E-reporting system of logbook is available for distant water vessel after November 2016, but not for smaller vessel. The logbook data is reported via e-mail using electric form of logbook.

Fish bait information is available for distant water vessel after January 2013, but not for smaller vessel.

Availability of information of catch by species

- Tuna species and swordfish are available for whole period since 1952
- 1958-1965; marline species are not available
- Before 1993; sharks are not reported by species
- After 1994; blue shark, salmon shark (porbeagle), shortfin mako and whitetip shark are recorded by species
- After 1994; format for other species catch are available (but not fully recorded)

INTER-AMERICAN TROPICAL TUNA COMMISSION
WORKSHOP ON LONGLINE DATA
La Jolla, California (USA)
11-15 February 2019

Review of size composition data from longline in the Pacific Ocean, Japan

Keisuke Satoh
National Research Institute of Far Seas Fisheries

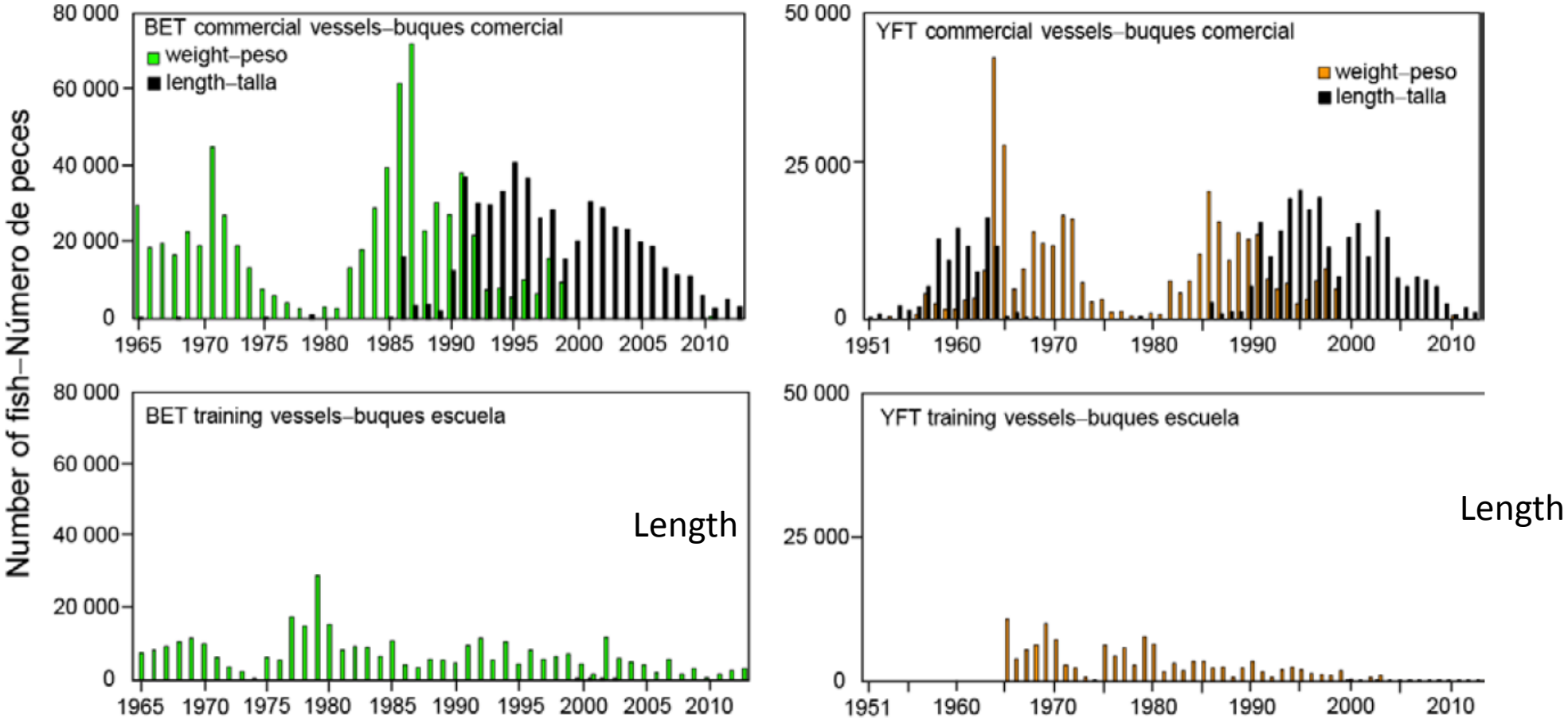
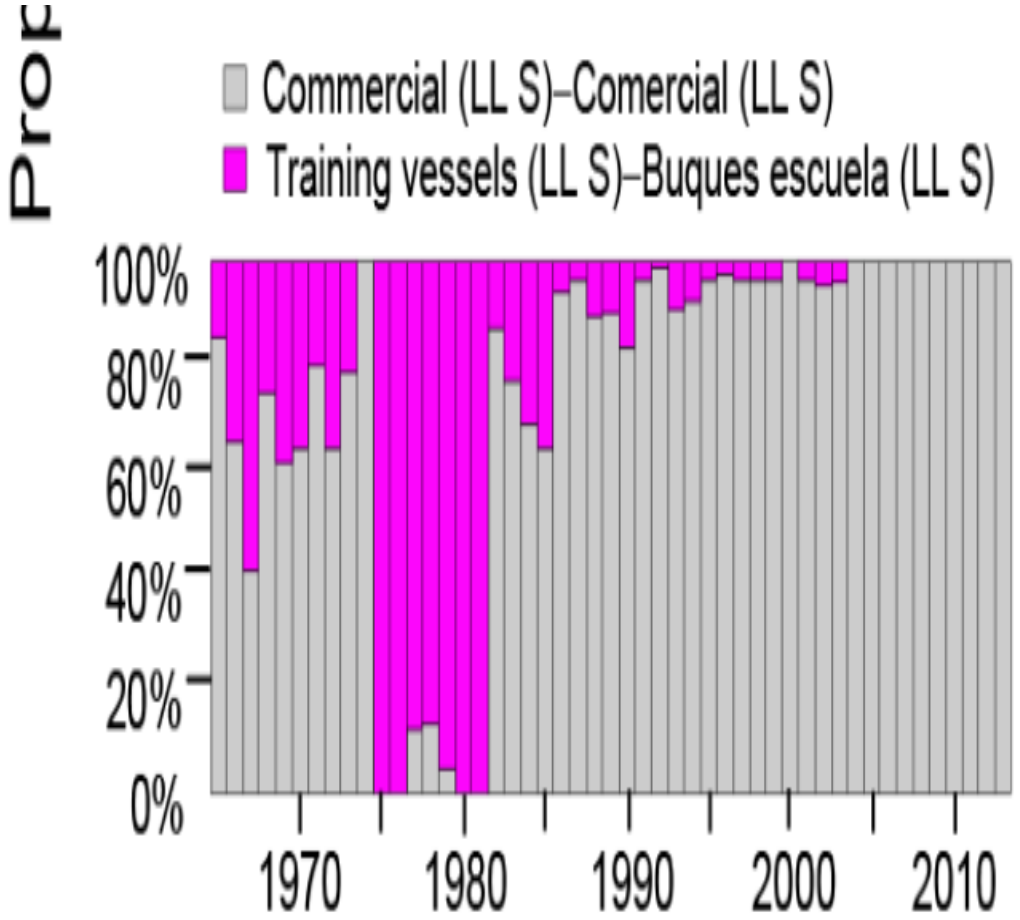
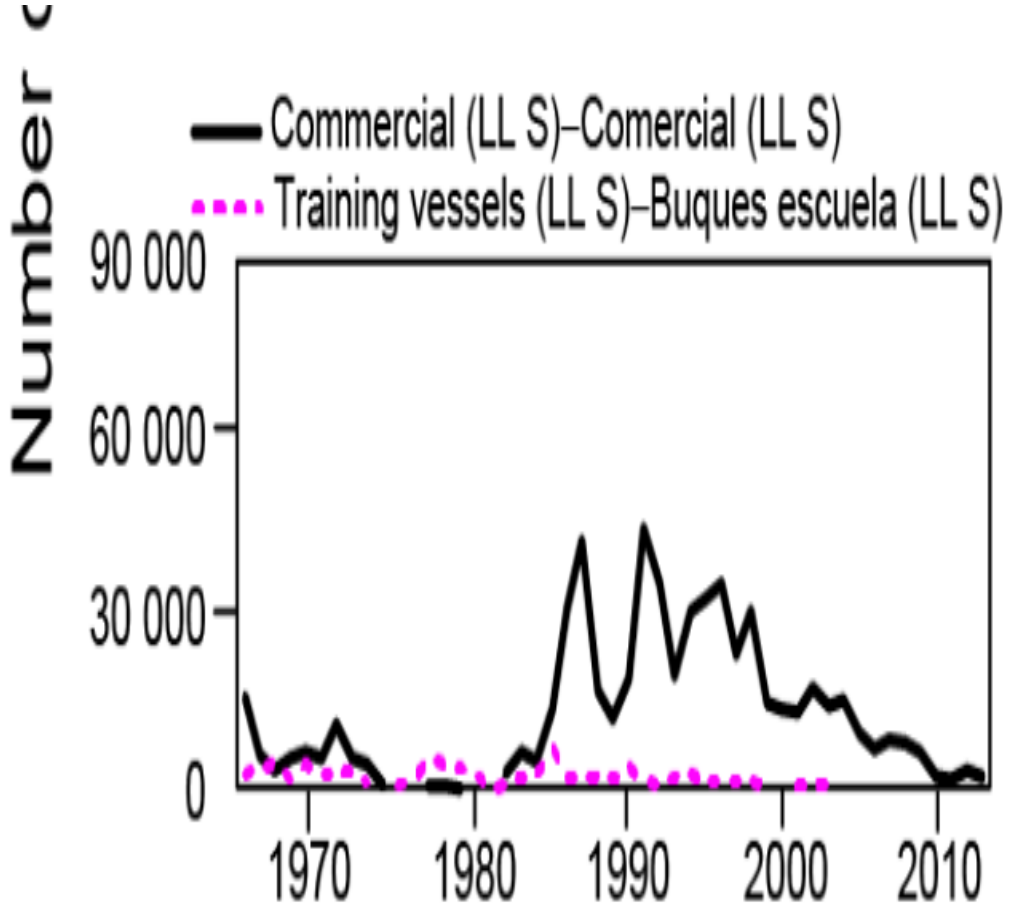


FIGURE 5.5. Number of Japanese longline size data for bigeye (left panels) and yellowfin (right panels) in the eastern Pacific Ocean, by vessel type (commercial or training) and unit of fish size (weight (kg) and length (cm), 1965-2013.

There are four types of length data, which contains weight and length, and commercial vessel and training vessel. The finer spatial resolution (1x1) length data from commercial vessel is basically available after 1986.

From Satoh et al 2016. SAC-07-03d





In 1970s and 1980s, the proportion of commercial vessel size data is very small.

