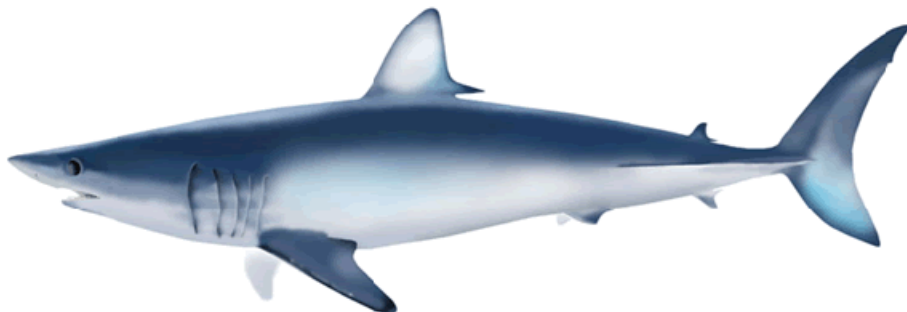


Blue shark catch of Japanese surface longliners based on Kesenuma fishing port

Kotaro Yokawa and Ai Kimoto

Email: National Research Institute of Far Seas Fisheries, JAPAN
5-7-1, Orido Shimizu-ku Shizuoka 424-8633 JAPAN

Email: yokawa@affrc.go.jp



Intoroduction

National research institute of far seas fisheries (NRIFSF) have been collecting skipper's note of Japanese surface longliners based on Kesennuma fishing port since the begginig of the 2000s, primary to grasp the situation of their operation as well as to compare their catch and effort data to oceanographic condition as it contains detailed information about gear setting and retriving. In 2007, NRIFSF requested Japanese surface longliners to add the information of blue shark. In this study, information of blue shark in the skipper's note is summarized to see how much part of their catch are retained.

Materials and Methods

Skipper's not were compiled, error check and digitized by NRIFSF. It contained retained and dumped number of blue shark in addition to the setting and retrieving time and locality. Though the collection of blue shark information started in 2007, data for 2007 were not used for this study as they are data of the trial period. Data of skipper's note of the cruise without information of blue shark is also excluded from the analysis. In the period between January and February 2010, one scientific observer joins to one cruise of Shoryo-maru no. 7, member of Japanese surface longline fleet based on Kesennuma fishing port. During that cruise, observer monitored about 80 % of hooks retrieved and collected information of blue shark. Information includes number of blue shark caught, fate of blue shark, sex and precaudal length, as well as condition of blue shark at the time of retrieving. Information of condition of fish has four categories, dead, unknown, alive active, and alive weakened. Those information taken by the observer were directory compared with the ones by the skipper.

Results and discussions

The number of data (equals to the number of operation) of skipper's note with blue shark information were more than 2,000 during 2008 -2010, but decreased to 920 in 2011 due to fact that most of longliners stopped their operation for more than half of the year by the damage of earthquake (Table 1). The ratio of discarded/released blue shark were less than 1 % in 2008 and 2009, but increased to 2.6 % in 2010 and 3.3 % in 2011. Relatively higher dumped ratio of blue shark in 2010 might be due to the very high catch ratio of extra small sized blue shark (<100 cm PCL) during May to July (Shiozaki et. al., 2012), as well as good catch of swordfish during winter. Crews would not be able to process too many catch of small blue shark, and also crews may sometimes ignore blue shark catch when many swordfishes are caught. The high dumping ratio in 2011 is due to the fact that most of sudden drop of market price of blue shark and the fact that part of vessels changed their target species from shark to billfishes and tunas after the lost of shark processing factories in Kesennuma city by Tsunami attack in March 2011. Thus, the value in 2011 cannot be a reference of dumping ratio of other years.

The ratio of dumped blue shark during April – July, when Takahashi et. al., compared catch rate of commercial and research surface longline operation, decreased from the annual values (Table 1), and this is supposed to be the fact that ratio of blue shark directed sets increased in May as no apparent different in the operating locations are recognized between year around data and May to July data (Fig. 1).

The comparison of dumping ratio by skipper and observer indicates the fact that there are some 20 or 30 % of misreporting of dumping by skipper (Table 1). Even though this fact is taken into account, the dumping ratios of blue shark stayed in rather low values during the period analyzed,

and these values seems to have rather limited effect on the standardization of CPUE.

The observer also reported that about 80 % of dumped blue sharks were alive and seemed to be good condition (Table 2). Also, the size of dumped blue sharks is limited to the smallest parts of the catch (Fig. 2). This indicates the fact that Japanese surface longliners sometime tried to release small, low value and actively alive blue sharks.

The analysis of data reported by skippers and observers suggesting that Japanese surface longliners would discard/release some 0.2 – 4 % of blue shark in number, but taking into the fact that dumped blue shark monitored by the observer is limited to the smallest parts of the catch, the effect of blue shark dumping on the total catch should be much lower than these values. Thus the dumping by Japanese surface longliners is supposed to be negligible level at least in the process of total removal estimation.

