

The annual (re)export of YFT was larger than import from 2011 to 2015 (Annex 3). The annual retention of YFT in mainland China decreased from more than 20,091 t in 2011 to 14,890 t in 2013 and further dropped to less than 400 t in 2014 (Table 12). The combination of decreased catch and the largely increased (re)export in 2014 resulted in the low level of YFT retention in 2014 (Table 12).

BET is another species of sashimi tuna with a large mainland China reported catch between 2011 and 2015 (Table 9). Mainland China Customs recorded trade for BET matched the records in UN Comtrade (Annex 3). Mainland China's annual (re)export of BET largely exceeded the import volume (Annex 3). The annual retention of BET in mainland China increased from 20,061 t in 2011 to 22,210 t in 2013, then decreased to 17,164 t in 2014 (Table 12).

Mainland China reported a small catch of BFT and a low volume of trade compared to YFT and BET although there are big discrepancies between the mainland China Customs data and UN Comtrade records. UN Comtrade recorded mainland China imports of BFT from 2011 to 2015, and (re)export of BFT in 2011, 2012 and 2014 (Annex 3). However, the mainland China Customs data had no record of BFT imports for 2012 and 2013 and also did not have records for BFT (re)export for 2012 (Annex 3). For the remaining years, the trade records for BFT between mainland China Customs and UN Comtrade matched.

Because of the small catch (36 t), low import (26 t) and relatively high (re)export (249 t), the annual retention of BFT in mainland China was negative (-187 t) in 2011. The retention in 2012 and 2013 was less than 40 t based on the mainland China Customs data, but was around 100 t based on UN Comtrade data. The annual retention of BFT in mainland China increased to 137 t in 2014.

Mainland China imported SBT every year from 2011 to 2015, the annual imports increased from 10 t in 2011 to 112 t in 2015 (except for a low import of 3.8 t in 2012). Mainland China only re-exported SBT in 2013 (51 t to Hong Kong SAR) and 2015 (4 t to the Republic of Korea). In 2013, the re-export (51 t) exceeded import (37 t) and resulted in a negative annual retention (-13.5 t) (Table 12). The SBT retention in 2014 (105 t) and 2015 (108 t) exceeded 100 t, because of sharply increased imports.

Table 12. Sashimi tuna retention in mainland China (kg), 2011-2015

	2011	2012	2013	2014	2015
Based on mainland China Customs data					
YFT	20,091,458	15,452,415	14,890,231	397,559	N/A
BET	20,061,202	20,845,914	22,210,095	17,163,994	N/A
BFT	-186,897	36,000	38,000	137,138	N/A
SBT	10,325	3,824	-13,540	104,701	108,154
SUM	**39,976,088**	**36,338,153**	**37,124,786**	**17,803,392**	N/A
Based on mainland China reported UN Comtrade data					
YFT	20,091,458	15,452,415	14,890,231	408,390	N/A
BET	20,061,202	20,845,914	22,210,095	17,163,994	N/A
BFT	-186,897	94,062	102,032	137,138	N/A
SBT	10,325	3,824	-13,540	104,701	108,154
SUM	**39,976,088**	**36,396,215**	**37,188,818**	**17,814,223**	N/A
Based on partners' data, adjusted SBT re-exports to Hong Kong SAR and Republic of Korea					
YFT	20,091,458	15,452,415	14,890,231	397,559	N/A
BET	20,061,202	20,845,914	22,210,095	17,163,994	N/A
BFT	-186,897	36,000	38,000	137,138	N/A
SBT	7,184	3,824	40,857	108,166	106,424
SUM	**39,972,947**	**36,338,153**	**37,179,183**	**17,806,857**	N/A

Based on trade partners' SBT data

Mainland China Customs recorded imports of SBT from only four countries: Australia, Japan, New Zealand and Indonesia between 2011 and 2015 (Table 13). The Customs data from Australia, Japan and New Zealand also recorded the export of SBT to mainland China, but in different volumes (Table 13).

Although Australian Customs recorded lower annual export volumes to mainland China from 2012 to 2015, the figures were very close to mainland China Customs import records (Table 13). The largest gaps were observed in 2012 (1,674 kg difference) and 2013 (8,598 kg difference).

Due to the large data gaps between Japan's export and mainland China's import of SBT, SBT trade data based on the Catch Documentation Scheme (CDS) from the Fisheries Agency of Japan were obtained. Customs data from Japan recorded the export of SBT to mainland China only in 2011 (1,140 kg) (Table 13). However, Japan's Catch Documentation Scheme (CDS) recorded around 1.6–10.9 t of SBT exports to mainland China between 2011 and 2015 (Table 13). Compared with the combination of Japan's Customs data and CDS data, mainland China Customs recorded a higher volume of import from Japan in 2011 and 2015, but lower import for the other three years.

New Zealand Customs recorded the same amount of export as mainland China recorded imports from 2012 to 2015, but not in 2011. In 2011, New Zealand recorded a higher volume of export (1,238 kg) than mainland China recorded import (183 kg) (Table 13).

In the combined exporters' records, mainland China reported higher annual SBT imports in 2011, 2014 and 2015.

Table 13. SBT traded to mainland China (kg), 2011-2015

	2011	2012	2013	2014	2015	Total
Mainland China Customs recorded import						
Australia	278	3,778	37,002	99,179	98,146	238,383
Japan	9,864	0	40	4,971	13,592	28,467
New Zealand	183	46	0	51	634	914
Indonesia	0	0	0	500	0	500
SUM	**10,325**	**3,824**	**37,042**	**104,701**	**112,372**	**268,264**
Exporters reported (re)exports to mainland China						
Australia Customs	278	2,104	28,404	99,111	98,137	228,034
Japan Customs	1,140	0	0	0	0	1,140
JP CDS to Mainland China	4,528	1,674	10,953	9,004	7,653	33,811
New Zealand Customs	1,238	46	0	51	634	1,969
Indonesia UN Comtrade	0	0	1,500	0	0	1,500
SUM	**7,184**	**3,824**	**40,857**	**108,166**	**106,424**	**266,454**

Information source: Customs data from Australia, Japan and New Zealand; Catch Documentation Scheme trade data from Japan Fisheries Agency; UN Comtrade data reported by Indonesia.

It is possible that mainland China did not re-export any SBT between 2011 and 2015. The unit price for 50,582 kg of re-export in 2013 from mainland China to Hong Kong SAR was USD7, much lower than the mainland China average annual import value (26–32 USD/kg) between 2011 and 2013 (Table 10). It is possible that importers may under-report their import value to avoid tariff and/or Value Added Tax., but for exporters this is unlikely since there is no tariff for export. The Hong Kong SAR Census and Statistics Department (CSD) recorded import unit price for SBT was 39 USD/kg in 2013, and was around 33–50 USD/kg between 2011 and 2015. The re-export records in mainland China Customs data may result from mis-declaration at re-export.