From Satoh et al 2016. SAC-07-03d

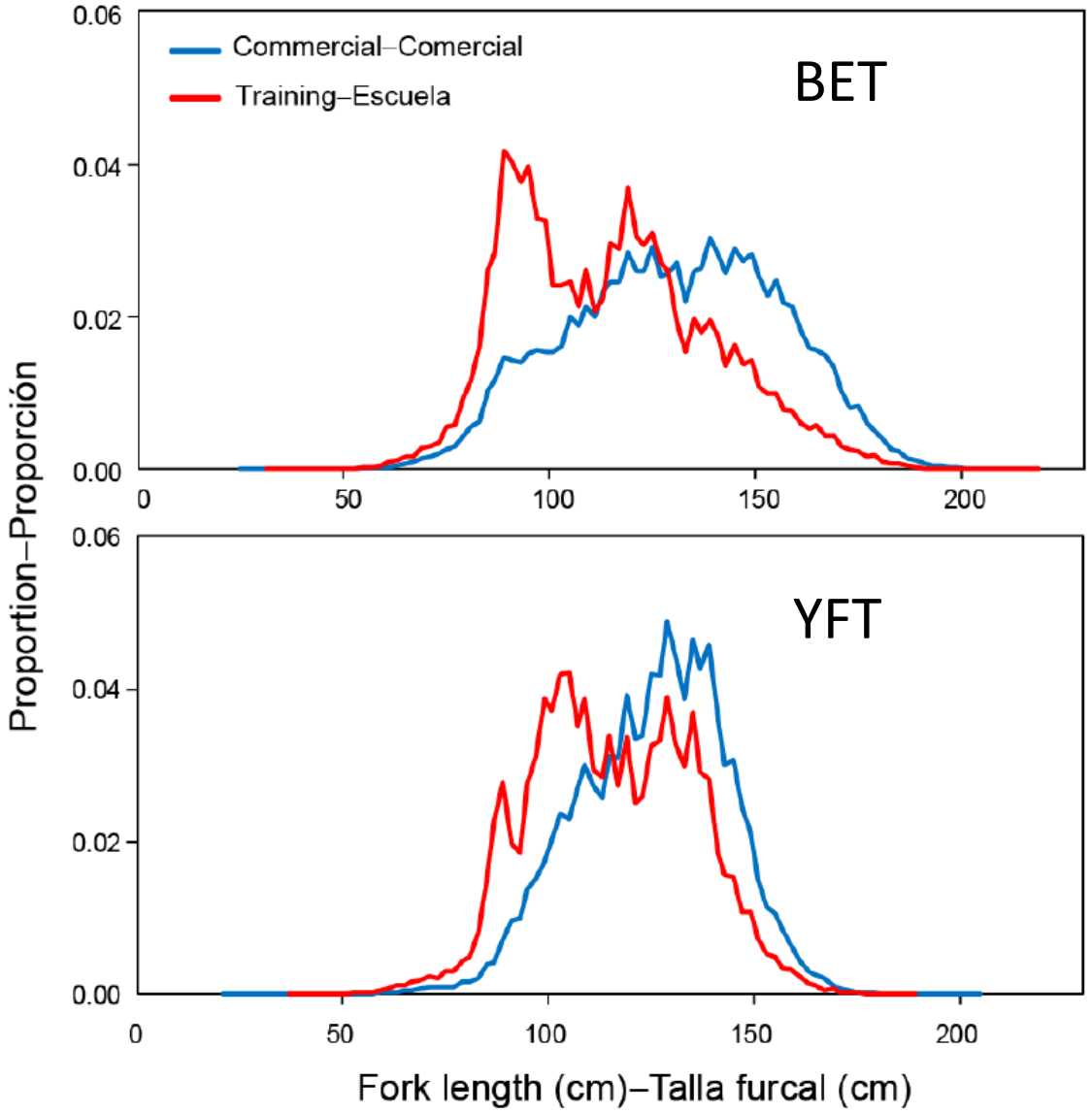


FIGURE 5.3. Comparison of length-frequencies of bigeye (top panel) and yellowfin (bottom panel) caught in the eastern Pacific Ocean of Japanese longline between commercial vessels (blue line) and training vessels (red line)catches in the eastern Pacific Ocean, 1975-2013. For the comparison the weight data is converted into length using same compiling method for size data submission to IATTC from NRIFSF before 2010.

There is discrepancy of size data between training vessel an commercial vessel.

The training vessel usually measure length for all fish when they were on deck. Thus, the discrepancy may be due to discard of small fish on commercial vessel.

