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# National report of the European Union to the 2013 SPRFMO Science Committee.

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## 1 Introduction

After a year of complete absence of EU trawlers from the South Pacific, one vessel returned to the area in 2013. This was the Lithuanian flagged KL 855 "Margiris" which arrived from Australia, after having crossed the whole of the southern Pacific on its way to the fishing grounds. The Margiris started to fish by the end of April, and it was still in the area at the time of writing of this report (September 2013). This report presents the results of fishing operations and observer data for 2013 that had been received at that time.

Although the results of the Margiris in 2013 are still preliminary, it is interesting to consider these data since they probably represent one of the few pieces of information on the development of the jack mackerel stock in the open Pacific in 2013.

Because of the low fishing effort in 2013, coverage by scientific observers was very limited. SPRFMO sampling requirements specify that a minimum of 10% of all hauls should be sampled by scientific observers. After the first observer had been on board from 7 April – 26 May, the ship owner considered that he had fulfilled his obligations with respect to the 10% observer coverage. Hence no

scientific observers were deployed for the rest of the season. Fortunately the crew of the vessel continued to take length measurements of the catch after the departure of the observer. In this way, the evolution of the mean length of the fish could be followed until September.

## 2 A short overview of the fishery by EU trawlers in the southern Pacific

The fishery for jack mackerel by the European Union (EU) started in 2005 by a single vessel working for 3 months in the second half of the year. The next year, the same vessel returned and worked for the whole season (March – October). Following the positive results of this season, the number of vessels increased to six in the following three years (2007 – 2009). All these vessels belonged to the Pelagic Freezertrawler Association (PFA), a consortium of European pelagic ship owners based in the Netherlands. In addition to the PFA vessels, some vessels from a Polish ship owners started to work in the area from 2009 onwards.

Starting from 2010, the number of vessels was reduced as a result of declining catches. The number of EU vessels by year and by country is presented in Table 1.

year	EU countries involved and number of vessels
2005	Netherlands (1)
2006	Netherlands (1)
2007	Germany (3), Lithuania (1), Netherlands (2)
2008	Germany (3), Lithuania (1), Netherlands (2)
2009	Germany (3), Poland (3), Lithuania (1), Netherlands (2)
2010	Germany (3), Poland (3), Lithuania (1), Netherlands (1)
2011	Germany (1), Netherlands (1), Poland (1)
2013	Lithuania (1)

Table 1. EU pelagic trawlers in the Pacific in 2005 – 2013.

The vessels involved in this fishery are large pelagic trawlers, operating pelagic trawls that are fished mainly during the night. The vessels work in the international waters outside the Chilean EEZ. Fishing operations extend in the open Pacific to about 110°W.

Over the period 2008-2011, there was a progressive shortening of the fishing season. In 2010, catches sharply declined in comparison to the previous year, and in 2011 the fishery was a complete failure. In 2012 not a single EU vessel went to the Pacific. In 2013 one vessel returned to the Pacific, but catches were very small.

## 3 Catch, effort and CPUE in the PFA fleet

### 3.1.1 Catches and catch composition

The fishery by PFA vessels in the Pacific is aimed at jack mackerel (*Trachurus murphyi*). Other species make up only a small fraction of the total catch, as is shown in Table 2.

year	total catch in tons	species composition in percentages			
		<i>Trachurus murphyi</i>	<i>Scomber japonicus</i>	<i>Brama australis</i>	other species
2009	91336	95.3	4.3	0.4	0.0
2010	34083	97.2	1.9	0.6	0.3
2011	1810	98.3	0.2	1.3	0.2
2013	7029	98.3	0.4	0.5	0.8

Table 2. Total catches and species composition of PFA fleet in 2009 – 2013. Based on landing data provided by ship owners (2005-2011) and trawl station lists obtained directly from the vessel (2013). Data for 2013 are still incomplete.

