

PELAGIC SHARKS IN THE ATLANTIC AND MEDITERRANEAN FRENCH FISHERIES: ANALYSIS OF CATCH STATISTICS

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SUMMARY

*A time series of national commercial landings statistics, logbook data and biological information from sampling commercial and scientific samples are collated to assess the status of five pelagic shark species caught by French domestic fisheries. According to official statistics, average catch levels, for the last five years, for porbeagle (*Lamna nasus*), blue shark (*Prionace glauca*), thresher sharks (*Alopias vulpinus* and *A. superciliosus*) and basking shark (*Cetorhinus maximus*) are approximately 270, 96 t, 7.5 t and less than 1 t, respectively. Nevertheless, it is likely that large numbers of discarded sharks have gone unrecorded. Generally speaking, there is a paucity of biological data available for pelagic shark species caught by domestic fleets.*

RÉSUMÉ

*Les statistiques des ventes et les données des carnets de bord ainsi que les informations biologiques collectées durant des suivis aux débarquements et des campagnes à la mer ont été utilisées pour établir un bilan sur cinq espèces de requins pélagiques capturées par les flottilles nationales. D'après les données officielles, sur les cinq dernières années, les prises de requin-taupe commun (*Lamna nasus*), de requin peau bleue (*Prionace glauca*), de requins-renards (*Alopias vulpinus* et *A. superciliosus*) et de requin-pèlerin (*Cetorhinus maximus*) étaient respectivement de l'ordre de 270 t, 96 t, 7,5 t et de moins d'une tonne. Néanmoins, les quantités rejetées non-négligeables ne sont pas prises en compte. D'une manière générale, il existe peu d'informations biologiques sur les espèces de requins pélagiques pêchées par les flottilles nationales.*

RESUMEN

*Las estadísticas de ventas y los datos de cuadernos de pesca así como la información biológica recopilada durante muestreos de desembarques y de campañas en el mar fueron utilizados para establecer un balance sobre cuatro especies de tiburones pelágicos capturados por flotas nacionales. Según datos oficiales de los cinco últimos años, las capturas de marrajo sardinero (*Lamna nasus*), de tiburón azul (*Prionace glauca*), de tiburones Zorro (*Alopias vulpinus* y *A. superciliosus*) y de pajarón peregrino (*Cetorhinus maximus*) eran aproximadamente de 270 t, 96 t, 7,5 t y menos de una tonelada respectivamente. Sin embargo, las cantidades significativas de descartes no se han tenido en cuenta. De manera general, existe poca información biológica sobre especies de tiburones pelágicos pescados por flotas nacionales.*

KEYWORDS

Pelagic sharks, porbeagle, blue shark, basking shark, thresher sharks, catch statistics, logbooks

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This document reviews the information available on the main pelagic sharks caught as target and non-target species in the Atlantic Ocean and the Mediterranean Sea by French fleets: this report focuses on porbeagle (*Lamna nasus*), blue shark (*Prionace glauca*), basking shark (*Cetorhinus maximus*), and thresher sharks (*Alopias vulpinus* and *A. superciliosus*). Estimates of French commercial landings and bycatch of pelagic sharks were compiled from a variety of sources.

1. Data sources

Two different types of complementary data were used (a) official catch statistics (Système d'information Halieutique de l'IFREMER) and (b) data collected by IFREMER scientists during at-sea observer and port sampling programs:

a) SIH data includes:

- National commercial landing statistics from 1971 to 2007.
- Logbook data from vessels operating in the Atlantic Ocean (vessels greater than 10 m long) from 2002–2007. Data originally derived from logbooks were provided with a variable precision: from ICES rectangle to either ICES division or ICES sub-area. Catches provided by ICES divisions and sub-areas have been reallocated proportionally per gear in all ICES rectangles documented to represent the total catch. Gears were combined into five broad gear types; (1) Longline (including surface, bottom and unclassified longlines); (2) Net (including drifting gillnet, trammels, fish nets), (3) demersal trawl, (4) pelagic trawl and (5) unclassified/other gears. No logbook data are available for the Mediterranean Sea fleets.

b) At-sea observer and port sampling programs includes:

- Biological data on porbeagle (length measurements) collected during landings from 1980 to 1989 (Forest, 2001).
- Biological data collected on blue shark during experimental campaigns carried out in 1997 and 1999 onboard domestic commercial vessels (Caill and Morandau, 1997; Caill-Milly, 2000).
- The National “Observer program at sea”, ObsMER Programme, started to gather information on the shark by-catch species caught by the domestic fisheries since 2003 but only limited data on the size-frequency of pelagic sharks are available. Average size, as well as minimum and maximum sizes, of all pelagic shark species recorded by the National observer program are presented in **Appendix 1**.

2. Porbeagle (*Lamna nasus*)

2.1 Landings

Porbeagle is a target species of a limited domestic longline fleet landing their catches mainly into Les Sables d'Olonne and l'Île d'Yeu harbours which over the last 5 years represent about 57% and 28% respectively of the total catch (**Figure 1**). This species is also a bycatch in several other fisheries (**Table 1**). The landings peaked at 915 t in 1972, then decreased down to about 240 t in 1985-1987, peaked again at 816 t in 1994. Over the last five years, the mean annual catch was around 270 t.

2.2 Catch by gear

Over the last nine years, longline gears have accounted for an estimated 72% of the total porbeagle catch, with nets taking 13% and demersal and pelagic trawls 6% and 4%, respectively (**Table 1**).

2.3 Fishing grounds and catch by area

Maps in **Appendix 2** show the distribution of the catch by statistical rectangle by year and by gear type for the period 2002–2007, with the catches primarily on the continental slope in Division VIII d (32%) and on the continental shelf in Divisions VIIj (23%) and VIIg (20%) (**Table 2**).

2.4 Drifting longline catch by area

Data provided by boats using drifting longline as the main gear were extracted from the database. Tables in **Appendix 3** show the number of occurrences of reported catches by statistical rectangle and the catch allocated from boats using drifting longline. The first table gives somehow a picture of the fishing effort of this limited “fleet”. Concerning the catch data table, outliers (Catch data lower than 7 kg) were removed. Nevertheless, it does not seem realistic to cross both information as a lot of uncertainties remains on the reliability of the information. The same information combined by division in **Table 3** shows the percentage of catch by explored areas by year.

2.5 Length measurements

Length measurements recorded at La Rochelle market auction from 1985–1990 showed that landed porbeagle (*Lamna nasus*) averaged 48 kg with a peak reached in July (**Figure 2**). Unfortunately these length measurements are not associated to fishing locations, which hampers further analyses.

2.6 On-going program

In collaboration with the fishing industry of l’Ile d’Yeu, the main French porbeagle fishery, APECS (Association pour l’Etude et la Conservation des Sélaciens), the French representative of the European Elasmobranch Association (EEA) implemented an observer program in March 2008 aiming at gathering information on the main biological parameters of this species. A long time series of logbook data should also be reconstructed in order to analyse the trend of the CPUE per area. This program « Etude de la Pêche Palangrière au Requin Taupe de l’Ile d’Yeu », should bring new insights on this fishery and on the biology of porbeagle of eastern Atlantic porbeagle population.