From Satoh et al 2016. SAC-07-03d

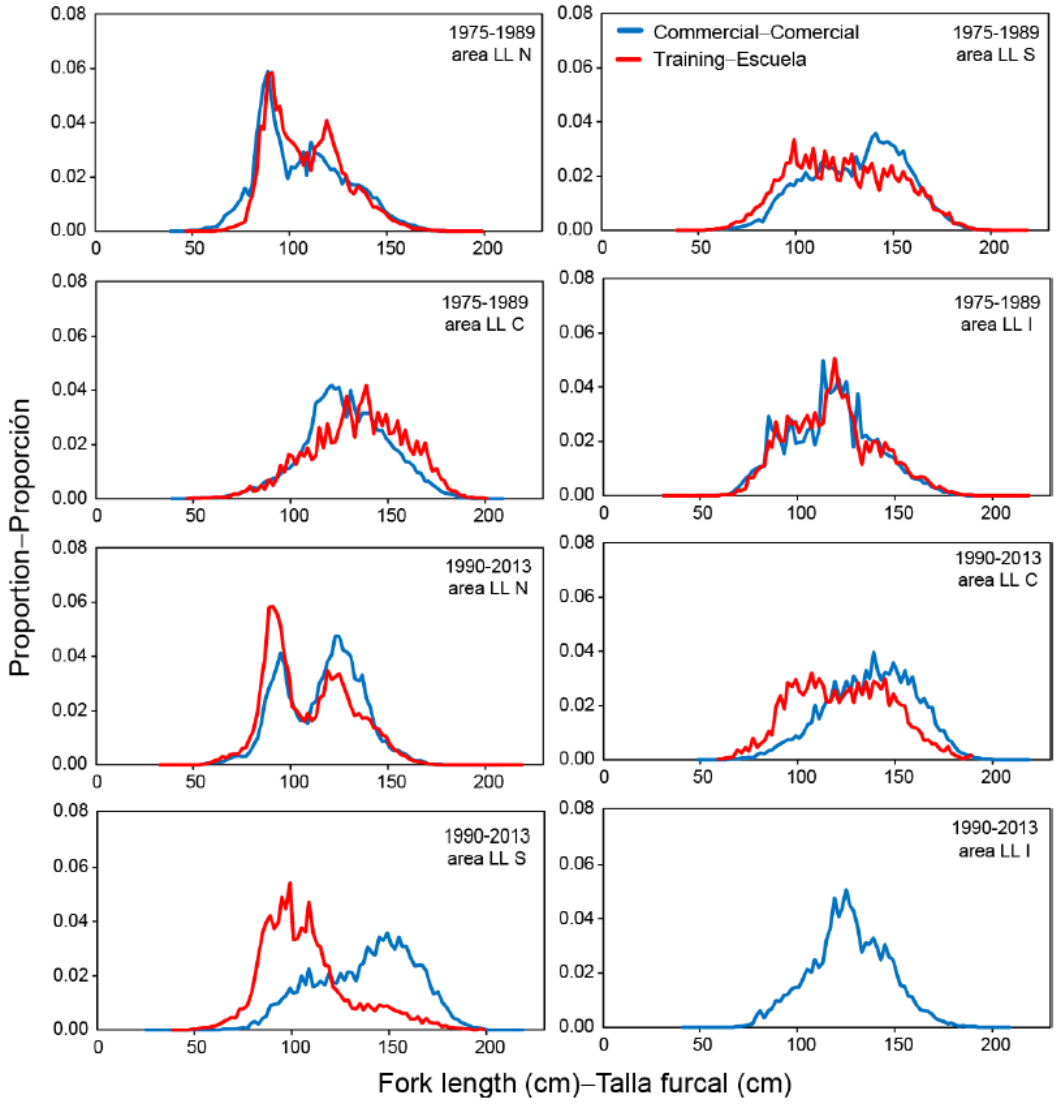


FIGURE 5.4a. Comparison between commercial vessels (blue line) and training vessels (red line) of length frequency of bigeye, by area and period (pre- and post-1990), in the eastern Pacific Ocean. The area definition coincides with those of the stock assessments in 2015. For the comparison the weight data is converted into length using same compiling method for size data submission to IATTC from NRIFSF before 2010.

However, such difference did not necessarily occur. Thus discard may occur occasionally.

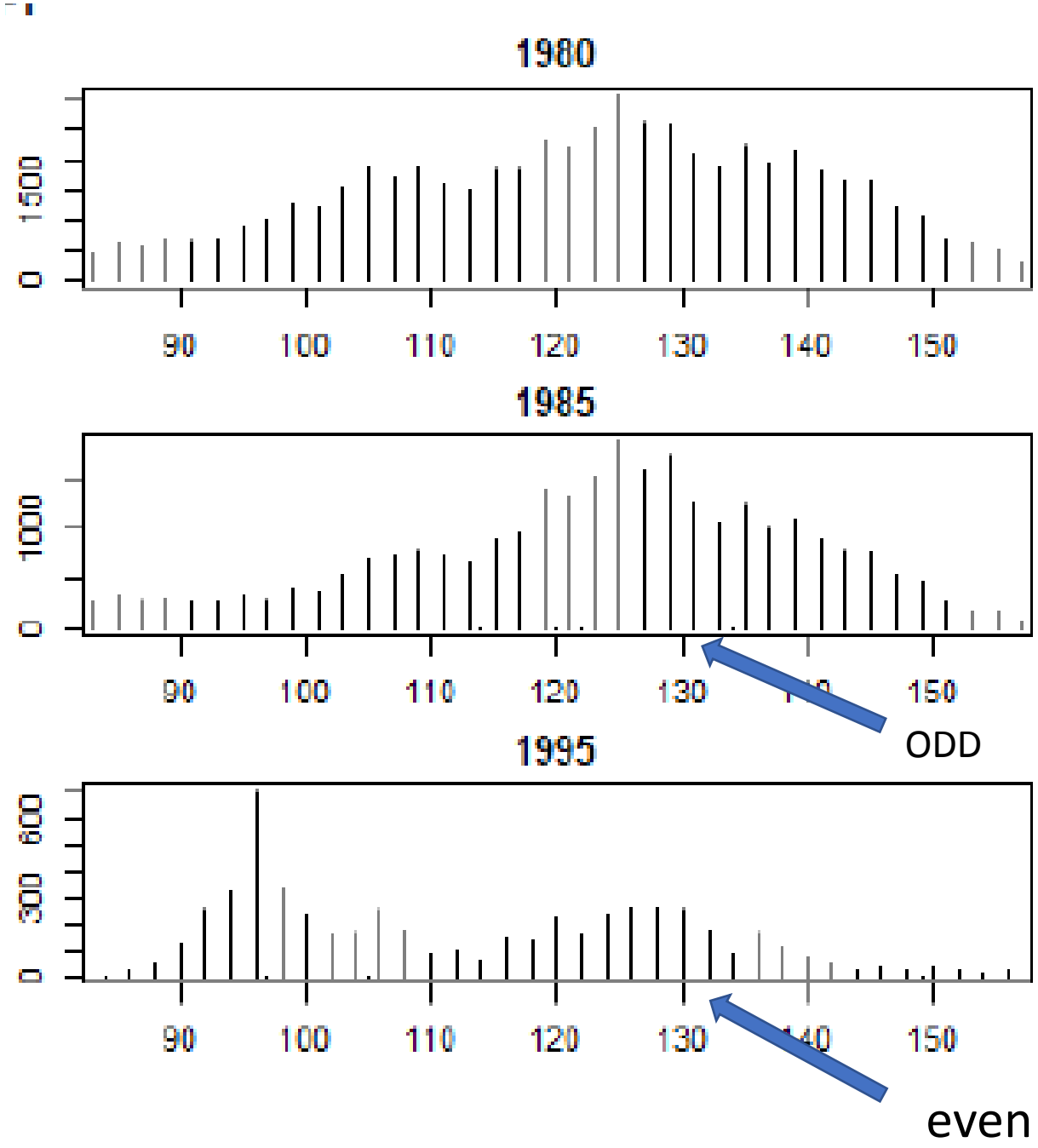
In addition, weight data is converted into length for the graph before 1989.