The species composition of the catch in 2013 was comparable to that in 2011, with a very strong dominance of jack mackerel (*Trachurus murphyi*). The Pacific bream (*Brama australis*) that occupied the second place in 2011, was found in lower numbers in 2013 .

Over the period 2005 – 2013, catches declined sharply, and there was a progressive shortening of the fishing season (Figure 1)

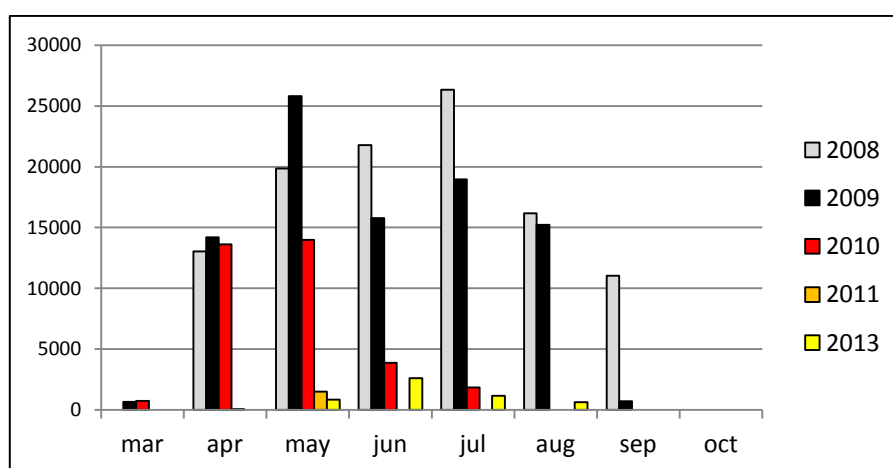


Figure 1. Monthly catches of jack mackerel by PFA vessels in 2005 - 2013. Data for 2013 based on catches reported by vessel.

### 3.1.2 Effort and catch per unit of effort (cpue)

The development of the cpue for jack mackerel in the PFA fleet is presented in Table 3. The figures show the decline in cpue since the first year in which the fishery operated during the whole season (2006). In 2013 the cpue was slightly higher than in 2011, but still very low in comparison to earlier years.

year	number of fishing days	catch jack mackerel PFA fleet in tons	catch per day in tons
2005	44	6187	141
2006	109	33766	310
2007	401	123523	308
2008	423	108174	256
2009	436	91336	209
2010	274	34082	124
2011	32	1603	57
2013	65	5276	81

Table 3. Catch and effort in the PFA fleet. Values with for 2013 are based on trawl station lists provided by the vessels.

Figure 2 illustrates the progressive shortening of the fishing season, and the concomitant decrease in cpue over the years 2007 – 2011.

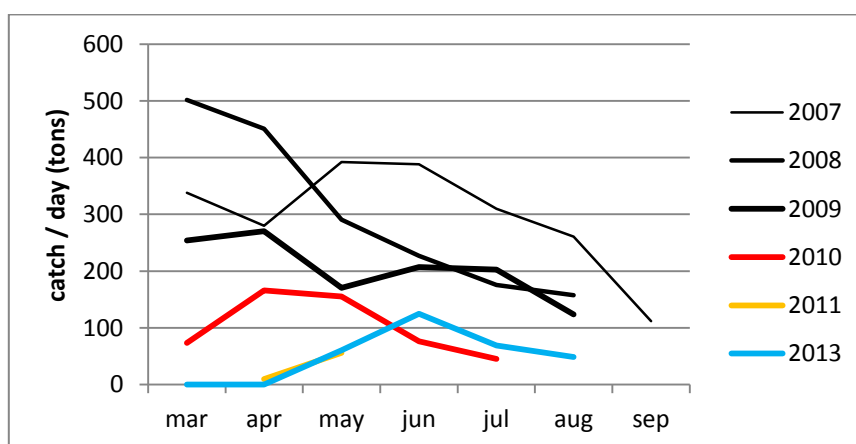


Figure 2. Monthly CPUE of jack mackerel in the PFA fleet in 2013 compared to previous years

#### 4 Fisheries data collection and research activities in the PFA fleet

Two independent programs of data collection were carried out in 2013: the collection of haul-by-haul information directly from the vessels, and an observer program aimed at obtaining detailed biological information on catches and discards. Both programs were organized by the Dutch consultant agency CMR. Funding was provided by the Dutch ship owners association PFA.