3. Blue shark (*Prionace glauca*)

3.1 Landings

There is no directed blue shark fishery in France and this species is a bycatch in several fisheries. Highest catches were recorded in the 1990’s in the Atlantic Ocean with a peak of 338 t in 1994 (**Figure 3**). There is no information available for this species in French Mediterranean fisheries.

3.2 Catch by gear

Over the last three years (2005–2007), blue shark was caught mainly by longlines (72%), with proportionally smaller catches from nets (22%). A contrasting pattern was observed in previous years (**Table 4**), with this species caught mainly by nets (53%) and less so by longline (38%).

3.3 Fishing grounds and catch by area

Maps in **Appendix 4** show the distribution of the catch by statistical rectangle by year and by gear type for the period 2002–2007, with catches primarily from the continental shelf in Division VIIIa (38%) and VIIIb (17%) and to a lesser extent from Divisions VIIId (10%) and VIIg (10%) (**Table 5**).

3.4 Length measurements

Fork length distribution of blue sharks caught during experimental fishing trials (Caill and Morandeau, 1997) performed between July and September 1997 showed a size mode at 1.30–1.60 FL (**Figure 4**).

Caill (1999) showed that the size of blue sharks caught between August and September 1999 by surface longline (operating at depths of 5–20 m) ranged from 90 to 172 cm fork length (n=29), 67 % of the individuals caught were female (**Figure 5**).

Figure 6 shows the size distribution by sex of blue shark caught on regular longline.

4. Thresher sharks (*Alopias spp.*)

Two species of thresher sharks occur in the ICES area: common thresher *Alopias vulpinus* and bigeye thresher *A. superciliosus*, but all individuals are recorded under thresher sharks.

4.1 Landings

Thresher sharks are a by-catch of several fisheries. According to national statistics, thresher sharks catches fluctuated between 10 and 20 t per year during the 90's before abnormally high peaks of more than 100 t in 2000 and 2001 in the Atlantic Ocean. These values have been removed temporarily from the data set. In the Mediterranean Sea, catches have decreased slightly since 1996 but considering the trends for both areas, catch statistics for these species seem highly uncertain (**Figure 7**).

4.2 Catch by gear

Over the last 6 years (2002-2007), Thresher sharks have been caught mainly by pelagic trawls (48%) and longline gears (25%) and to a lesser extent by nets (8%) (**Table 6**).

4.3 Fishing grounds and catch by area

Maps in **Appendix 5** show the distribution of the catch by statistical rectangle by year and by gear type for the period 2002–2007, with catch primarily on the continental shelf in sub-division VIIIa (38%) and VIIIb (17%) and on the less extend in sub-divisions VIIId (10%) and VIIg (10%).

5. Basking shark (*Cetorhinus maximus*)

The highest catch of basking shark was recorded in 1999. This species was mainly a by-catch and incidental catch of a few fisheries, mainly by trawl (**Tables 7 and 8**). Since 2007, basking shark has been listed as a 'Prohibited species' on the TAC and quota regulations, and so the landings of bycatch have reduced.

6. Quality of the catch data

The following problems related to the data for the major pelagic sharks have been identified for catch data:

- In many cases, catch data and logbook data are thought uncertain, outliers were deleted before analysis (null values, abnormally individual low catch values).
- Boat's identification number is missing for many records.
- Discrepancies between landing data and logbook data.
- Much shark catch data are not available: there is little information prior to the early 1980s available.
- Landings records probably under-represent the actual catches of sharks because they do not account for discards.
- Lack of accurate effort data that are often missing or not consistent, consequently it is difficult to construct a CPUE time series as possible indicators of stock abundance and/or fishery performance.
- The only information available comes from observer programmes. While such programmes remain one of the most valuable sources information, the low coverage of observer programmes currently restricts assessment of by-catch.
- Lack of precision of exact catch locations in the logbooks.
- Allocation of the catch to inappropriate gear.
- No logbook data are available for French fisheries in the Mediterranean Sea.
- Poor knowledge of the size-frequency for all the fisheries.
- High possibility of mis-identification, especially for thresher sharks, and possibly between mako and porbeagle.
- Few shark size-frequency data are available, and a paucity of other relevant biological data (conversion factors, maturity data, age data...).

References

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- Caill-Milly, 2000. Palangre à thon 1999, Rapport de campagne, Rapport IFREMER 45 p.
- Forest, A., 2001. Fisheries resources not included in quotas in the North East Atlantic: assessment of knowledge and analysis of scenarios of management trends. Contrat IFREMER/MAP – Réf. 99-I1-03-01

Table 1. Porbeagle (*Lamna nasus*) catch (in kg and percentage) by “generic gear”, 1999–2007.

<i>Gear Type</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>
Longline	185,735 77.5%	193,879 60.9%	251,999 81.0%	313,101 78.8%	248,879 82.1%	208,448 72.3%	185,071 74.9%	136,856 67.9%	285,024 89.0%
Net	28,902 12.1%	91,151 28.6%	25,098 8.1%	41,943 10.6%	33,058 10.9%	45,857 15.9%	28,272 11.4%	36,756 18.2%	16,122 5.0%
Trawl (demersal)	13,812 5.8%	19,199 6.0%	23,469 7.5%	13,980 3.5%	12,151 4.0%	18,117 6.3%	15,412 6.2%	16,588 8.2%	15,223 4.8%
Trawl (pelagic)	10,974 4.6%	13,357 4.2%	8,096 2.6%	22,213 5.6%	8,622 2.8%	13,738 4.8%	17,996 7.3%	7,564 3.8%	2,451 0.8%
Unclassified	259 0.1%	624 0.2%	2,283 0.7%	6,306 1.6%	486 0.2%	2,198 0.8%	344 0.1%	3,755 1.9%	1,263 0.4%
Total	239,682	318,210	310,945	397,543	303,195	288,359	247,095	201,518	320,082

Table 2. Catch of Porbeagle (*Lamna nasus*) in kg by ICES Division, 2002–2007.

<i>Divisions (ICES)</i>	2002	2003	2004	2005	2006	2007
IIa	12					118
IVa	396					48
IVb	45			211	214	184
IVc	1,481	1,925	1,019	1,058	611	229
Vb		57		586	175	600
VIa	80	80	25	399	1,049	1,448
VIb		280	348	1,141	1,069	4,044
VIIa	6,005	1,787	4,441	363	5,128	950
VIIb	149	425	804	127	400	235
VIIc	1,285	2,725	1,844	941	1,757	1,219
VIIId	2,920	1,914	4,450	2,075	7,660	1,261
VIIe	41,147	11,875	16,494	16,028	8,227	6,783
VIIIf	1,031	3,902	18,198	9,128	1,514	6,820
VIIIg	94,582	37,928	55,856	49,930	37,048	86,732
VII h	2,165	24,099	23,097	16,065	8,552	1,826
VII j	107,144	119,607	80,874	28,758	50,920	53,616
VIIk	1,723	2,669	2,985	3,691	3,058	3,715
VIIIa	22,982	14,610	10,090	8,707	13,541	18,347
VIIIb	6,819	1,412	1,057	11,047	2,123	1,741
VIII c	512	2,915	313	631	5,509	610
VIIIId	137,522	105,964	85,652	68,965	55,354	156,212
VIIIe		1,000		43		
VIIIb						
Xa	2,970					
XIIa		660				27
Total	430,968	335,834	307,545	219,893	203,906	346,765

Table 3. Catch of Porbeagle (*Lamna nasus*) by drifting longlines in percentage by ICES Division, 2002–2007 and the number of boats involved by year.