From Satoh et al 2016. SAC-07-03d

Size data field

- species:4 (bigeye), 5(yellowfin) [Other species are also available]
- year: 1952-
- Spatial resolution: 1 (latitude 10° × longitude 20°), 2(5° ×10°), 3 (5° ×5°) and 4 (1° ×1°). Finest resolution is available after 1986 for commercial vessel.
- unit: 0 (unknown), 3 (1 kg), 6(1 cm), 7(2 cm) and 8(5 cm)
- vessel_type: 1: commercial vessel, 2: training vessel
- sex: 0 (unknown), 1(female), 2(male), and NA(.)
- size_class: upper limit

See also Simon et al (2017, IOTC-2017-WPTT19-35), which indicated unsuspected change in rounding practice in the Indian Ocean (figure 15 in IOTC-2017-WPTT19-35). Same things are found in this data set. The unit of 7 (2 cm) is common size unit before 1988, after that the unit 6 (1 cm) is usually applied. You can also find that odd number for the size_class is common before 1988. Thus, in case the size_class is odd number in length and the unit is 7 (2 cm) and before 1988, the size_class could be center value instead of upper limit, however there is no evidence to support this hypothesis at this stage.



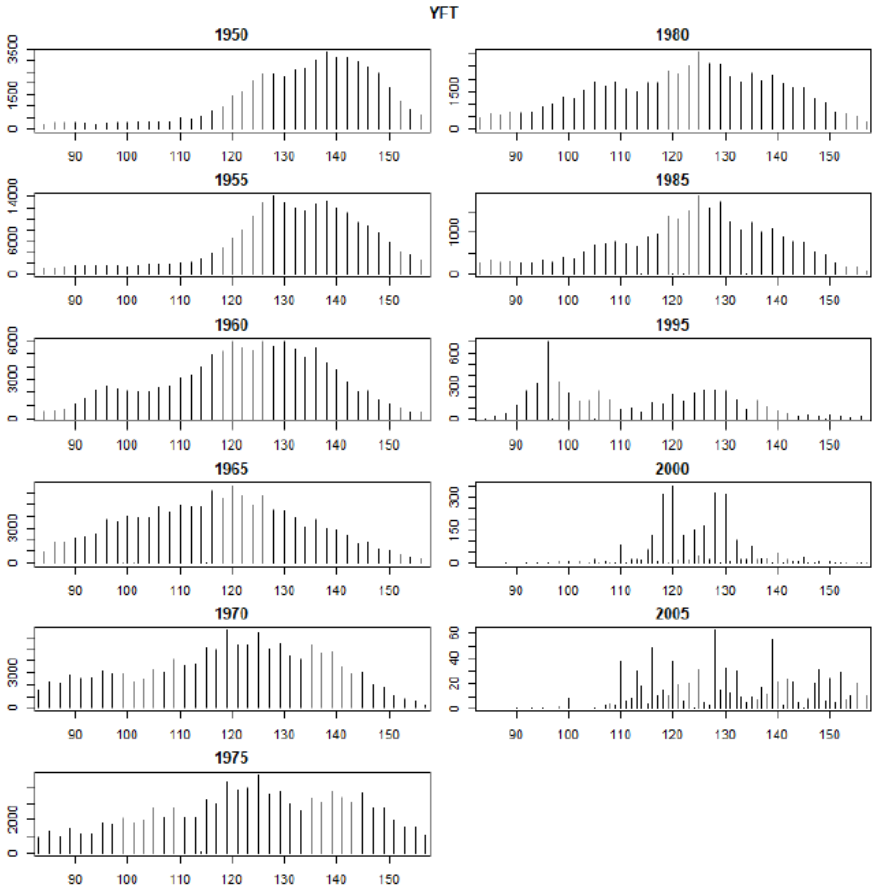


Figure 15: Yellowfin samples per length class with the measurement unit indicating 2cm length bins.

Simon et al (2017, IOTC-2017-WPTT19-35)

太平洋赤道海域に於けるメバチの体長組成*

行 縄 茂 理

Size Frequency of the Bigeye tuna Caught in the Equatorial Pacific

MORI YUKINAWA

The present paper deals with analysis of length frequency of bigeye tuna, the data obtained from length determination conducted at several landing place and some on the investigation boats.

The sample used for the study were caught in the Equatorial Pacific from October to March (1950~1955).

The results obtained are as follows.

1) It seems that the longitudinal change of length frequency distributions appeared in a border line of 170°E and 150°W longitude.

2) The latitudinal difference of length frequency distributions are not distinctively, but the size of fishes are larger to the north ward.

3) It seems that there is a persisent difference between odd-and even-numbered years (1950~1952). However there is a distinct similarity within each series.
This phenomenon disappeared after 1953 in west seas of 150° W longitude.