The details of these programs are briefly presented below.

#### 4.1 Collection of haul-by-haul information from the vessels in the PFA fleet

Trawlers are requested to provide detailed information for each individual haul. A simple spreadsheet is used to record the information at sea. The information requested in this spreadsheet corresponded to the data demands of the SPRFMO Data and Information Working Group.

The size of the individual catches is estimated by visual inspection of the amount of fish in the net or in the tanks into which the catch is pumped. Usually, the captains tend to under-estimate the amount of catch at first sight. As a result, the sum of individual catches provided by the captains is often lower than the landing data for the entire trip provide by the ship owner. However, no attempt is made to correct the tow-by-tow information afterwards, and the estimates for individual catches are the figures provided directly by the captains.

The tow-by tow information from individual vessels provides a picture of the geographical distribution of the fishery. The results of the fishery in 2013 are compared to previous years in Figure 3a-d. Since there was only one PFA vessel in the Pacific in 2013, the results in terms of spatial distribution are limited. It is interesting to note though, that the fishery did not shift westward in the course of the season as it did in previous years, but remained just outside the Chilean EEZ throughout the season. The vessel searched for a while further to the west, together with some non-EU vessels, but there were no signs of any fish beyond 82°W. Also during its voyage from Australia to the eastern South Pacific in April, the vessel did not see any traces of fish in the western area.