The unit price for 4,218 kg of re-export to the Republic of Korea in 2015 was higher (USD25). However, the Republic of Korea Customs did not record any SBT import from mainland China, and as a CCSBT member, it was unlikely the Republic of Korea would import SBT from mainland China.

If mainland China did not re-export any SBT, mainland China SBT retention in 2013 would be the same as the import volume, around 37 t, but not negative. The annual retention of SBT in mainland China increased from 2011 to 2015, except for a downturn in 2012 (Table 12).

Percentage of SBT retention in mainland China

The total annual retention of sashimi tuna in mainland China was around 36,000–40,000 t between 2011 to 2013, and dropped to around 17,800 t in 2014 (Table 12). This is because of the dramatic decrease of YFT retention in 2014, as a result of the more than doubling of (re)export (Annex 3).

Between 2011 and 2013, the annual retention of BET and YFT in mainland China accounted for 50–60% and 40–50% of total sashimi tuna retention, respectively (Table 14). However, the BET retention in 2014 accounted for 96% of sashimi tuna retention in mainland China, resulting from the low retention of YFT (2.3%, around 400 t) in 2014 (Tables 12 and 14). The BFT annual retention percentage was negative (-0.47%) in 2011, and increased to 0.77% in 2014. Based on mainland China Customs data, the annual retention percentage for SBT was minor in 2011 (0.03%) and even lower in 2012 (0.01%), became negative in 2013 (-0.04%), and increased to 0.59% in 2014. However, the negative SBT retention in 2013 could be as a result of incorrect (re)export reporting. Thus, it is possible that the SBT retention in mainland China in 2013 was 40,857 kg and accounted for 0.11% of annual sashimi tuna retention, based on reporters' export volume and adjusted incorrect re-export volume recorded in mainland China Customs data (Tables 12 and 14).

The percentage of SBT retention increased from 0.01% to 0.62% (based on trading partners' data) in 2014 if YFT was excluded from the sashimi tuna estimation due to the low retention volume of YFT in 2014. However, the SBT retention percentage increased from 0.11% to 0.18% in 2013.

Table 14. Percentage of sashimi tuna retention in mainland China, 2011-2015

	2011	2012	2013	2014	2015
Based on mainland China Customs data					
YFT	50.26%	42.52%	40.11%	2.23%	N/A
BET	50.18%	57.37%	59.83%	96.41%	N/A
BFT	-0.47%	0.10%	0.10%	0.77%	N/A
SBT	0.03%	0.01%	-0.04%	0.59%	N/A
based on mainland China reported UN Comtrade data					
YFT	50.26%	42.46%	40.04%	2.29%	N/A
BET	50.18%	57.27%	59.72%	96.35%	N/A
BFT	-0.47%	0.26%	0.27%	0.77%	N/A
SBT	0.03%	0.01%	-0.04%	0.59%	N/A
Based on trade partners' data					
YFT	50.26%	42.52%	40.05%	2.23%	N/A
BET	50.19%	57.37%	59.74%	96.39%	N/A
BFT	-0.47%	0.10%	0.10%	0.77%	N/A
SBT	0.02%	0.01%	0.11%	0.61%	N/A

Hong Kong SAR sashimi tuna trade and retention

Based on Hong Kong SAR CSD data and UN Comtrade records
The trade records of sashimi tuna kept by Hong Kong SAR CSD and UN Comtrade for Hong Kong SAR matched well for BET and SBT for both import and re-export, except for a minor difference (18 kg) for BET import in 2014 (Annex 4). The annual imports of YFT matched closely with minor differences in 2011, 2014 and 2015 (Annex 4). The re-export of YFT matched well in four out of five years, but a big gap was observed in 2013. Hong Kong SAR CSD only recorded 124 t of re-export, but UN Comtrade recorded 502 t of YFT re-export (Annex 4).

Regarding BFT, there were minor differences for Hong Kong SAR import in 2011 and 2015 (Annex 4). Large data discrepancies were observed for BFT import and re-export in 2012 and 2013. UN Comtrade recorded lower import but much higher re-export of BFT in 2013. In 2012, UN Comtrade recorded very close import and (re)export values for BFT but not for the corresponding volume data (Annex 4). The value recorded in UN Comtrade (in USD) for 2012 is very close to the converted value recorded in Hong Kong SAR CSD (in HKD). The difference (USD852 for import and USD42 for (re)export) might be due to the currency exchange conversion. On the other hand, in 2013, UN Comtrade also recorded very close value data, and lower import and higher (re)export volumes (Annex 4). Hong Kong SAR CSD recorded 147 t of import and 18 t of re-export in 2013, conversely, UN Comtrade recorded only around 51 t of import and 47 t of re-export for the same year.

> Hong Kong SAR CSD confirmed that the Hong Kong SAR tuna trade data recorded by the CSD were submitted directly to UN Comtrade and thus did not know the reason for the data discrepancy (Hong Kong SAR CSD pers. comm. to TRAFFIC, 2016).

Based on the Hong Kong SAR CSD Customs data, Hong Kong YFT retention was 221 t in 2011, decreased to a low point (103 t) in 2013, and increased gradually to 199 t in 2015 (Table 15). According to UN Comtrade, Hong Kong SAR re-exported high volumes of YFT in 2013 (502 t) resulting in a negative retention (-276 t) (Table 15).

Hong Kong SAR had a large volume (397 t) of BET import in 2011, which then dropped sharply to a very low level (8–26 t) from 2012 to 2015. Like the import records, Hong Kong SAR also had a large volume of re-export of SBT in 2011 (380 t), with very small or no re-export for the other four years. The retention of BET in Hong Kong SAR was between 8 t and 27 t, with a low in 2013 and a high in 2015 (Table 15).

The retention of BFT in Hong Kong SAR fluctuated between 69 t and 129 t, with highs in 2013 and a low in 2014, based on Hong Kong SAR CSD data (Table 15). However, based on UN Comtrade, the BFT retention in Hong Kong SAR was only 4 t in 2013. The BFT retention in 2012 cannot be estimated due to a zero being recorded for the trade volume in the UN Comtrade data.

The trade records between Hong Kong SAR CSD and UN Comtrade data for SBT matched completely: Hong Kong SAR imported a small but very different amount of SBT annually, from 43 kg to 11 t between 2011 and 2015. Hong Kong SAR did not re-export any SBT in the same period of time. Thus, all imported SBT was retained.

According to Hong Kong SAR CSD data, the total sashimi tuna retention was 346 t in 2011 and gradually decreased to 235 t in 2014, then increased to 355 t in 2015 (Table 15).