<i>Year</i>	<i># boats</i>	<i>VIIa</i>	<i>VIIe</i>	<i>VIIIf</i>	<i>VIIg</i>	<i>VIIh</i>	<i>VIIIa</i>	<i>VIIIb</i>	<i>VIIIc</i>	<i>VIIIId</i>	<i>VIIIe</i>	<i>VIIj</i>
2002	7	2%	0%	0%	31%	0%	5%	0%	0%	42%	0%	20%
2003	8	1%	1%	1%	14%	7%	4%	0%	1%	42%	0%	28%
2004	6	3%	0%	7%	21%	12%	3%	0%	0%	35%	0%	18%
2005	8	0%	0%	6%	35%	4%	3%	0%	0%	46%	0%	6%
2006	6	4%	0%	0%	22%	0%	8%	0%	4%	38%	0%	23%
2007	11	0%	0%	2%	26%	0%	6%	0%	0%	54%	0%	11%

Table 4. Blue shark -*Prionace glauca* catch (in percentage) by “generic gear”, 1999–2007.

<i>Name</i>	1999	2000	2001	2002	2003	2004	2005	2006	2007
Net	27.6%	69.0%	61.2%	39.6%	53.2%	66.1%	32.4%	22.8%	11.3%
Longline	46.9%	24.8%	32.2%	52.3%	40.3%	29.6%	63.3%	68.8%	83.2%
Trawl (pelagic)	20.9%	3.9%	0.1%	3.1%	0.9%	0.1%	1.3%	1.2%	0.2%
Trawl (demersal)	3.4%	2.0%	4.3%	3.8%	5.2%	1.9%	1.6%	2.7%	1.4%
Unclassified	1.2%	0.2%	0.2%	1.3%	0.3%	2.1%	1.4%	4.4%	2.5%
Hand line	0.1%	0.0%	1.9%	0.0%	0.0%	0.1%	0.1%	0.1%	1.4%

Table 5. Catch of Blue shark *Prionace glauca* in Kg by ICES Division, 2002–2007.

<i>Division ICES</i>	2002	2003	2004	2005	2006	2007
IVc						
Vb		40				
VIa		185				
VIIb	90	40				
VIIa	82	336	505		1,571	
VIIc			80		100	
VIIId	138	80				455
VIIe	930	410	423	626	828	693
VIIIf	844	72	52	3,625	927	2,501
VIIg	12,811	8,717	4,080	4,242	10,278	12,320
VIIh	1,548	1,443	1,373	2,428	607	1,006
VIIj	2,609	3,415	977	3,326	3,484	2,264
VIIk	159	35	529	365	6	1,900
VIIIa	11,279	21,738	34,398	54,435	73,498	49,728
VIIIb	11,149	8,635	5,583	27,026	14,663	30,810
VIIIc	18	188	74	380	309	23,631
VIIId	4,038	7,043	3,470	10,784	11,451	16,605
VIIIf			717	1,019	3,061	1,470
VIIIb						
Xa	50	560				670
XIIa	50					
Total	45,795	52,935	52,260	108,254	120,782	144,054

Table 6. Thresher sharks *Alopias sp.* catch (kg an in percentage) by generic gear in Atlantic Ocean, 1999–2007.

<i>Name</i>	1999	2000	2001	2002	2003	2004	2005	2006	2007
Net	5,431 40.8%	102,850 95.7%	108,870 96.7%	264 5.7%	493 12.7%	329 8.8%	816 8.8%	1,038 7.7%	525 5.3%
Longline	1,342 10.1%	2,464 2.3%	1,173 1.0%	858 18.4%	1,234 31.9%	1,623 43.5%	2,209 23.8%	2,019 15.0%	1,555 15.7%
Trawl (pelagic)	4,249 31.9%	1,375 1.3%	2,412 2.1%	2,710 58.0%	1,716 44.4%	858 23.0%	5,287 57.1%	8,910 66.4%	3,830 38.7%
Trawl (demersal)	2,291 17.2%	757 0.7%	78 0.1%	701 15.0%	423 10.9%	923 24.7%	893 9.6%	1,402 10.4%	3,973 40.1%
Unclassified	11 0.0%	51 0.0%	10 0.0%	136 1.3%			60 0.0%	56 0.0%	15 0.1%
Total	13,324	107,497	112,543	4,670	3,865	3,734	9,265	13,424	9,897

Table 7. Total Landing data Atlantic Ocean (sources: SIH).

	1999	2000	2002	2003	2004	2005	2006	2007
Total	4,279	1,053	1,038	707	470	2,911	739	-

Table 8. Basking shark *Cetorhinus maximus* catch (kg an in percentage) by generic gear, 1999–2007.

<i>Gear type</i>	1999	2000	2002	2003	2004	2005	2006	2007
Trawl	96%	31%	90%	-	100%	52%	100%	-
Net	4%	69%	10%		0%	17%	0%	-
Unclassified						31%		

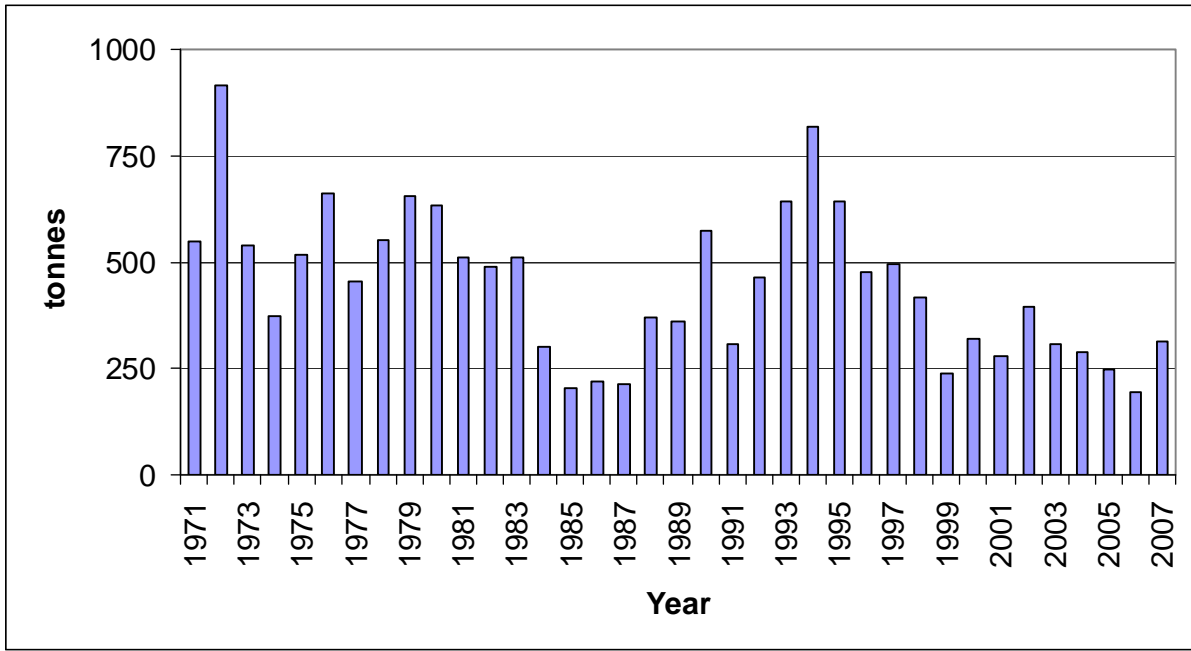


Figure 1. Porbeagle (*Lamna nasus*) catch (t) by year in Atlantic Ocean 1971-2007 (source: SIH).