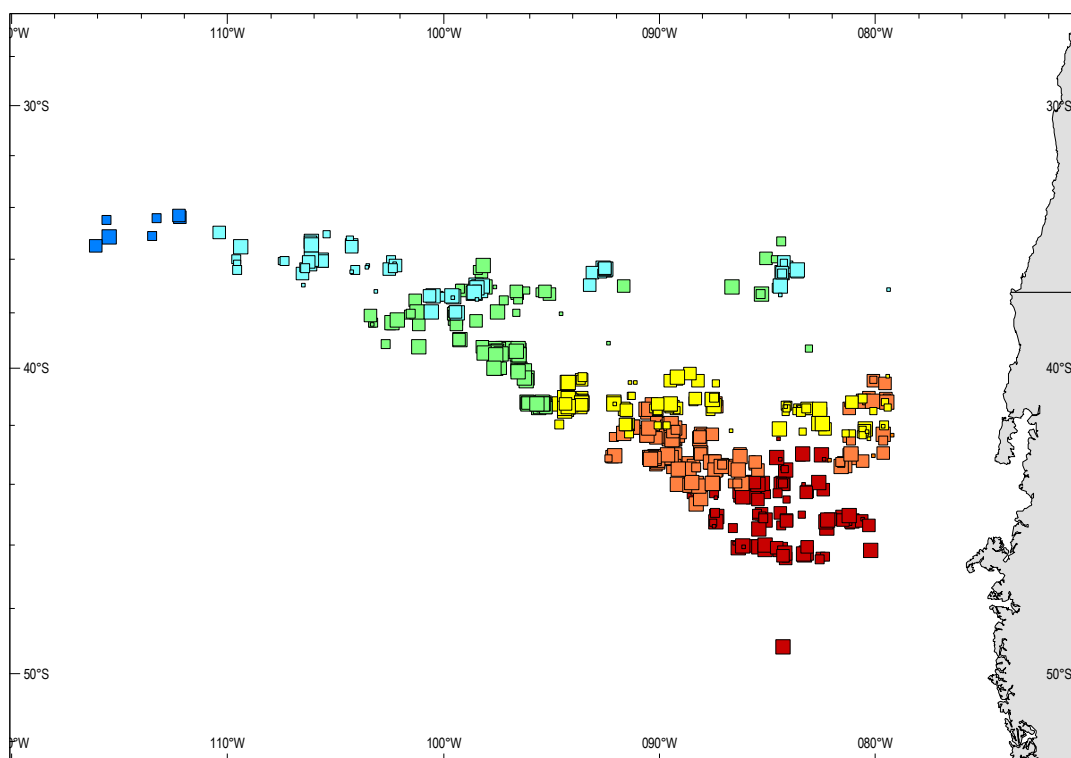


Figure 3a. Catch distribution by month of the EU fleet in **2009**. Red = April, orange = May, yellow = June, green = July, light blue = August, dark blue = September, purple = October. Size of squares is proportional to catches. Positions may be inaccurate due to errors in data transmission and analysis.

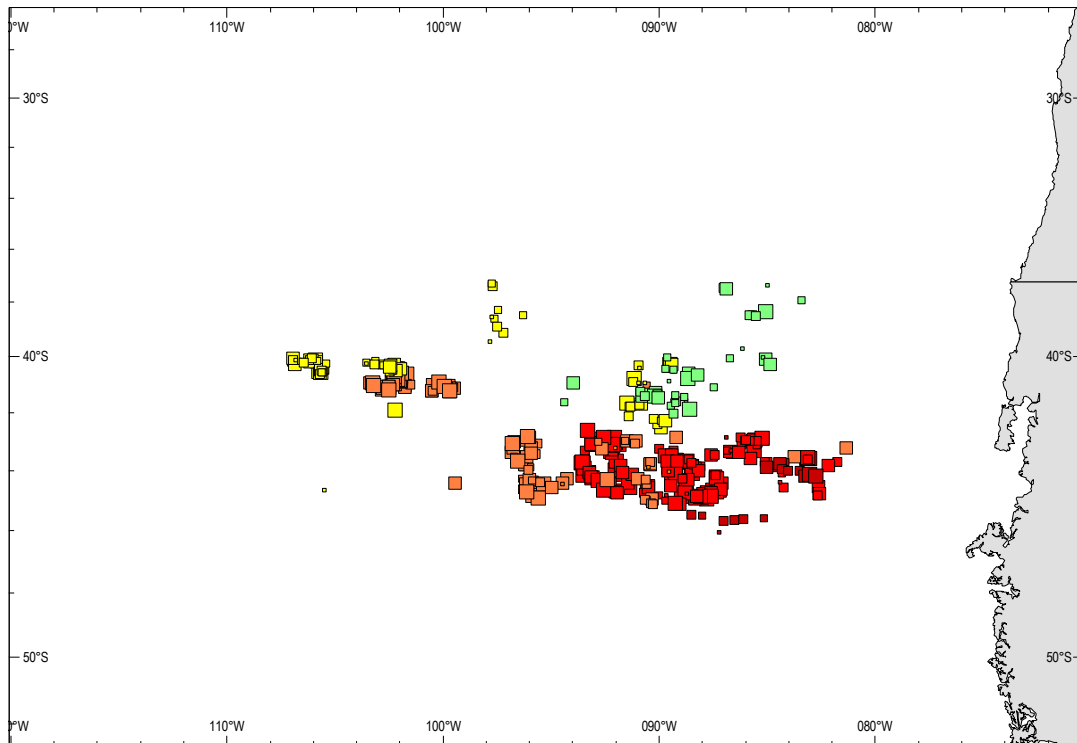


Figure 3b. Catch distribution by month of the PFA fleet in **2010**. Colour code is the same as in Figure 3a.