Although the UN Comtrade data for Hong Kong SAR resulted in a different volume of annual retentions, especially a negative overall sashimi tuna retention in 2013, the trend was similar. The retention based on UN Comtrade data was high in 2011, decreased to 2013 and increased somewhat in 2014 and 2015 (Table 15).

Table 15. Sashimi tuna retention in Hong Kong SAR (kg), 2011-2015

	2011	2012	2013	2014	2015
Based on Hong Kong SAR CSD data					
YFT	221,268	209,647	102,540	145,061	199,373
BET	17,620	13,367	8,252	18,664	26,456
BFT	106,857	98,699	128,529	69,343	126,700
SBT	77	11,372	43	1,864	2,858
SUM	**345,822**	**333,085**	**239,364**	**234,932**	**355,387**
Based on UN Comtrade data for Hong Kong SAR					
YFT	221,561	209,647	-275,524	145,111	198,823
BET	17,620	13,367	8,252	18,646	26,456
BFT	106,923	-	4,186	69,343	126,805
SBT	77	11,372	43	1,864	2,858
SUM	**346,181**	**234,386**	**-263,043**	**234,964**	**354,942**
Based on partners' data					
YFT	221,268	209,647	102,540	145,061	199,373
BET	17,620	13,367	8,252	18,664	26,456
BFT	106,857	98,699	128,529	69,343	126,700
SBT	18,636	4,898	8,180	3,591	3,153
SUM	**364,381**	**326,611**	**247,501**	**236,659**	**355,682**

Unit Price

As for mainland China, BFT import in Hong Kong SAR had the highest annual unit price (41-56 USD/kg), higher than the annual unit price for SBT (33-50 USD/kg) (Table 16).

The unit prices of SBT import by Hong Kong SAR were different for different exporters and in different years (Table 17). The annual unit price was high for imported SBT from Australia (41 USD/kg) and followed by New Zealand (5 USD/kg), Japan (26 USD/kg) and Indonesia (25 USD/kg).

Table 16. Unit price of Hong Kong SAR imported sashimi tuna (USD/kg), 2011-2015

	2011	2012	2013	2014	2015
YFT	17.03	15.98	22.61	21.51	28.74
BET	38.98	44.09	24.13	24.36	17.63
BFT	47.52	44.08	41.03	56.49	51.27
SBT	50.05	33.25	38.91	34.59	33.86

Information source: Hong Kong SAR CSD, 2011–2015

Table 17. Unit price of Hong Kong SAR imported SBT tuna (USD/kg), 2011-2015

	2011	2012	2013	2014	2015	Average
Australia	50.05	42.76	42.97	—	34.30	40.88
Indonesia	—	25.57	—	—	—	25.55
Japan	—	31.42	—	34.59	32.98	32.97
New Zealand	—	—	34.84	—	—	34.82
Average	**50.05**	**33.25**	**38.91**	**34.59**	**33.86**	**36.37**

Information source: Hong Kong SAR CSD, 2011–2015

Based on trade partners' SBT data

According to Hong Kong SAR CSD data, Hong Kong SAR imported SBT from Japan (10,764 kg), Indonesia (3,020 kg), Australia (2,393 kg) and New Zealand (37 kg) between 2011 and 2015 (Table 18). However, Customs data from Australia, Japan and New Zealand also reported SBT export to Hong Kong SAR, but with different volumes. Japan Customs data only reported 200 kg exports of SBT to Hong Kong SAR, much less than Hong Kong SAR's record. Japan's Catch Documentation Scheme (CDS) recorded around 802–4,327 kg of SBT exports to Hong Kong SAR between 2013 and 2015. Compared with the combination of Japan's Customs data and CDS data, Hong Kong SAR CSD still recorded a higher total volume of SBT imports between 2011 and 2015. However, Hong Kong SAR recorded lower annual imports in 2011 and 2014.

On the other hand, Australia reported more SBT exports (5,044 kg) to Hong Kong SAR than Hong Kong SAR's records (2,393 kg). New Zealand exported a small amount of SBT exports to Hong Kong SAR in 2012 (40 kg) and 2013 (37 kg), and Hong Kong SAR did not record the trade from New Zealand in 2012 (Table 18).

It is possible that Hong Kong SAR may import more SBT than Hong Kong SAR CSD recorded if Indonesian Customs records were the same as the data recorded in UN Comtrade (Table 18). According to UN Comtrade, Indonesia exported 28,810 kg of SBT to Hong Kong SAR between 2011 and 2014. Hong Kong SAR CSD only recorded 3,020 kg of SBT in 2012, but no import in the remaining four years. Indonesia reports in UN Comtrade showed that Hong Kong SAR may have imported much larger quantities of SBT between 2011 and 2013.

In the combination of exporters' records, Hong Kong SAR only reported higher annual SBT import in 2012 but recorded lower annual import for the other four years (Table 18).

Table 18. Hong Kong SAR imported SBT (kg), 2011-2014

Exporters	2011	2012	2013	2014	2015	SUM
	Hong Kong SAR CSD record					
Japan	0	7,930	0	1,864	970	10,764
Indonesia	0	3,020	0	0	0	3,020
Australia	77	422	6	0	1,888	2,393
New Zealand	0	0	37	0	0	37
SUM	**77**	**11,372**	**43**	**1,864**	**2,858**	**16,214**
	Exporters' records					
Japan Customs	67	133	0	0	0	200
Japan CDS data	0	0	0	3,525	802	4,327
Indonesia UN Comtrade	16,475	4,330	8,000	5	0	28,810
Australia Customs	2,094	395	143	61	2,351	5,044
New Zealand Customs	0	40	37	0	0	77
SUM	**18,636**	**4,898**	**8,180**	**3,591**	**3,153**	**38,458**

Information sources: Hong Kong SAR CSD, Japan Customs, Australia Customs and New Zealand Customs

Side issue
Although the data recorded in UN Comtrade were reported by corresponding countries/territories, these data were not always matched with the trade records kept by Customs and/or Statistics Department in the relevant countries.

The annual exports of SBT from Australia recorded in UN Comtrade were higher than data kept by Australian Customs between 2011 and 2015 (Table 18). However, the trade trend was the same from 2011 to 2015. The export volume decreased from 2011 to 2014, followed by a sharp increase in 2015. The Australian authority considers changes in the harmonized codes might be a reason for this, but cannot confirm if that is the case (Andrea Bath from Department of Agriculture and Water Resources *in litt*. to TRAFFIC, July 20th, 2016)[8].