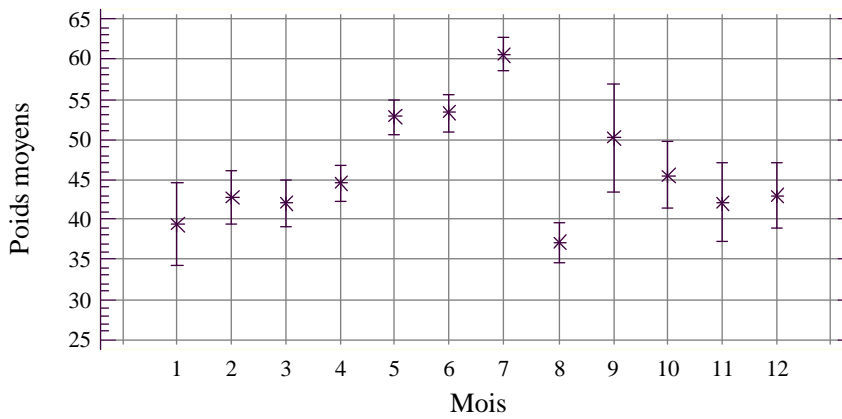


Figure 2. Monthly mean weight of porbeagle landed at La Rochelle auction market from 1985 to 1990 (Forest, 2001).

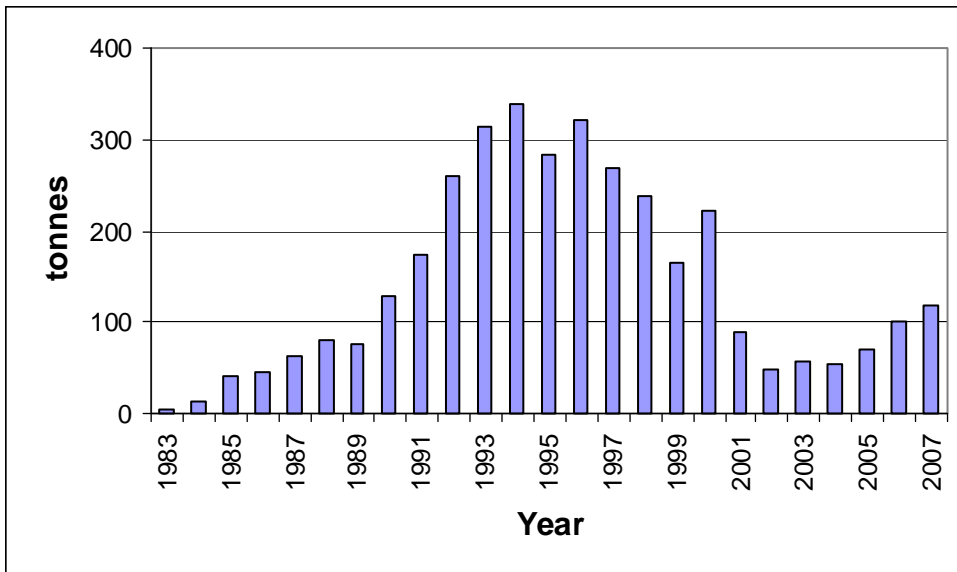


Figure 3. Blue shark *Prionace glauca* catch (t) by year in Atlantic Ocean 1983–2007 (sources: SIH).

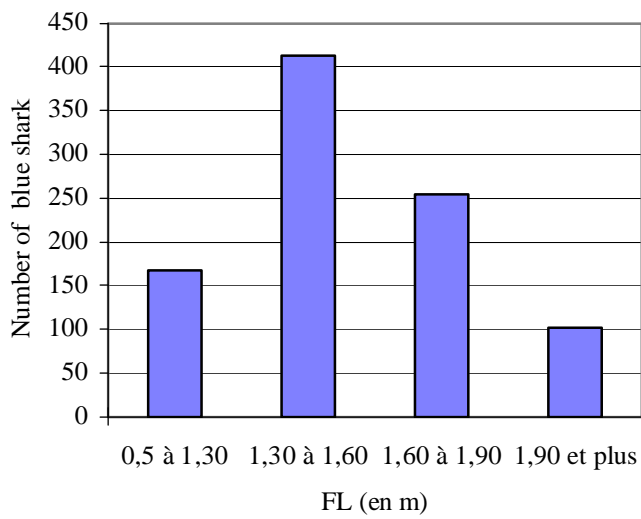


Figure 4. Size distribution of blue sharks caught with longline (n=935) (Source: Caill and Morandeu, 1997).

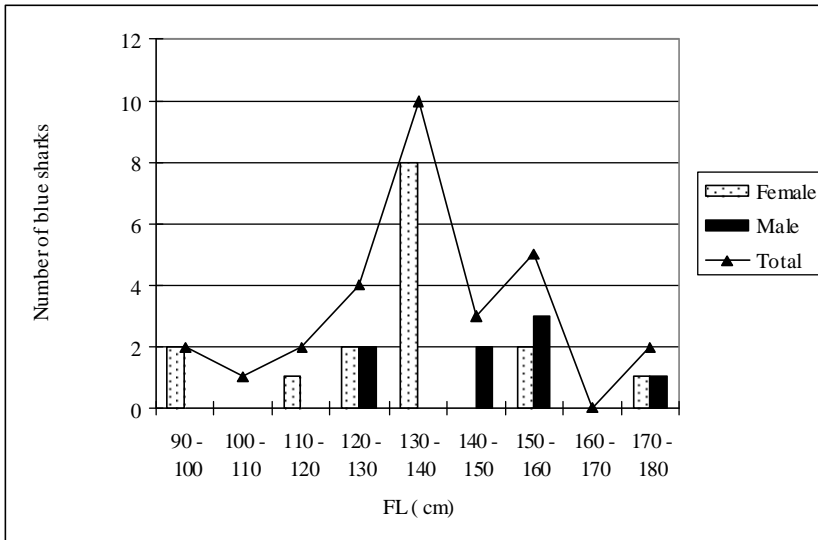


Figure 5. Size distribution by sex of blue shark caught under surface longline operating at a depth ranging from 5-20 m (Source: Caill, 2000).