太平洋に於けるメバチの主要漁場は，北太平洋流に沿って東西に長く帯状に連らなる北部太平洋漁場と，6°~12°N間を中心として，北部太平洋漁場と平行する如く，東西に長く形成される漁場**とに大別される。***後者に於いてはパラオ島近海，マーシヤル群島近海（主としてマーシヤル群島より東の海域をマーシヤル漁場と呼んでいる。）が中心漁場となっている。

メバチの体長組成については既に中村他[1]，上村，本間[2]（共に北部太平洋漁場）E,S,IVERSEN[3]（ハワイ近海）の報告があり，これらは共に隔年周期の現象を認めているが，著者は太平洋赤道海域のメバチ資源の構造について検討し，海域差及び年変化について若干の知見を得たので報告する。

1 資 料

メバチを主対象として延縄漁船が太平洋赤道海域に稼動するようになったのは1950年以降である。この報告では1950年10月より1956年3月に至る期間，東京，焼津，三崎（神奈川水試調査）の各魚市場及び調査船母船上に於いて体長測定を行った資料を用いた。

体長は尾叉長（Fork Length）を木製ノギスで1 cm単位で測定したが，本研究では4 cmをもつて1体長級として整理した。

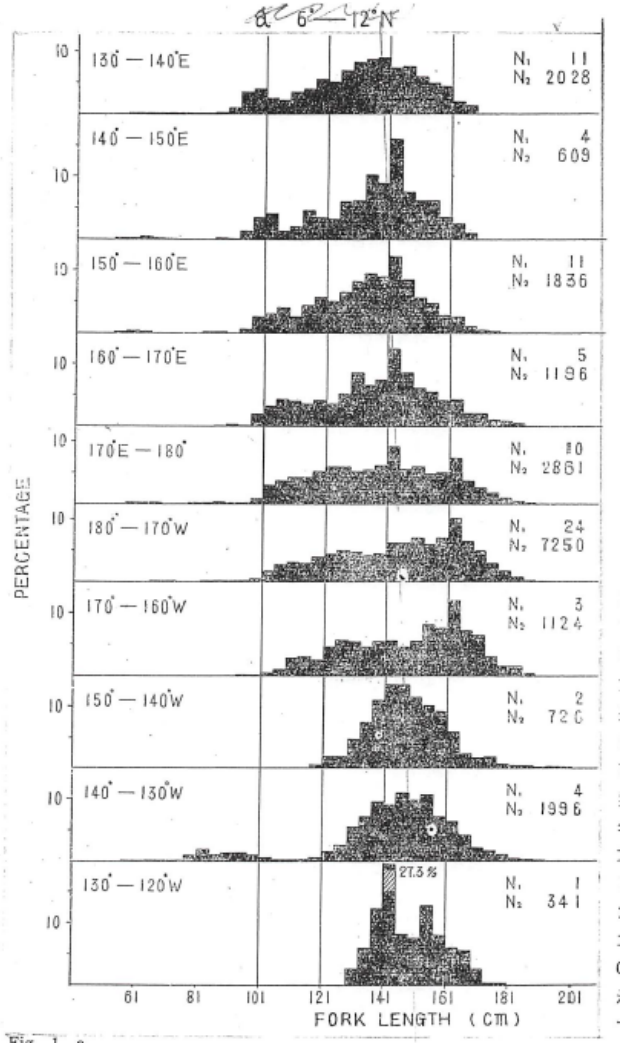
抽出方法については第一次抽出単位を船として出来得る限り多くの船について実施し，第二次抽出を魚体とし，調査船上に於いては悉皆調査を，他ではその時の実情に応じて1/2若しくは1/3の系統抽出を行った。

資料はメバチの主分布範囲である6°~12°Nに多く得られ，季節的には4~9月に少く，10~3月に多い。以下本文では10~3月の資料のみを使用した。

---

* 南海区水産研究所業績第109号，日本水産学会中，四国支部例会にて発表。(1957. 8)
** 本文では2°S~12°Nを太平洋赤道海域として取扱った。
*** 最近の資料に依ると，140°W附近より以東の海域では7°N~7°Sの範囲で高い釣獲率を示している。

Yukinawa (1958) showed that the longitudal fish size changes in equatorial area of the Pacific Ocean.