The trade pattern for New Zealand between Customs data and UN Comtrade data also showed some differences in volumes (Tables 18). Both datasets recorded New Zealand exported SBT to Hong Kong SAR only in 2012 and 2013, and not for the other three years. The annual export volume in 2012 was slightly higher than the volume in 2013 (Table 18). The records kept in UN Comtrade for Japan matched with data kept by Japan Customs (Table 18).

In addition to Indonesia, Australia, Japan, and New Zealand, UN Comtrade also recorded six other countries, including mainland China, Yemen, India, Turkey, Singapore and Spain, which (re)exported 19–50,582 kg SBT to Hong Kong SAR (Table 19). Based on UN Comtrade partners' records, mainland China was the largest supplier for Hong Kong SAR's SBT import between 2011 and 2015, accounting for 55% of Hong Kong SAR total SBT import. Both Hong Kong SAR CSD and UN Comtrade did not record any SBT re-exported from Hong Kong SAR.

Table 19. UN Comtrade recorded SBT (re)exports to Hong Kong SAR (kg), 2011-2015

Reporters	2011	2012	2013	2014	2015	SUM
Indonesia	16,475	4,330	8,000	5	0	28,810
Australia	2,568	498	196	64	3,056	6,382
Japan	67	133	0	0	0	200
New Zealand	0	52	50	0	0	102
Mainland China*	0	0	50,582	0	0	50,582
Yemen*	3,285	0	1,217	0	0	4,502
India*	0	0	0	620	0	620
Turkey*	0	0	0	0	295	295
Singapore*	10	0	0	0	0	10
Spain*	0	0	0	0	19	19
SUM	**22,405**	**5,013**	**60,045**	**689**	**3,370**	**91,522**

*Note: *- Hong Kong SAR CSD did not record imports from these countries.*

[8] Department of Agriculture and Water Resources suspects Customs codes changes could be a reason.

Percentage of SBT retention in Hong Kong SAR

YFT and BFT were the most retained sashimi tuna species in Hong Kong SAR. The annual retention percentages were 30–54% and 43–64% for BFT and YFT, respectively in Hong Kong SAR between 2011 and 2015. BET accounted for 3–8% of annual sashimi tuna retention in Hong Kong SAR.

According to the Hong Kong SAR CSD records, SBT usually accounted for 0.02–0.08% of annual sashimi tuna retention but accounted for 3% in 2012—as a result of high SBT imports in 2012 (Table 20). If considering the SBT trade volume reported by trade partners, the actual volume and percentage of SBT retention in Hong Kong SAR would increase, especially for 2011 and 2013 (Tables 15 and 20).

Table 20. Percentage of sashimi tuna retention in Hong Kong SAR, 2011-2015

	2011	2012	2013	2014	2015
Based on Hong Kong SAR CSD data					
YFT	63.98%	62.94%	42.84%	61.75%	56.10%
BET	5.10%	4.01%	3.45%	7.94%	7.44%
BFT	30.90%	29.63%	53.70%	29.52%	35.65%
SBT	0.02%	3.41%	0.02%	0.79%	0.80%
Based on Hong Kong SAR reported UN Comtrade data					
YFT	64.00%	89.45%	104.74%	61.76%	56.02%
BET	5.09%	5.70%	-3.14%	7.94%	7.45%
BFT	30.89%	0.00%	-1.59%	29.51%	35.73%
SBT	0.02%	4.85%	-0.02%	0.79%	0.81%
Based on trade partners' data					
YFT	60.72%	64.19%	41.43%	61.30%	56.05%
BET	4.84%	4.09%	3.33%	7.89%	7.44%
BFT	29.33%	30.22%	51.93%	29.30%	35.62%
SBT	5.11%	1.50%	3.31%	1.52%	0.89%

Marked and labelled Southern Bluefin Tunas *Thunnus maccoyii*. Tokyo fishmarket Japan © Michael Sutton /WWF

Sashimi tuna market

According to dianping.com there was a total of 3,287 and 1,738 Japanese-style restaurants in Shanghai and Beijing, respectively, in early 2016. In general, Japanese-style restaurants in these two cities can be categorized into four types of food offered: ordinary restaurants, sushi buffets, set meal and specialized restaurants (e.g. Japanese-style noodle restaurants or Japanese-style barbecue restaurants). All four types of Japanese-style restaurants were included for sampling, except some of those specialized restaurants that did not offer any sashimi/sushi dishes. Almost all visited restaurants offered sashimi/sushi at different price options, however only a small number of those provided more than one kind of tuna selection. BFT or SBT were ordered and purchased if there was more than one tuna selection. The price of sashimi dishes not only depends on the quality of the tuna but also on the class/degree of the restaurants. Some restaurants only offered a fixed large portion of dishes, and smaller sizes of dishes were not available. Other restaurants did not have a take-out service for sashimi. Thus, no tuna was obtained from these restaurants.

Six restaurants that offered SBT in the 2012 study were no longer in business. Thirteen restaurants (one in Beijing and 12 in Shanghai) that offered SBT in the 2012 study were revisited for sashimi tuna sample collection in early 2016. The DNA test showed that only three out of the revisited 13 restaurants (all in Shanghai) were found serving SBT in the 2016 survey.

Most (36%, 72) of the sashimi tuna on offer for sale, and therefore collected from restaurants, were in the CNY 101–200 restaurant price category (Table 21). Only around 7% (14) of sashimi tuna was collected from restaurants in the lowest restaurant price category (≤ CNY 100) (Table 21). However, more than half of the samples were purchased at low prices, up to CNY 100 (53%, 105). Only 5% (10) of sashimi tuna samples were purchased at prices above CNY 300.

This indicated that customers tend not to order sashimi tuna at the low price category restaurants (according to average cost price per person, as listed on dianping.com) since a portion of sashimi tuna was small and not enough for a meal.

Table 21. The number of sashimi tuna samples found in different purchased as well as restaurant price categories (as listed on dainping.com)

	Purchase price (CNY)					
Restaurant price category (CNY)	**≤ 100**	**101–200**	**201–300**	**301–400**	**401–500**	**SUM**
≤ 100	10	3	0	1	0	14
101–200	51	16	3	2	0	72
201–300	27	12	1	3	0	43
301–400	10	12	5	1	0	28
401–500	4	8	5	1	1	19
> 500	3	11	8	1	0	23
SUM	**105**	**62**	**22**	**9**	**1**	**199**

Only two SBT samples were collected from restaurants at the low cost class up to CNY 100 (Table 22). Twenty SBT samples were purchased at equal to or less than CNY 100. All SBT samples were purchased at prices equal to or less than CNY 300.