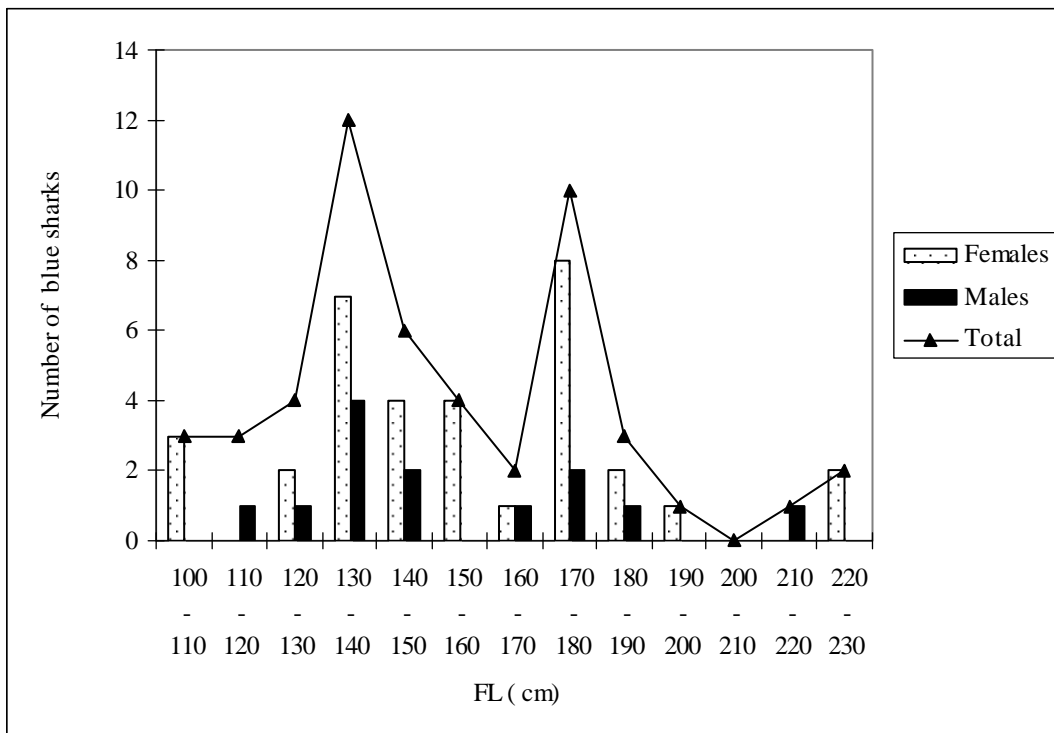


Figure 6. Size distribution by sex of blue shark caught under regular longline operations at an average depth of 60 m (Source: Caill, 2000)

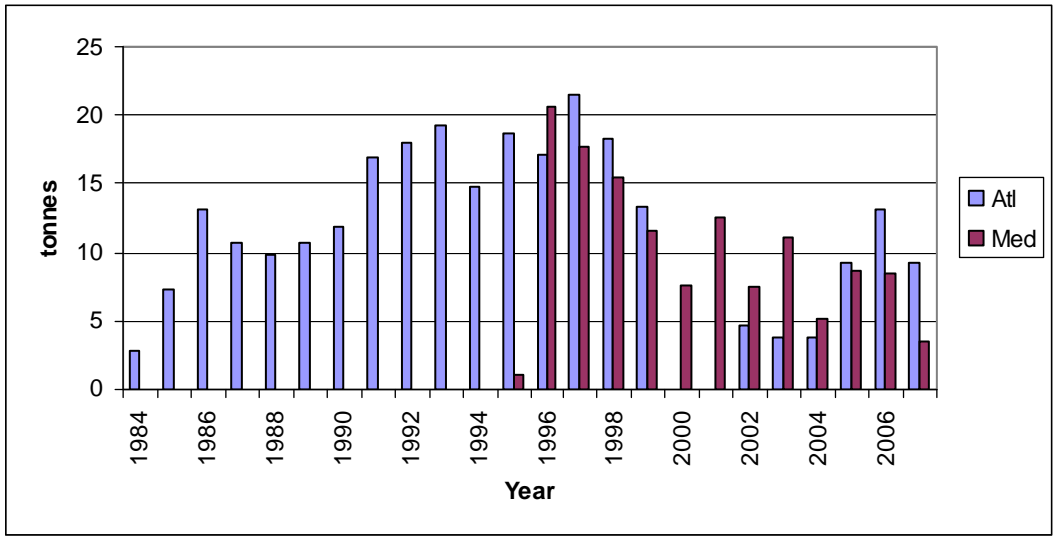


Figure 7. Thresher sharks *Alopias spp.* catch (t) per year in Atlantic Ocean (1984-2007) and Mediterranean Sea (1995-2007) (sources: SIH).