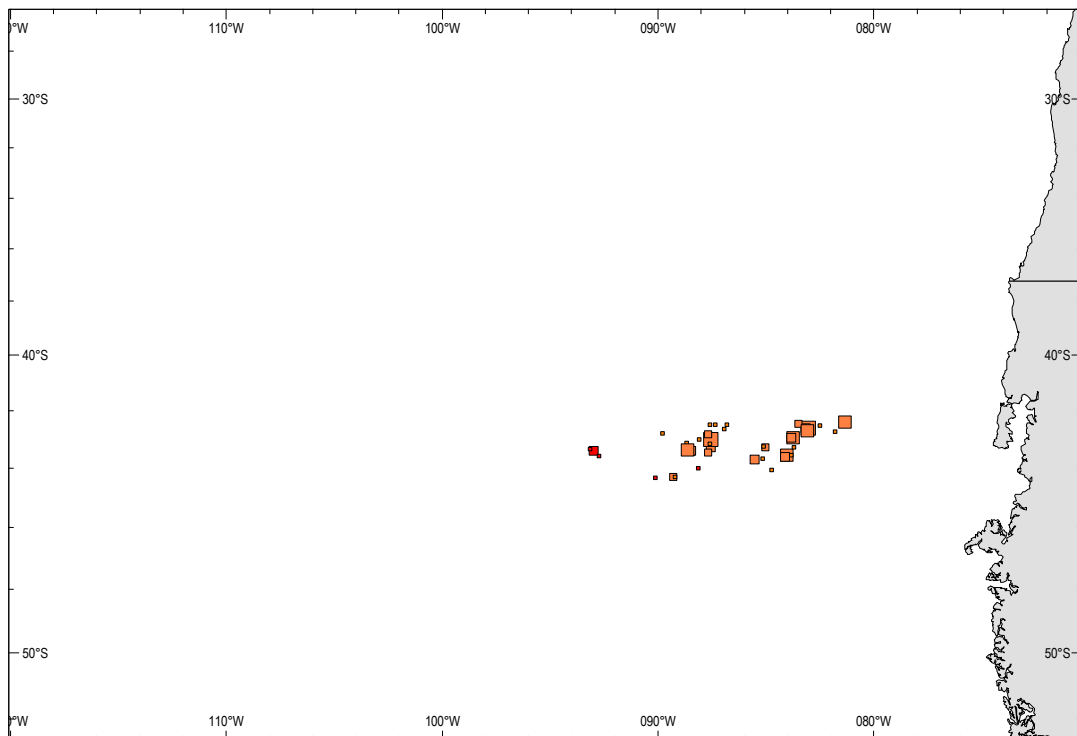


Figure 3c. Catch distribution by month of the PFA fleet in **2011**. Colour code is the same as in Figure 3a.