Table 22. The number of identified SBT samples in different purchased as well as restaurant price categories (as listed on dainping.com)

	Purchase price (CNY)			
Restaurant price category (CNY)	**≤ 100**	**101–200**	**201–300**	**SUM**
≤ 100	2	0	0	2
101–200	7	0	0	7
201–300	8	0	0	8
301–400	3	3	1	7
401–500	0	0	0	0
> 500	0	2	0	2
SUM	**20**	**5**	**1**	**26**

Based on the survey information, 50 restaurants in Shanghai claimed to have sourced their tuna from Japan. It was similar in Beijing, where 54 restaurants claimed that their tuna was imported from Japan. Only four restaurants in Shanghai and five in Beijing, stated their tuna was sourced in mainland China. Two restaurants in Shanghai and nine in Beijing said their tuna was sourced from different oceans, such as the Atlantic, Pacific, South Pacific, Indian Ocean and Mediterranean Sea. It was not clear if those fish were imported or harvested by Chinese vessels. Canada, Chile, Indonesia, India, Norway, New Zealand, Spain, Taiwan, USA were also mentioned by at least one of the restaurants as the source of purchased sashimi tuna. Australia was not mentioned in either Beijing or Shanghai. Eighteen restaurants in Shanghai and 14 in Beijing did not know the source of their sashimi tuna.

Claimed species vs confirmed species

In terms of the species specified by restaurants where sashimi tuna was collected during this research, 64 restaurants in Shanghai did not specify the tuna species, 32 used the general term bluefin tuna, one specified as BET and another as SBT. The remaining two in Shanghai did not provide any name of the tuna. In Beijing, 51 restaurants said the purchased samples were tuna, 41 claimed those as BFT, five specified as BFT, one said SBT. Two restaurants in Beijing claimed the tuna sampled were "red tuna" (Table 23).

In Shanghai and Beijing, only one restaurant in each city claimed the purchased samples were SBT (Tables 23 and 24). The DNA test confirmed that the restaurant in Shanghai claiming to sell SBT was accurate, whereas the one in Beijing proved actually to be BET (Table 23). However, the restaurant in Shanghai claimed the SBT was sourced from the Mediterranean. It was not clear if this means the SBT was also imported from Mediterranean countries.

Table 23. Comparison of DNA identified with claimed tuna species in Shanghai

	Claimed spp.					Total
DNA identified species	**BET**	**BFT**	**SBT**	**tuna**	**N/A**	
ABT	0	8	0	9	0	17
BET	1	7	0	27	0	35
PBT	0	8	0	8	2	18
SBT	0	9	1	15	0	25
YFT	0	0	0	5	0	5
Total	**1**	**32**	**1**	**64**	**2**	**100**

Table 24. Comparison of DNA identified with claimed tuna species in Beijing

	Claimed spp.					Total
DNA identified species	**BET**	**BFT**	**SBT**	**tuna**	**"red tuna"**	
ABT	1	12	0	4	0	17
BET	4	2	1	27	1	35
PBT	0	24	0	13	0	37
SBT	0	0	0	1	0	1
YFT	0	3	0	5	1	9
unknown	0	0	0	1	0	1
Total	**5**	**41**	**1**	**51**	**2**	**100**

Based on the DNA testing of 199 collected sashimi samples, 26 were identified as SBT. This is much less (13%) compared to similar research in 2011–2012 (26% out of a total sample size of 100, or 30% out of 88 *Thunnus* spp. samples) (Anon., 2012). Only one confirmed SBT sample was collected in Beijing and the rest (25) were collected in Shanghai (Tables 23 and 24). BET (35) and SBT (25) were the tuna species mostly found in the samples collected in Shanghai, followed by PBT (18) and ABT (17) (Table 23). YFT was the least found species from samples collected in Shanghai. On the other

hand, in Beijing, PBT (37) and BET (35) were the species found most from the collected samples, followed by ABT (17), YFT (9) and SBT (1) (Table 24).

The DNA tests showed that the two samples from Beijing which were claimed to be "red tuna" were actually BET and YFT (Table 24). In total, 18 restaurants in Shanghai and 40 restaurants in Beijing provided more specific and accurate species information (Tables 23 and 24).

Compared with the percentage of SBT retention in mainland China, 0.11% in 2014 and 0.61% in 2015 (Table 14), the SBT findings from collected samples in Beijing and Shanghai (13% in total) seems high. Given the limited sample size, one has to be cautious in extrapolating the DNA test findings from these two cities to the presence of SBT in the wider Chinese market. In addition, only one restaurant in Shanghai and one in Beijing claimed and labeled the tuna actually as SBT. SBT did not seem to be a preferred tuna species in the sashimi market in mainland China, even in Shanghai. When comparing the number of SBT findings in Beijing (1) and Shanghai (25), it is possible to conclude that SBT sashimi tuna tends to be more concentrated and available only in a small number of cities in mainland China and it might not be evenly widespread throughout mainland China.

A Chi-square test[9] with a p-value of $5.236 *10^{-6}$ showed that tuna species found in Beijing and Shanghai were different (Table 25). This indicates that the frequency of tuna species composition found in mainland China might vary across locations.

Table 25. The number of different tuna species found in Beijing and Shanghai

	ABT	BET	PBT	SBT	YFT	SUM
Beijing	17	35	37	1	9	99
Shanghai	17	35	18	25	5	100
SUM	**34**	**70**	**55**	**26**	**14**	**199**

Note: Chi-square test p-value = $5.236 *10^{-6}$

A Chi-square test with a p-value of 0.00014 showed that tuna species found in the first and second runs of samples collected in Beijing were different (Table 26). However, this was not the case for Shanghai. This indicated tuna species found in Beijing might have a seasonal difference, such as before and after Chinese New Year. It is not clear if there were other possible seasonal difference in different times of a year.

[9] Chi-square test is a statistical test, used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories.

Table 26. Number of tuna species found in different runs of sample collection in Beijing and Shanghai

Sampling time/location	ABT	BET	PBT	SBT	YFT	SUM
1st run in Beijing	8	11	29	1	1	50
2nd run in Beijing	9	24	8	0	8	49
1st run in Shanghai	11	15	12	10	2	50
2nd run Shanghai	6	20	6	15	3	50
SUM	**34**	**70**	**55**	**26**	**14**	**199**

Note: Chi-square test p-values were 0.00014 for Beijing, 0.25004 for Shanghai

The restaurants of different average cost were categorized as low (equal or less than CNY 200), medium (CNY 201–400) and high-price categories (>CNY 400) (Table 27). A Chi-square test, with p-value (3.44*10-9) smaller than 0.05, indicated that tuna species distribution was different between the various price category of restaurants. Most of the YFT (79%) and BET (59%) were found in low-price category restaurants, on the other hand, most of the PBT (50%) was found at high-price category restaurants. Around 58% of SBT was found at mid-price category restaurants and only 8% of SBT was found at the high-price category restaurants.