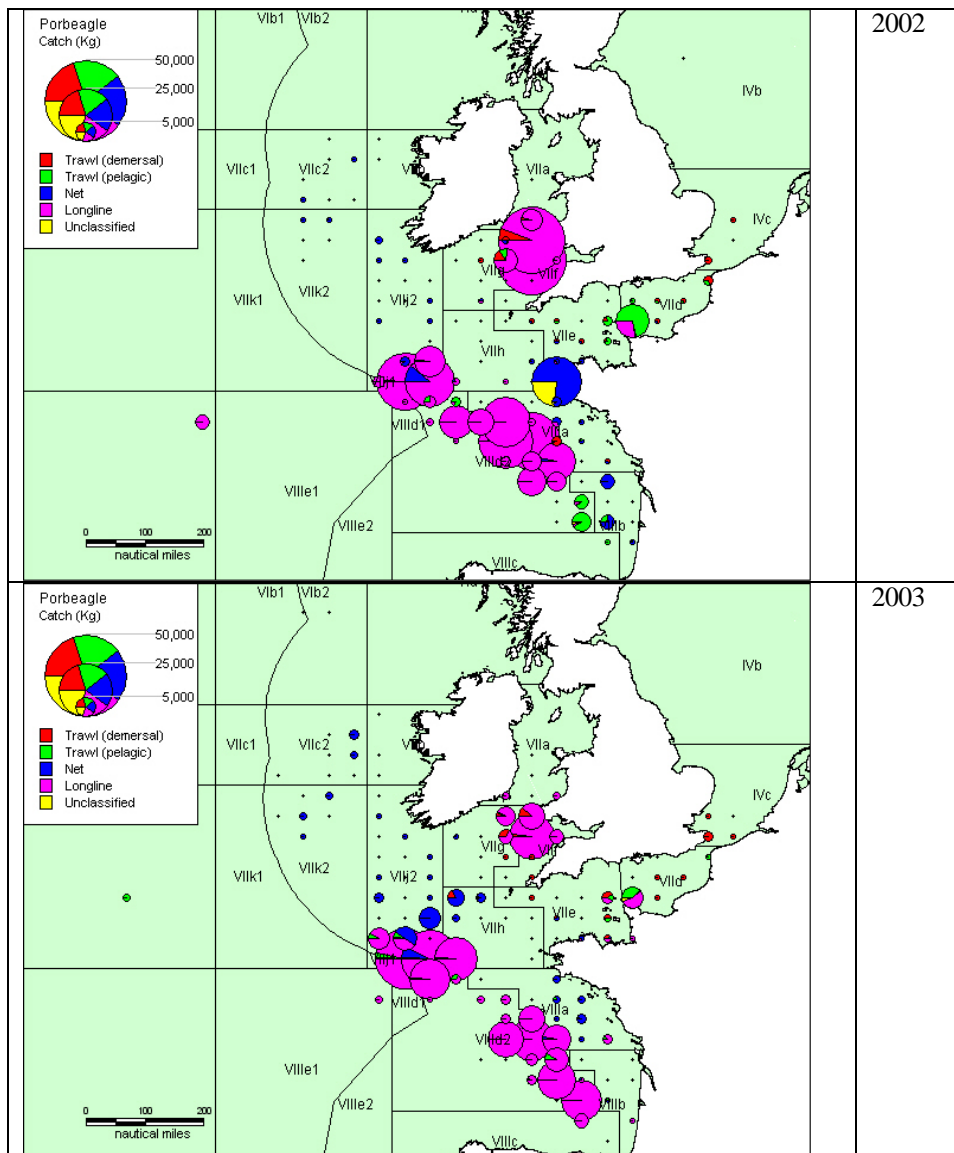
Appendix 1

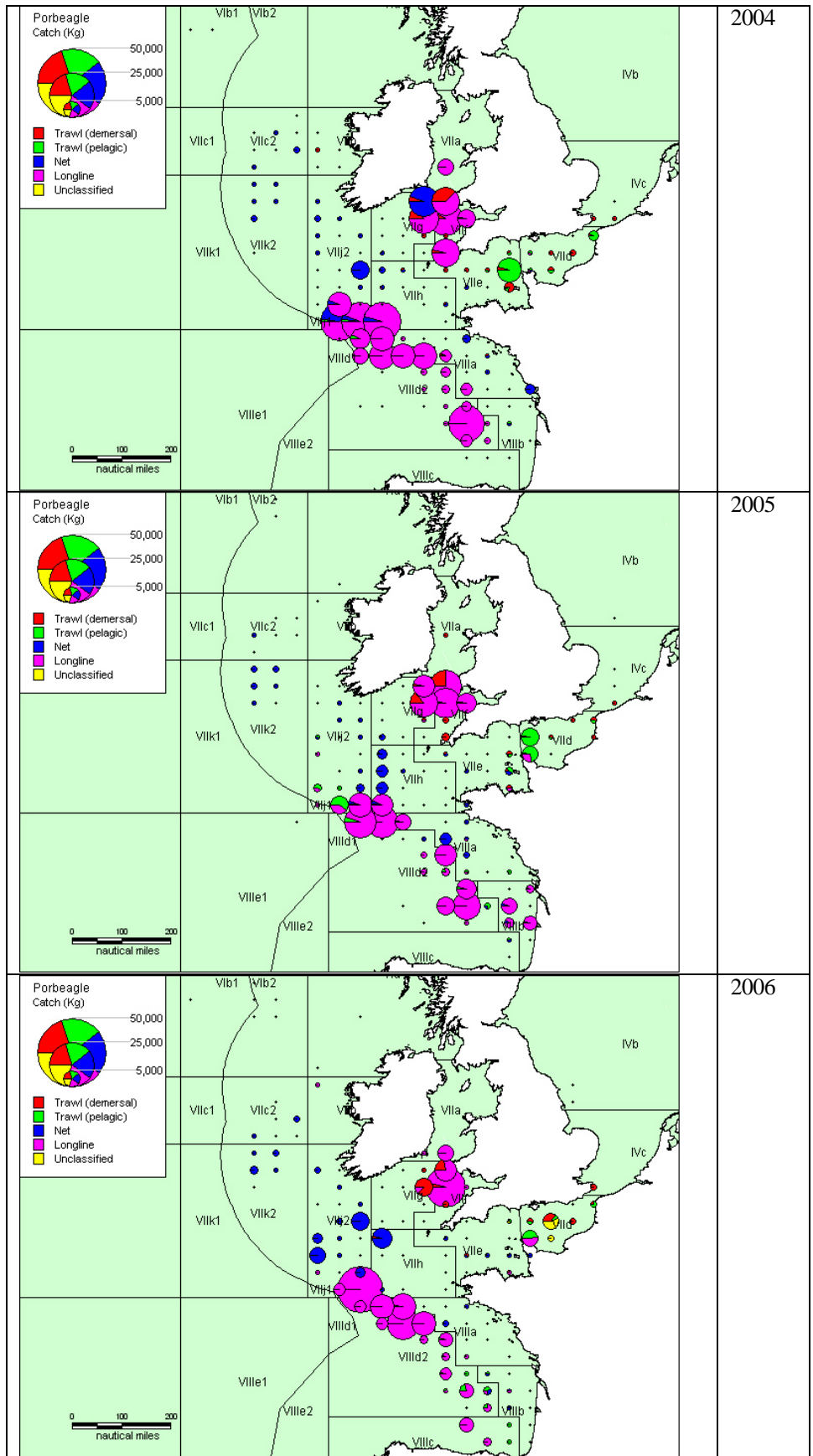
Descriptive statistics of the shark species caught by the National Observer Program from 2004 to 2007

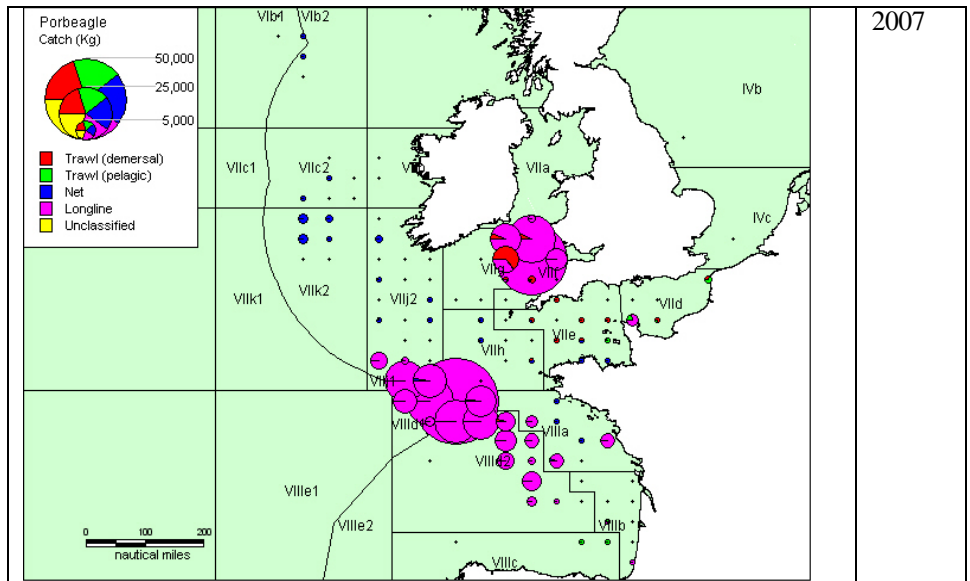
Species	Mean FL (cm)	Min. size FL (cm)	Max. size FL (cm)	s.d.	Sample size
<i>Alopias sp.</i>	248.8	150	390	71	37
<i>Lamna nasus</i>	151.8	119	173	18.5	13
<i>Prionace glauca</i>	148.1	140	180	8.6	21