References

- Shiozaki, K., M. Taguchi and K. Yokawa (2012) Recent catch pattern of blue shark by Japanese offshore surface longliners in the northwest Pacific. ISC/12/SHARKWG-1/XX (WP submitted to this meeting). 16p.
- Takahashi, N., Y. Hiraoka, A. Kimoto, K. Yokawa and M. Kanaiwa (2012) Comparison of CPUEs of Blue Shark Reported by Logbook of Japanese Commercial Longliners with Japanese Research and Training Longline Data. ISC/12/SHARKWG-1/XX (WP submitted to this meeting). 18p.

Table 1. The summary of blue shark information of blue shark caught by Japanese surface longliners in the period between 2008 and 2011.

a) All months

	2008	2009	2010	2011
Number of operations	5,012	4,080	3,877	1,842
Available data	2,154	3,385	2,733	920
Number of operations with discard	17	51	107	43
Percentage of available data	43.0%	83.0%	70.5%	49.9%
All blue shark catch in number	280,433	449,804	350,222	93,595
All blue shark discard in number	313	1,765	8,990	3,097
Percentage of discard in catch	0.1%	0.4%	2.6%	3.3%

b) April-July

	2008	2009	2010	2011
Number of operations	1,825	1,256	1,317	347
Available data	852	1060	1060	172
Number of operations with discard	3	11	30	1
Percentage of available data	46.7%	84.4%	80.5%	49.6%
Percentage of Apr-July among all operations	36.4%	30.8%	34.0%	18.8%
All blue shark catch in number	149,735	258,485	183,289	22,765
All blue shark discard in number	11	843	1,371	250
Percentage of discard in catch	0.0%	0.3%	0.7%	1.1%

Table 2. Comparison of blue shark information taken by skipper and observer of Shoryo-maru no. 7 during her cruise of January – February 2010.

	Skippers note	observer report
retained	2711	2305
released/ discarded	60	73
ratio of released/discard	2%	3%
amount of effort	103728	85110
coverage	100%	82%

Table 3. Condition of blue shark discarded/released by Shoryo-maru no. 7 during her cruise of January – February 2010. Data is collected by on-board observer.

Condition	number	ratio (%)
dead	5	5
unknown	2	2
alive active	58	79%
alive weakened	8	9
total	73	100