Table 27. Sashimi tuna species found in different price categories of restaurants

Restaurant price categories	ABT	BET	PBT	SBT	YFT	SUM
Low cost (≤ 200)	13	41	12	9	11	86
Medium cost (201-400)	11	26	16	15	3	71
High cost (>400)	10	3	27	2	0	42
SUM	**34**	**70**	**55**	**26**	**14**	**199**

The smallest available portion of tuna sashimi was ordered in each restaurant for sample collection, and around 16.8 kg of tuna sashimi were purchased from 199 restaurants. SBT samples added up to around 2 kg, accounting for 12% of the total weight of purchased tuna sashimi samples.

DISCUSSION AND CONCLUSION

Trade data gaps between countries and/or territories are not necessarily caused by illegal trade, other reasons can also play a role, including recording policies (for example Japan does not record shipments smaller than JPY 200,000 (USD 2,123) in value), categories of commodity detail, document and data management, as well as cross year shipments. Increasing the consistency in data recording policies, commodity categories and the quality of data management among different countries/territories and international bodies will help to reduce these trade data gaps. Higher consistency in overall data recording will also help to identify illegal trade.

The sashimi tuna sampling in Beijing and Shanghai was conducted in early 2016 (in January and March). Thus, the sashimi tuna retention for mainland China in 2015 would be the best data reference. However, the catch data recorded by RFMOs for 2015 were not yet available and the retention volume in 2015 cannot yet be estimated. The retention percentage of sashimi tuna for mainland China was relatively stable for YFT and BET from 2011 to 2013, but changed largely in 2014. The retention percentage for BFT and SBT increased largely from 2013 to 2014, although the actual estimated retention volume for SBT remained stable for 2014 and 2015. Thus, it is inappropriate to use the sashimi tuna retention percentage in 2014 to compare and justify the market sampling findings in 2016.

It is reasonable to use the estimated retention percentage of SBT as a reference to compare with the market survey findings. Considering the large difference in SBT percentages between the estimated retention (<1%) and market survey finding (13%), there is cause for concern that there could be some amount of illegally acquired SBT, via trade and/or fisheries, available in the sashimi tuna market in mainland China. It is also worth considering the lack of clarity if all retained fresh and frozen YFT were used for sashimi tuna consumption in mainland China. Other factors, such as location, time of year and restaurant category may influence the relative presence of tuna specimens in the markets of mainland China. The tuna species composition might be different in different cities in mainland China, at different times of year and from different price categories of restaurants. The current data are not yet sufficient for estimating the level of any illegally acquired SBT in mainland China. Caution should be taken when explaining the difference in the percentage of tuna species composition between estimated retention and research findings from market sampling. Further research is needed to estimate SBT consumption in mainland China.

SBT was classified as Critically Endangered on the IUCN Red List in 2011[10]. The species is not listed in the Appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and with mainland China being a NCNM to CCSBT there is currently no specific international controls on regulating the import and (re)export of SBT, except some general trade requirements, such as volume and value declaration, import tariff and quarantine regulation. There is an uncertain regulatory agency responsibility for SBT in mainland China, suggesting it may be necessary to follow this up with China's Bureau of Fisheries Management in the future.

Other metropolitan cities in mainland China also have sashimi tuna consumption. According to the information on dianping.com surveyed on 20 September 2016, Shanghai (3,567), Guangzhou (2,042) and Beijing (1,770) are the three cities with the largest number of Japanese-style restaurants. The availability of sashimi tuna offered for sale via e-commerce platforms also needs more attention. Some sashimi tuna was offered for sale simply as "tuna", without any distinctive species or point-of-origin description, while BFT and SBT were found on at least two major business-to-consumer (B2C) e-commerce websites based in mainland China.

[10] http://www.iucnredlist.org/details/21858/0

RECOMMENDATIONS

- Encourage all CCSBT Members and CNMs to report their annual SBT catch to FAO to keep accurate and up to date information in the database.
- Encourage Australia and New Zealand to check with UN Comtrade on their trade data records for better consistency.
- Encourage countries/territories to change their Customs HS CODES as soon as possible to follow World Customs Organization (WCO) recommendations for better comparison between importers and exporters.
- Encourage countries/territories to make Customs trade data publically accessible (e.g. online) or, at least to provide data upon request, without charge.
- Encourage Japan to confirm all sashimi tuna trade volumes with mainland China and Hong Kong SAR to eliminate any possible illegal trade.
- Encourage Japan to record all values of import and export, including those equal or under JPY 200,000 in value, and report all recorded trade to UN Comtrade for a better estimation of global trade.
- There are likely to be other places in mainland China with high sashimi tuna consumption, e.g. Guangzhou. Therefore, more sampling in these centres for DNA testing is necessary to understand better sashimi tuna species composition across mainland China.

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ANNEX

Annex 1. List of Customs code for sashimi tuna in different countries/territories, 2011-2015

Tuna products	**Australia**	**Year**
Yellowfin Tuna, fresh	0302320015	2011–2015
Bigeye Tuna, fresh	0302340033	2011–2015
(Atlantic & Pacific) Bluefin Tuna, fresh	0302350034	2011
(Atlantic & Pacific) Bluefin Tuna, fresh	03023510	2012–2015
Southern Bluefin Tuna, fresh	0302360037	2011–2015
Yellowfin Tuna, frozen	0303420010	2011–2015
Bigeye Tuna, frozen	0303440050	2011–2015
(Atlantic & Pacific) Bluefin Tuna, frozen	0303450052	2011
(Atlantic & Pacific) Bluefin Tuna, frozen	03034510	2012–2015
Southern Bluefin Tuna, frozen	0303460055	2011–2015
Tuna products	**Japan**	**Year**
Yellowfin Tuna, fresh	030232000	2011–2015
Bigeye Tuna, fresh	030233000	2011–2015
(Atlantic & Pacific) Bluefin Tuna, fresh	030235000	2011
Atlantic Bluefin Tuna, fresh	030235010	2012–2015
Pacific Bluefin Tuna, fresh	030235020	2012–2015
Southern Bluefin Tuna, fresh	030236000	2011–2015
Yellowfin Tuna, frozen	030342000	2011–2015
Bigeye Tuna, frozen	030344000	2011–2015
(Atlantic & Pacific) Bluefin Tuna, frozen	030345000	2011
Atlantic Bluefin Tuna, frozen	030345010	2012–2015
Pacific Bluefin Tuna, frozen	030345020	2012–2015
Southern Bluefin Tuna, frozen	030346000	2011–2015
Tuna products	**Korea**	**Year**
Yellowfin Tuna, fresh	0302320000	2011–2015
Bigeye Tuna, fresh	0302340000	2011–2015
Bigeye Tuna, fresh	0302440000	2015
(Atlantic & Pacific) Bluefin Tuna, fresh	0302350000	2011
(Atlantic & Pacific) Bluefin Tuna, fresh	0302450000	2012–2015
Atlantic Bluefin Tuna, fresh	0302351000	2012–2015
Pacific Bluefin Tuna, fresh	0302352000	2012–2015