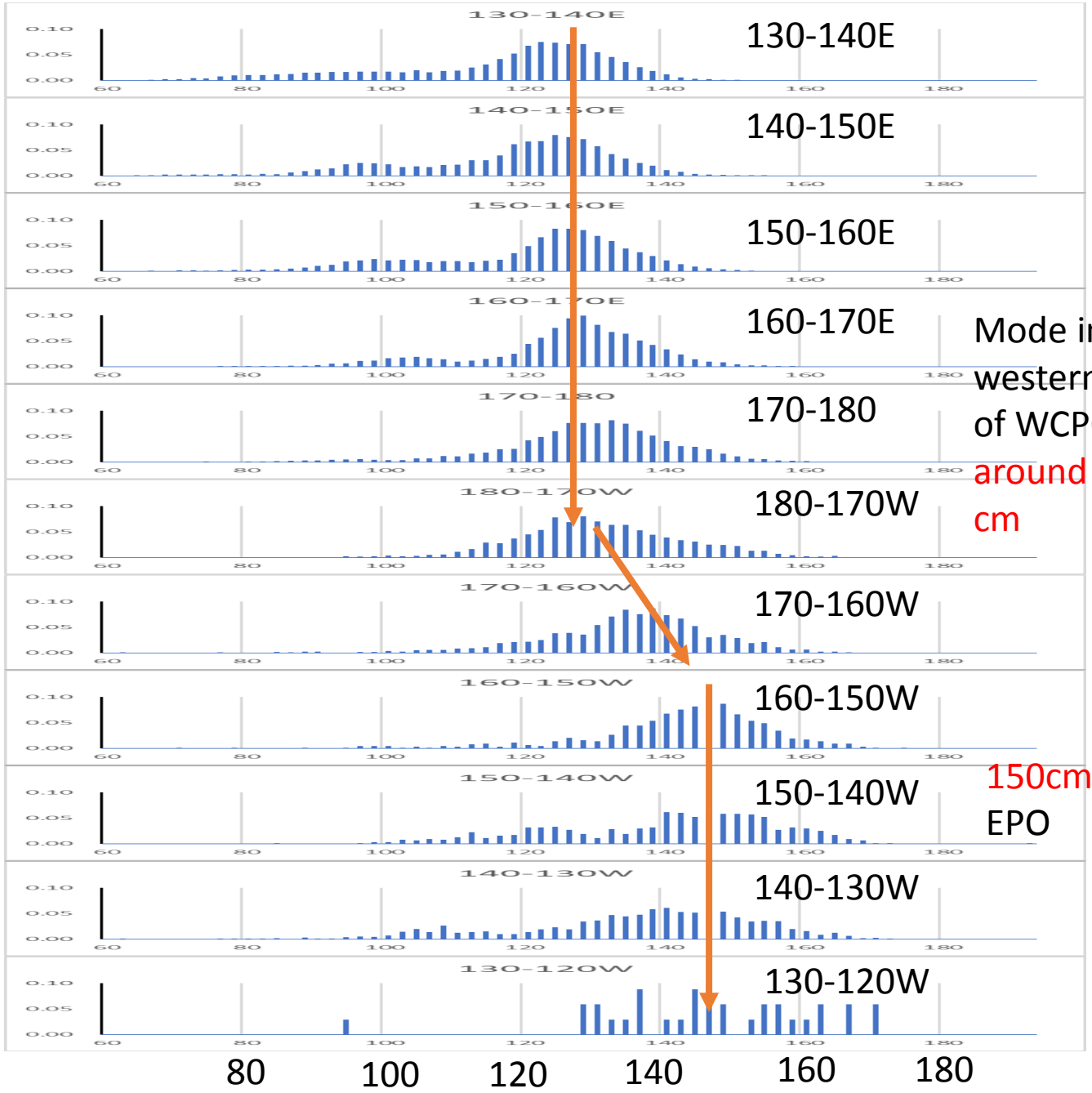
Yukinawa (1958) reported gradual 5N to 15N

I tried to reproduce figure 1a of Yukinawa (1958) using current size data-base in my institution.
The number of specimen in Fig 1a of Yukinawa (1958) was larger than the size data-base. If the size data-base is updated after publishing this paper, it could be smaller or equal to the size data-base.

	Total number of fish in the current size data-base	total fish number in Figure 1 a (Yukinawa 1958)
130-140E	12,723	2,028
140-150E	9,082	609
150-160E	11,111	1,836
160-170E	7,864	1,186
170-180	7,509	2,861
180-170W	5,079	7,250
170-160W	1,740	0
160-150W	635	1,124
150-140W	631	720
140-130W	1,633	1,996
130-120W	34	341

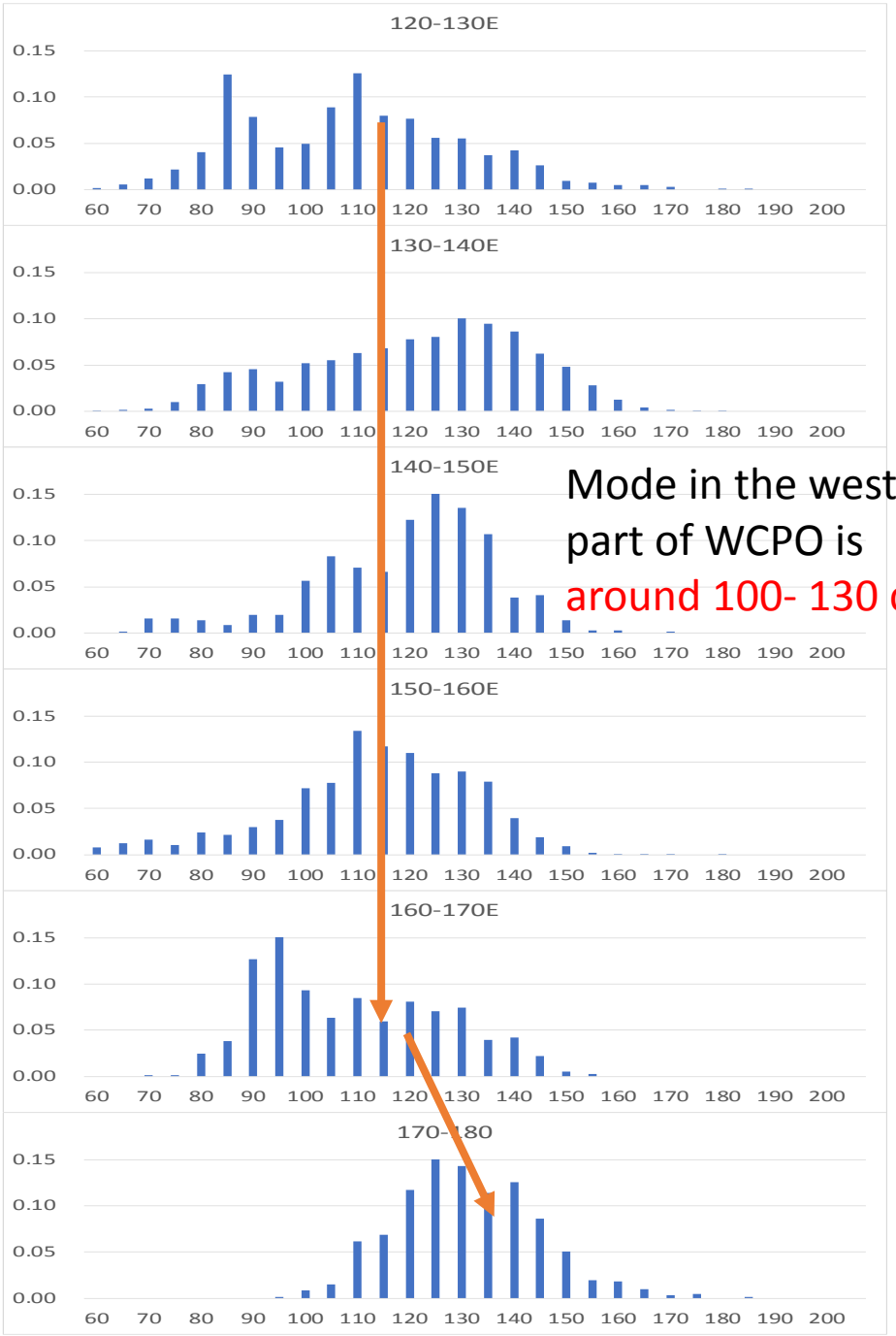
Size distribution in low fishing pressure period (1950-1955)