Appendix 2

Distribution of porbeagle (*Lamna nasus*) catch by gear by ICES statistical rectangles, 2002-2007







Appendix 3a

Number of occurrences of reported catches by statistical rectangle from boats using drifting longline

<i>Divisions (ICES)</i>	<i>Statistical Rect</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>
VIIa	33E3				1			1	
	33E4	2	4	3	1			6	2
	33E5				1				
	34E4					1			
VIIe	28E7				1				
	28E8				1				
VIIf	29E4		1			1			
	31E5	14	4	4	1		10	3	7
VIIg	30E3						1		1
	31E3			6	1	1	5	2	11
	31E4	12	11	12	13	2	11	15	41
	32E2	1							
	32E3	1	22		4	1	5		9
	32E4	16	9	10	6	1	14	4	20
VIIh	25E1			1	1	2	5		
	25E2								1
	28E2				2				
VIIIa	21E5		2	11	5	3	2	2	7
	21E7				1		1		
	22E5		1						
	22E7		2						5
	23E4			1		1			3
	23E5			1			2		
	23E6		2						
	24E2		1	1	1	1	6	15	10
	24E3		2			1			
	24E4			1					
VIIIb	17E8	3			1				
	18E7	2	3		1		1	1	1
	18E8		7				1		
	19E7				1		2	1	
	19E8				1				
	20E6	5			1	2			2
	20E8						1		
VIIIc	16E6							2	
	16E7				1				
	17E5							7	
	17E6	1			1				

Appendix 3a

Number of occurrences of reported catches by statistical rectangle from boats using drifting longline (cont.)

<i>Divisions (ICES)</i>	<i>Statistical Rect</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	
VIII d	18E3						1			
	18E5	2		2	1	2	2	2		
	18E6	3	2	2	5	3		3		
	19E4	1	2		1	1	7	1	2	
	19E5	1	3	1	4	4	11	10	3	
	19E6		5	1	2	1		2	7	
	20D9						1			
	20E0					1	1			
	20E1					1				
	20E2				1					
	20E3		2		1	1				
	20E4	1	2	5	4	2	2	2	5	
	20E5	8	2	5	8	2	12		3	
	21E0								1	
	21E2							1		
	21E3	6	1	3	6	1	11		5	
	21E4	15	7	11	9	5	4	2	6	
	22E0							1		
	22E1						1			
	22E3		5	10	7	2	3	2	8	
	22E4	7	4	13	10	1	1	6	14	
	VIII d	23D9								2
		23E0			3	2	1			4
23E1			3	3		2	6	2	15	
23E2			3	7	3	2	2	9	15	
23E3			5	5	3	2		7	9	
24D9				1		1	1		11	
24E0			2	5	4	4	12	3	34	
24E1			10	2	3	3	12	8	18	
VIII e	21D8						1			
	23D8				1					
	24D7						1			
VII j	25D8						2			
	25D9	1	1	12	22	3	6	9	22	
	25E0		2	9	10	3	15	20	21	
	26D8				8		2	3	10	
	26D9			1	2	1			2	
	26E0			1						
		102	132	153	164	67	185	150	337	

Appendix 3b

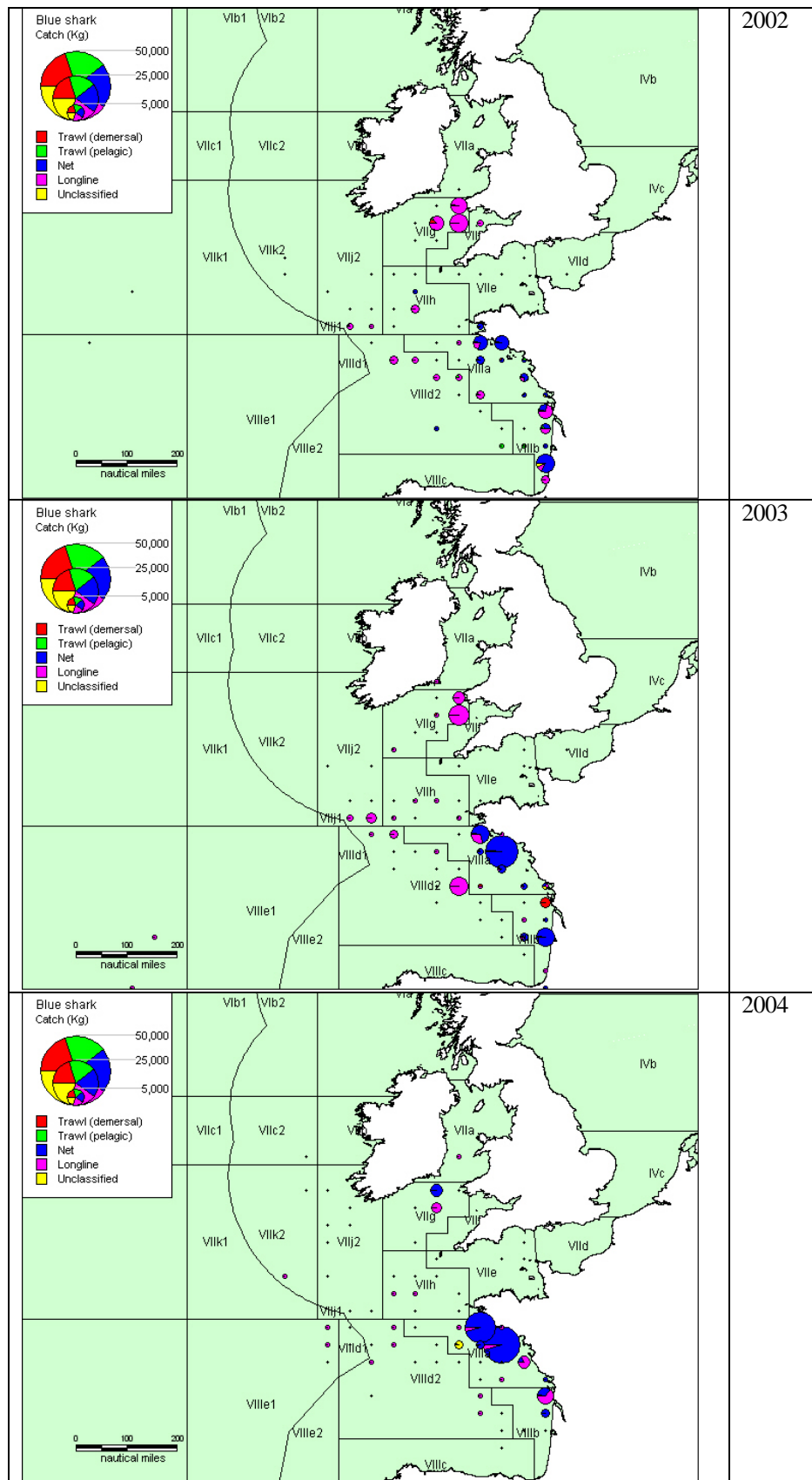
Reported catches by statistical rectangle from boats using drifting longline