Southern Bluefin Tuna, fresh	0302360000	2011
Southern Bluefin Tuna, fresh	0302460000	2012–2015
Yellowfin Tuna, frozen	0303420000	2011–2015
Bigeye Tuna, frozen	0303440000	2011–2015
(Atlantic & Pacific) Bluefin Tuna, frozen	0303450000	2011–2012
Atlantic Bluefin Tuna, frozen	0303451000	2012–2015
Pacific Bluefin Tuna, frozen	0303452000	2012–2015
Southern Bluefin Tuna, frozen	0303460000	2011–2015
Tuna products	**Taiwan**	**Year**
Yellowfin Tuna, fresh	03023200007	2011–2015
Bigeye Tuna, fresh	03024300005	2011–2015
(Atlantic & Pacific) Bluefin Tuna, fresh	03023500004	2011–2015
Southern Bluefin Tuna, fresh	03023600003	2011–2015
Yellowfin Tuna, frozen	03034200004	2011–2015
Bigeye Tuna, frozen	03034400002	2011–2015
(Atlantic & Pacific) Bluefin Tuna, frozen	03034500001	2011–2015
Southern Bluefin Tuna, frozen	03034600000	2011–2015
Tuna products	**New Zealand**	**Year**
fresh yellowfin, whole	0302320001	2011–2015
fresh yellowfin, headed and gutted	0302320011	2011–2015
fresh yellowfin, other than whole or headed and gutted	0302320019	2011–2015
fresh bigeye, whole	0302340010	2011–2015
fresh bigeye, headed and gutted	0302340012	2011–2015
fresh bigeye, other than whole or headed and gutted	0302340019	2011–2015
fresh bluefin, whole	0302350010	2011
fresh bluefin, headed and gutted	0302350012	2011
fresh bluefin, other than whole or headed and gutted	0302350019	2011
fresh Atlantic bluefin, whole	0302350011	2012–2015
fresh Atlantic bluefin, headed and gutted	0302350015	2012–2015
fresh Atlantic bluefin, other than whole or headed and gutted	0302350029	2012–2015
fresh Pacific bluefin, whole	0302350033	2012–2015
fresh Pacific bluefin, headed and gutted	0302350035	2012–2015
fresh Pacific bluefin, other than whole or headed and gutted	0302350039	2012–2015
fresh southern bluefin, whole	0302360010	2011–2015
fresh southern bluefin, headed and gutted	0302360012	2011–2015
fresh southern bluefin, other than whole or headed and gutted	0302360019	2011–2015

frozen yellowfin, whole	0303420001	2011–2015
frozen yellowfin, headed and gutted	0303420011	2011–2015
frozen yellowfin, other than whole or headed and gutted	0303420019	2011–2015
frozen bigeye, whole	0303440010	2011–2015
frozen bigeye, headed and gutted	0303440012	2011–2015
frozen bigeye, other than whole or headed and gutted	0303440019	2011–2015
frozen bluefin, whole	0303450010	2011
frozen bluefin, headed and gutted	0303450012	2011
frozen bluefin, other than whole or headed and gutted	0303450019	2011
frozen Atlantic bluefin, whole	0303450011	2012–2015
frozen Atlantic bluefin, headed and gutted	0303450015	2012–2015
frozen Atlantic bluefin, other than whole or headed and gutted	0303450029	2012–2015
frozen Pacific bluefin, whole	0303450031	2012–2015
frozen Pacific bluefin, headed and gutted	0303450035	2012–2015
frozen Pacific bluefin, other than whole or headed and gutted	0303450039	2012–2015
frozen southern bluefin, whole	0303460010	2011–2015
frozen southern bluefin, headed and gutted	0303460012	2011–2015
frozen southern bluefin, other than whole or headed and gutted	0303460019	2011–2015

Annex 2. Southern Bluefin Tuna catch volume (t), CCSBT 2001-2014.

	2007	2008	2009	2010	2011	2012	2013	2014
Australia	5,244	5,635	4,813	5,033	5,108	4,200	4,200	4,503
Japan	7,855	4,207	2,840	2,952	2,659	2,223	2,518	2,528
New Zealand	264	238	383	319	419	501	547	776
Korea	38	150	521	1,134	1,117	867	705	922
Taiwan	941	846	841	913	921	1,208	533	494
Philippines	53	50	46	45	47	43	45	46
Indonesia	1,726	598	1,077	926	641	636	842	910
South Africa	24	9	41	45	32	34	49	77
EU	-	3	18	14	2	11	3	4
Miscellaneous	-	-	-	4	-	-	-	-
SUM	**10,580**	**11,386**	**10,946**	**9,723**	**9,443**	**10,258**	**11,768**	**11,910**