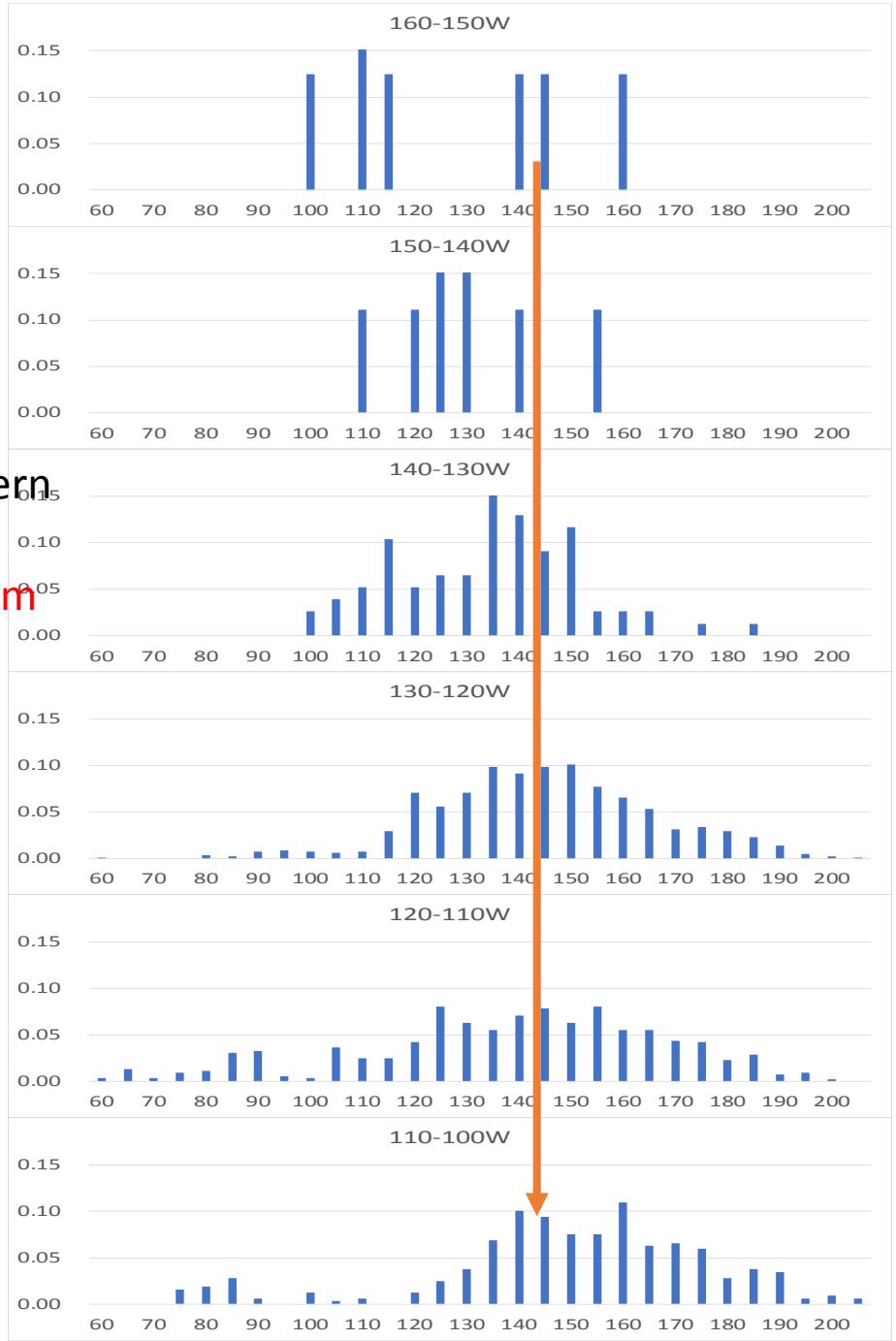
- Nonetheless we can find similar pattern even though using the current size data-base that larger fish tend to be caught in the EPO rather than in the WCPO.
- In addition, the fishing position in our data-base from 1950 to 1955 is stored in 5 x 10 degrees (latitude x longitude) resolution while the latitude in the figure 1a was from 6N to 12N. So I use size data from 5N to 15N of the current data-base to compare the figure.



Mode in the western part of WCPO is around 130 cm

150cm for EPO





Mode in the western part of WCPO is around 100- 130 cm

Size distribution in recent (2010s) 5N-15N

Mode of EPO is around 140 – 150 cm