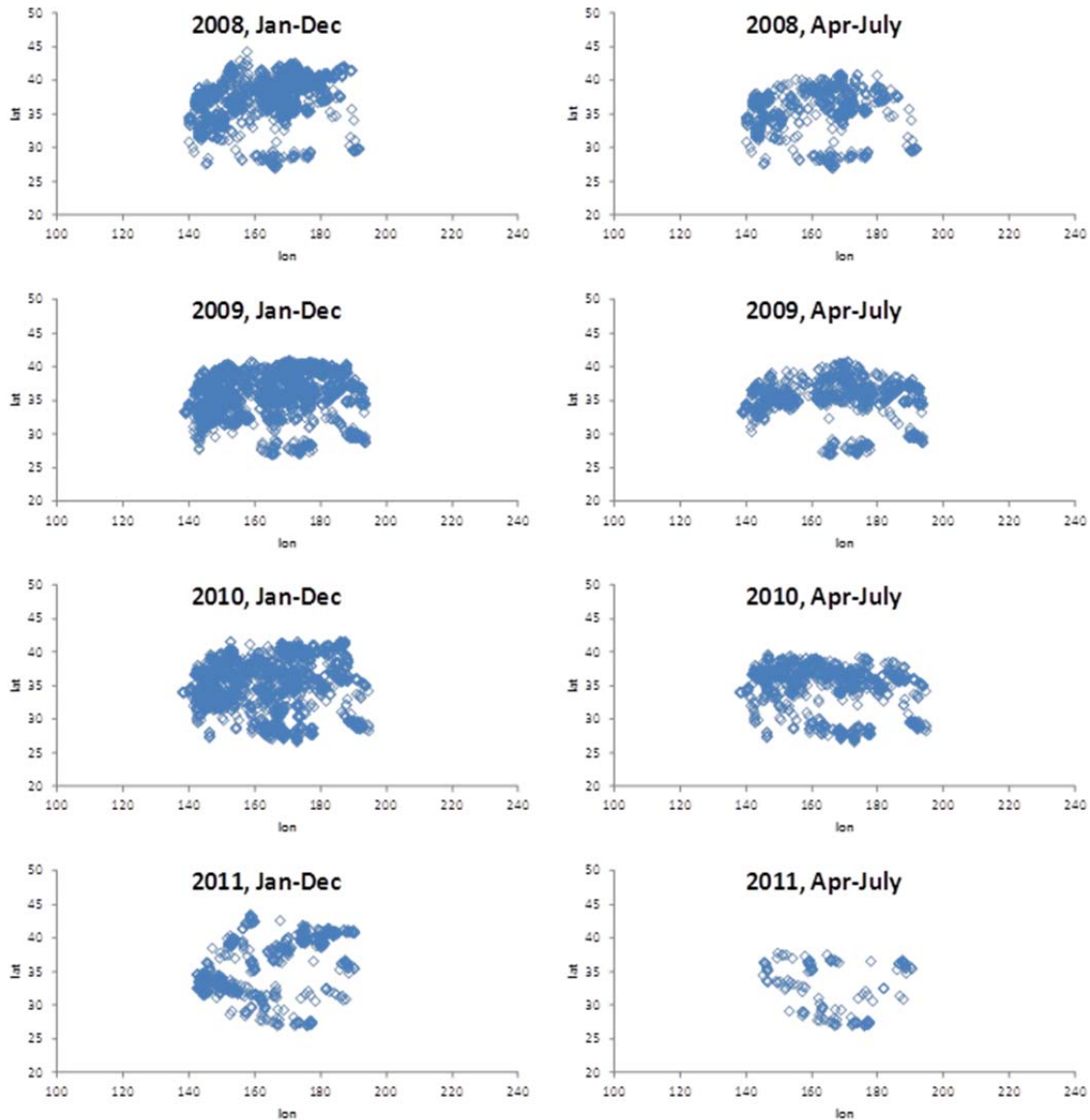


Fig. 1. Location of each operation of Japanese surface longliners based on Kesenuma fishing port in the period of 2008 - 2010, all available data (left column), and available data between April and July (right column).

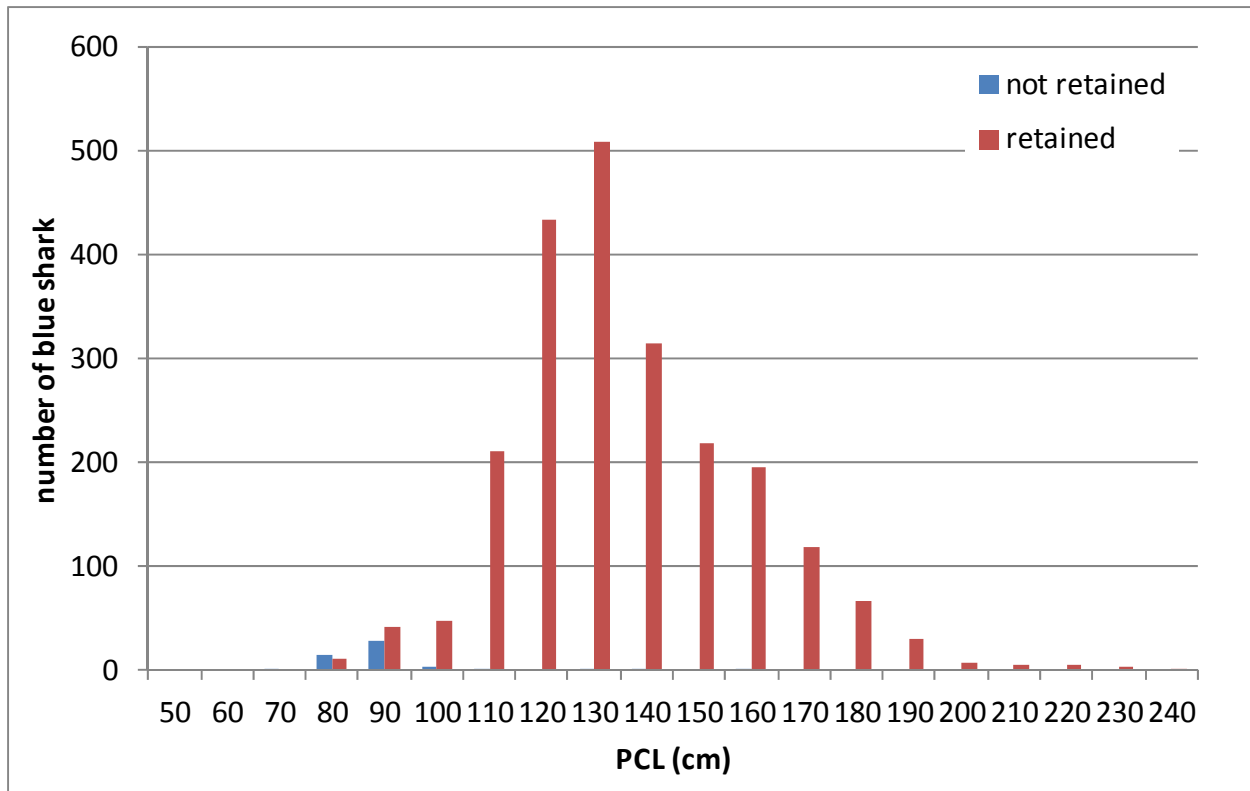


Fig. 2. Length frequency of blue shark retained (red bar) and released/discarded by during her cruise of January – February 2010. Data were collected by the on-board observer.