Information source: CCSBT catch data

Annex 3. Mainland China sashimi tuna trade (kg, USD), 2011-2015

	Mainland China Customs records						UN Comtrade records reported by mainland China					
	2011	**2012**	**2013**	**2014**	**2015**	**SUM**	**2011**	**2012**	**2013**	**2014**	**2015**	**SUM**
	Import						**Import**					
YFT	4,003,252 (11,665,956)	6,825,539 (16,193,278)	5,673,312 (12,995,156)	6,966,210 (12,871,471)	12,421,797 (23,607,753)	35,890,110 (77,333,614)	4,003,252 (11,665,956)	6,825,539 (16,189,731)	5,673,312 (12,995,156)	6,977,041 (12,890,628)	12,417,729 (23,616,644)	35,896,873 (77,358,115)
BET	150,412 (653,884)	296,846 (959,569)	253,804 (706,150)	213,229 (826,197)	822,577 (1,896,201)	1,736,868 (5,042,001)	150,412 (653,884)	296,846 (959,569)	253,804 (706,150)	213,229 (826,197)	822,577 (1,896,201)	1,736,868 (5,042,001)
BFT	26,103 (1,443,649)	0 (0)	0 (0)	104,582 (4,071,876)	140,824 (5,216,618)	271,699 (10,738,317)	26,103 (1,443,649)	**68,709 (3,446,893)**	**64,032 (2,824,099)**	104,582 (4,071,876)	140,824 (5,216,618)	404,440 (17,009,309)
SBT	10,325 (497,008)	3,824 (125,947)	37,042 (850,769)	104,701 (1,944,568)	112,372 (2,023,347)	268,264 (5,441,639)	10,325 (497,008)	3,824 (125,947)	37,042 (850,769)	104,701 (1,944,568)	112,372 (2,023,347)	268,264 (5,441,639)
SUM	**4,190,092 (14,260,497)**	**7,126,209 (17,278,794)**	**5,964,158 (14,552,075)**	**7,388,722 (19,714,112)**	**13,497,760 (32,750,093)**	**38,166,941 (98,555,571**	**4,190,092 (14,260,497)**	**7,194,918 (20,722,140)**	**6,028,190 (17,376,174)**	**7,399,553 (19,733,269)**	**13,493,692 (32,758,984)**	**38,306,445 (104,851,064)**
	(Re)export						**(Re)export**					
YFT	6,576,917 (28,245,946)	10,367,020 (43,549,458)	12,375,109 (83,144,013)	24,996,330 (120,766,026)	29,014,122 (130,092,690)	83,329,498 (405,798,133)	6,576,917 (28,245,946)	10,367,020 (43,549,458)	12,375,109 (83,144,013)	24,996,330 (120,766,026)	29,014,122 (130,104,750)	83,329,498 (405,810,193)
BET	5,022,746 (59,708,369)	3,277,028 (35,535,602)	4,370,564 (30,910,855)	6,464,627 (47,295,412)	13,307,115 (77,618,551)	32,442,080 (251,068,789)	5,022,746 (59,708,369)	3,277,028 (35,535,602)	4,370,564 (30,910,855)	6,464,627 (47,295,412)	13,307,115 (77,618,551)	32,442,080 (251,068,789)
BFT	249,000 (1,290,500)	0 (0)	0 (0)	4,444 (144,334)	0 (0)	253,444 (1,434,834)	249,000 (1,290,500)	**10,647 (145,579)**	0 (0)	4,444 (144,334)	0 (0)	264,091 (1,580,413)
SBT	0 (0)	0 (0)	50,582 (358,728)	0 (0)	4,218 (104,401)	54,800 (463,129)	0 (0)	0 (0)	50,582 (358,728)	0 (0)	4,218 (104,401)	54,800 (463,129)
SUM	**11,848,663 (89,244,815)**	**13,644,048 (79,085,060)**	**16,796,255 (114,413,596)**	**31,465,401 (168,205,772)**	**42,325,455 (207,815,642)**	**116,079,822 (658,764,885)**	**11,848,663 (89,244,815)**	**13,654,695 (79,230,639)**	**16,796,255 (114,413,596)**	**31,465,401 (168,205,772)**	**42,325,455 (207,827,702)**	**116,090,469 (658,922,524)**

Information source: mainland China Customs; UN Comtrade for mainland China.
Figures in brackets are value (USD)

Annex 4. Hong Kong SAR sashimi tuna trade (kg, USD), 2011-2015

	Hong Kong SAR CSD records						UN Comtrade records reported by Hong Kong SAR					
	2011	**2012**	**2013**	**2014**	**2015**	**SUM**	**2011**	**2012**	**2013**	**2014**	**2015**	**SUM**
	Import						**Import**					
YFT	221,710 (3,004,702)	288,684 (3,020,256)	226,809 (2,826,700)	221,360 (2,397,825)	202,795 (2,584,372)	1,161,358 (13,833,856)	222,003 (3,026,013)	288,684 (3,020,856)	226,809 (2,826,819)	221,410 (2,398,771)	202,245 (2,578,954)	1,161,151 (13,851,413)
BET	397,069 (3,171,687)	13,367 (333,335)	8,252 (270,861)	18,964 (227,726)	26,456 (264,409)	464,108 (4,268,018)	397,069 (3,172,259)	13,367 (333,373)	8,252 (270,884)	18,946 (226,404)	26,456 (264,311)	464,090 (4,267,231)
BFT	123,634 (3,382,731)	121,537 (3,361,970)	146,614 (5,028,525)	84,542 (3,340,579)	137,375 (4,157,541)	613,702 (19,271,345)	123,700 (3,384,335)	**0 (3,362,822)**	**51,133 (5,109,253)**	84,542 (3,341,043)	137,480 (4,161,981)	396,855 (19,359,434)
SBT	77 (3,854)	11,372 (344,421)	43 (1,547)	1,864 (64,475)	2,858 (65,393)	16,214 (479,689)	77 (3,818)	11,372 (344,521)	43 (1,606)	1,864 (64,534)	2,858 (65,342)	16,214 (479,821)
SUM	**742,490 (9,562,974)**	**434,960 (7,059,982)**	**381,718 (8,127,632)**	**326,730 (6,030,605)**	**369,484 (7,071,715)**	**2,255,382 (37,852,909)**	**742,849 (9,586,425)**	**313,423 (7,061,572)**	**286,237 (8,208,562)**	**326,762 (6,030,752)**	**369,039 (7,070,588)**	**2,038,310 (37,957,899)**
	Re-export						**Re-export**					
YFT	442 (21,194)	79,037 (566,387)	124,269 (1,340,639)	76,299 (644,363)	3,422 (41,919)	283,469 (2,614,502)	442 (21,260)	79,037 (566,454)	**502,333 (1,340,817)**	76,299 (644,464)	3,422 (41,892)	661,533 (2,614,887)
BET	379,449 (2,659,429)	0 (0)	0 (0)	300 (2,321)	0 (0)	379,749 (2,661,750)	379,449 (2,659,816)	0 (0)	0 (0)	300 (2,270)	0 (0)	379,749 (2,662,086)
BFT	16,777 (536,793)	22,838 (751,874)	18,085 (625,004)	15,199 (497,618)	10,675 (310,455)	83,574 (2,721,743)	16,777 (541,648)	**0 (751,916)**	**46,947 (624,923)**	15,199 (497,780)	10,675 (310,452)	89,598 (2,726,719)
SBT	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
SUM	**396,668 (3,217,416)**	**101,875 (1,318,260)**	**142,354 (1,965,643)**	**91,798 (1,144,302)**	**14,097 (352,373)**	**746,792 (7,997,995)**	**396,668 (3,222,724)**	**79,037 (1,318,370)**	**549,280 (1,965,740)**	**91,798 (1,144,514)**	**14,097 (352,344)**	**1,130,880 (8,003,692)**

Information source: Hong Kong SAR CSD; UN Comtrade for Hong Kong SAR.
Figures in brackets are value (USD)
Hong Kong SAR CSD value data recorded in HKD, and converted to USD based on annual exchange rates.

Annex 5. Tuna species identified in the restaurants in Beijing, 2016

Source: Map data © 2017 Google

Annex 6. Tuna species identified in the restaurants in Shanghai, 2016

Source: Map data © 2017 Google

AUGUST 2017

TRAFFIC, the wildlife trade monitoring network, is the leading non-governmental organization working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

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