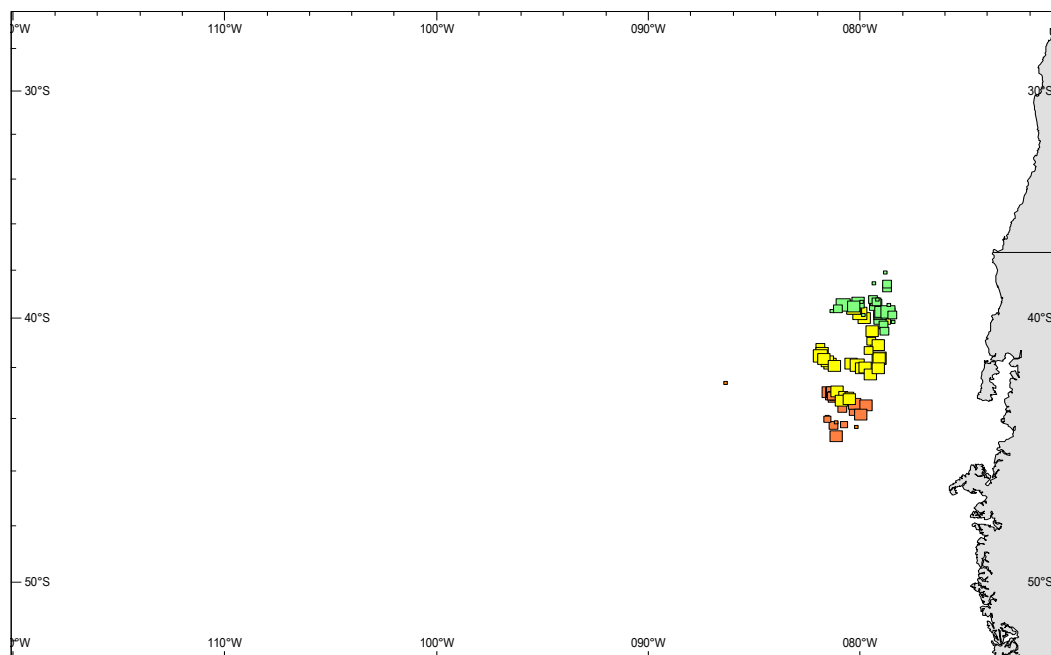


Figure 3d. Catch distribution by month of the PFA fleet in 2013. Colour code is the same as in Figure 3a.

## 4.2 Data collection by observers on the PFA fleet

In accordance with the recommendation of the SPRFMO Data and Information Working Group, this program attempts to obtain at least 10% coverage of all hauls made by the fleet. For this purpose, one observer worked on board the "Margiris" in April-May. After he left the ship on the 26<sup>th</sup> of May, the crew continued to take length measurements of jack mackerel.

year	period	schip	observer	days with observations
2013	7 April – 26 May	KL 855 Margiris	Co de Klerk	16

Table 4. Observer mission in 2013

The observer collected data on species composition of catches, length composition, and biological characteristics such as sex and maturity stage, food composition, stomach fullness and fat content. In addition he monitored discards and incidental by-catches of large species.

## 4.3 Biological sampling of catches by the PFA fleet

Biological sampling was conducted on the main species taken in the fishery. These included *Trachurus murphyi*, *Scomber japonicus* and *Brama australis*. In this report, only length data for jack mackerel (*T. murphyi*) are presented.



#### 4.3.1 Sampling of jack mackerel

Like in 2011, the number of length measurements by the observer (2727) was low, due to the limited time he spent on board and also the low catches of jack mackerel. After the observer left the ship in May, the crew measured another 1870 jack mackerel in June – August.

year	number of jack mackerel measured
2008	28 250
2009	15 744
2010	10 540
2011	2 194
2013	2 727

Table 5. Number of jack mackerel measured by scientific observers

A comparison with the length distributions in previous years (Figure 4) shows that the cohort born in 2007 has now become the main component of the catch. These fish had a modal size of 35 cm (fork length) in 2013. The older fish that used to dominate the catches until 2011 have now largely disappeared. The length distribution for 2013 also shows a small signs of younger year-classes with modal lengths at 19 and 27 cm. However, these year-classes are not comparable in abundance with year-class 2007 when it first showed up in 2010.

#### 4.3.2 Observations on other species

Table 6 presents the 10 most abundant species in the catches that were sampled by observers in 2011 and 2013. In 2013, the fishery was again extremely mono-specific, with 98% of the catch consisting of jack mackerel. The second place held by *Brama brama* in 2011 was now taken over by the Black Fathead (*Cubiceps baxteri*). The chub mackerel (*Scomber japonicus*), which was fairly abundant prior to 2011, remained scarce as in 2011.

10 principal species in catch **2011**

species	weight in catch	%
Trachurus murphyi	830921	98.259
Brama australis	10826	1.280
Scomber japonicus	1801	0.213
Allothunnus fallai	1598	0.189
Tilapiokaras ssp	251	0.030
Cubiceps baxteri	86	0.010
Schedophilus huttoni	61	0.007
Centrolophus niger	39	0.005
Thunnus albacares	30	0.004
Tetragonurus cuvieri	10	0.001

10 principal species in catch **2013**

species	weight in catch	%
Trachurus murphyi	892903	98.3302
Cubiceps baxteri	5413	0.5961
Brama australis	4727	0.5206
Scomber japonicus	3805	0.4190
Allothunnus fallai	557	0.0613
Xiphia gladius	300	0.0330
Myctophideae	126	0.0139
Schedophilus huttoni	109	0.0120
Isurus oxyrinchus	60	0.0066
Thunnus obesus	26	0.0029

Table 6. Species composition (in kg and %) of sampled catches by PFA vessels in 2011 and 2013

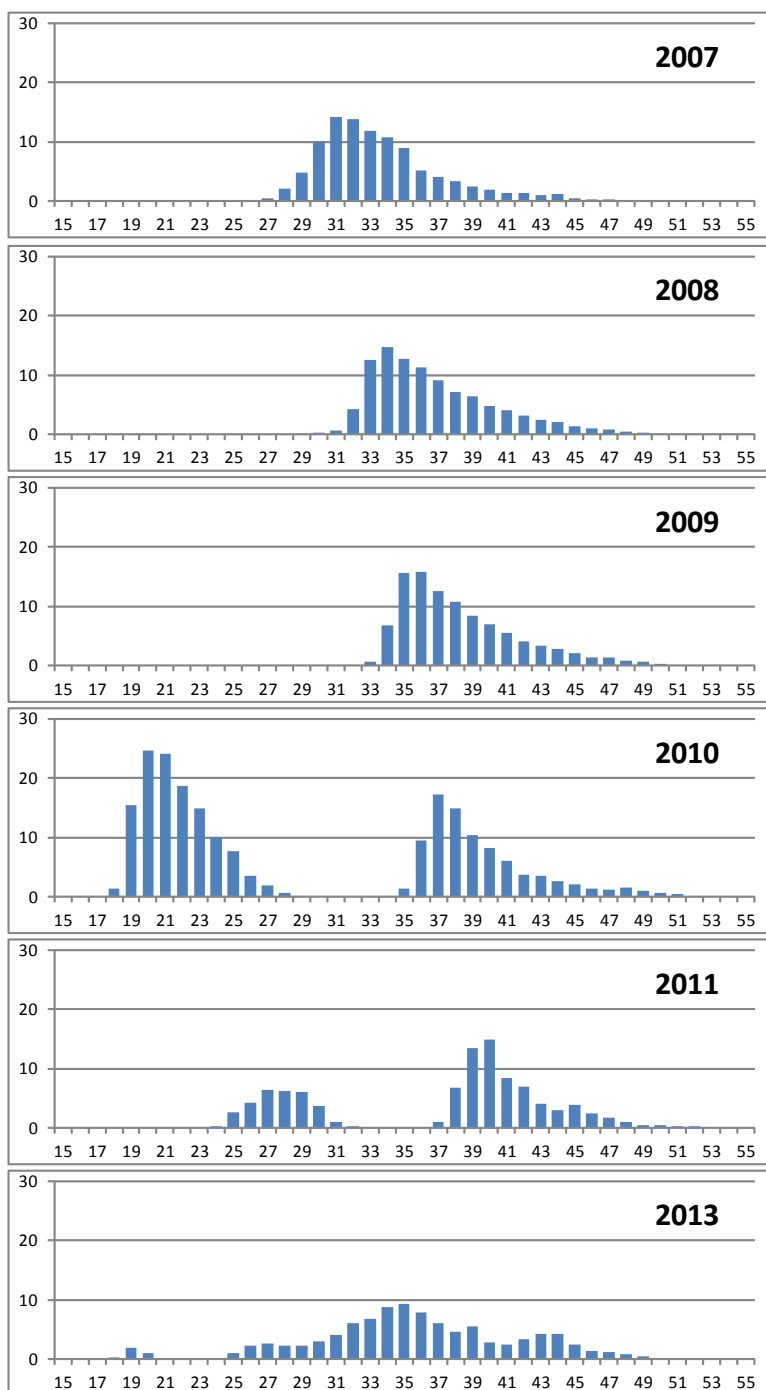


Figure 4. Percentage length composition of jack mackerel in PFA catches in 2007 – 2013. Length measured as in fork length.