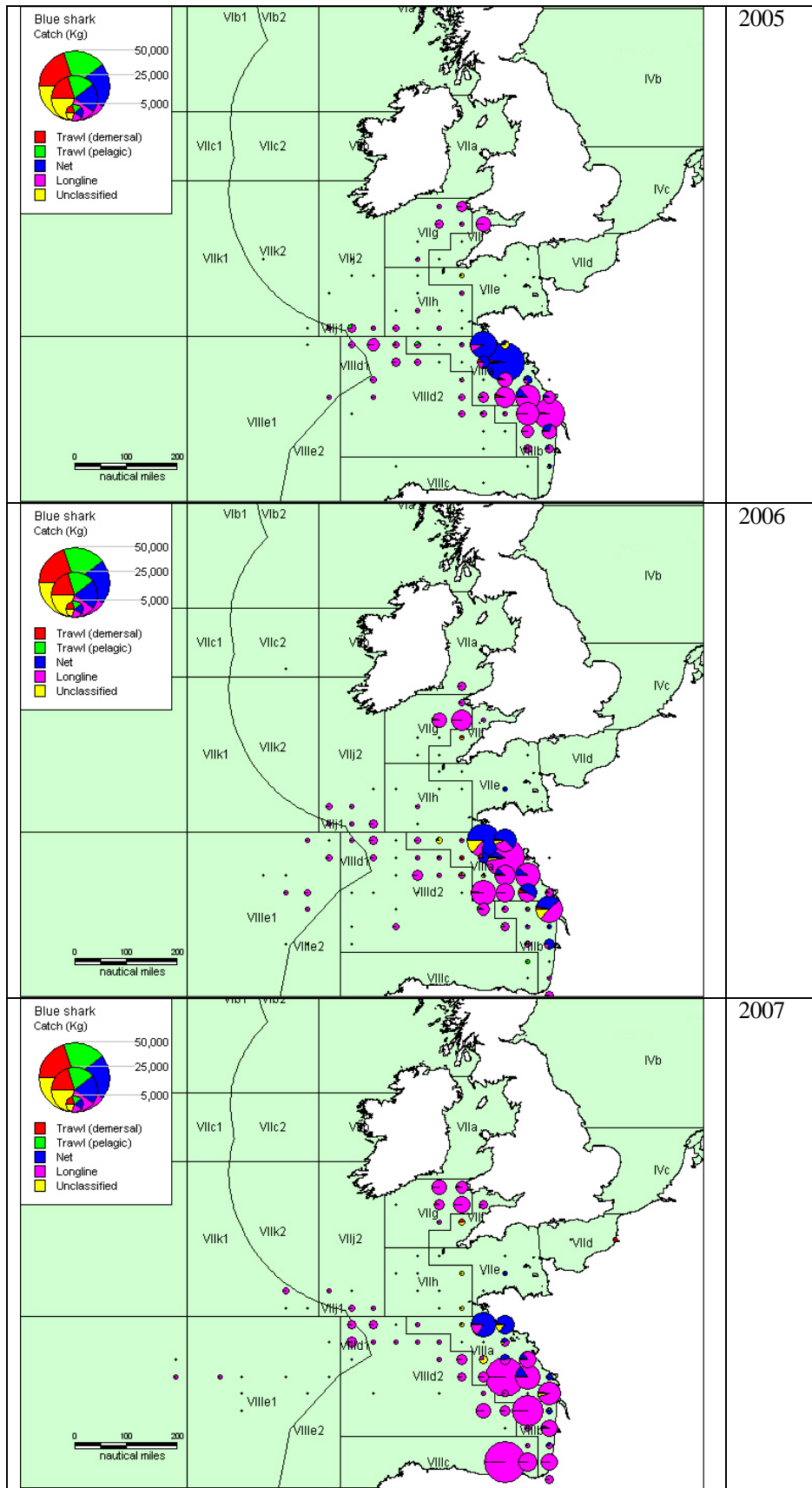
<i>Divisions (ICES)</i>	<i>Statistical Rect</i>	2000	2001	2002	2003	2004	2005	2006	2007
VIIa	33E3				651			367	
	33E4	266	820	5,120	150			4,712	950
	33E5				700				
	34E4					4,380			
VIIe	28E7				800				
	28E8				589				
VIIIf	29E4		25			11,400			
	31E5	15,886	1,750	734	2,800		6,928	353	5,552
VIIg	30E3						209		90
	31E3			4,748	1,600	11,310	10,228	701	2,640
	31E4	23,415	20,341	40,953	20,948	14,800	13,089	22,164	39,530
	32E2	258							
	32E3	1,427	19,616		4,360	30	8,002		8,636
	32E4	47,197	18,205	36,704	7,322	6,870	10,846	5,761	19,408
VIIIf	25E1			556	18,115	19,251	4,386		
	25E2								16
	28E2				90				
VIIIa	21E5		210	12,205	8,499	2,387	114	461	2,412
	21E7				1,300		50		
	22E5		308						
	22E7		3,237						2,541
	23E4			1,000		1,200			1,930
	23E5			500			118		
	23E6		6,112						
	24E2		170	30	170	296	3,783	10,131	9,873
	24E3		1,471			100			
	24E4			35					
VIIIb	17E8	186			300				
	18E7	93	2,160		67		30	30	114
	18E8		201				60		
	19E7				24		80	293	
	19E8				66				
	20E6	1,536			156	105			0
	20E8						25		
VIIIc	16E6							1,209	
	16E7				138				
	17E5							3,699	
	17E6	1,291			2,650				

Reported catches by statistical rectangle from boats using drifting longline (cont.)

<i>Divisions (ICES)</i>	<i>Statistical Rect</i>	2000	2001	2002	2003	2004	2005	2006	2007
VIII d	18E3						90		
	18E5	10,540		123	110	539	284	212	
	18E6	2,015	635	200	17,787	794		1,014	
	19E4	299	5,486		1,463	306	5,978	307	1,241
	19E5	75	30,852	47	14,570	10,383	11,604	2,347	296
	19E6		2,933	295	290	20		322	191
	20D9						0		
	20E0					25	0		
	20E1					73			
	20E2				110				
	20E3		779		45	36			
	20E4	4,667	2,187	4,703	2,041	289	18	1,731	4,298
	20E5	7,323	1,897	2,428	6,591	1,041	6,618		0
	21E0								76
	21E2						0		
	21E3	7,122	195	621	13,050	304	520		3,350
	21E4	25,793	3,180	4,225	19,550	324	1,069	1,169	793
	22E0						0		
	22E1					36			
	22E3		8,681	26,841	1,609	626	668	1,476	5,271
	22E4	20,037	2,339	27,642	7,143	123	3,730	3,828	2,670
	23D9								0
	23E0			709	275	4,100			1,335
	23E1		1,337	12,279		4,227	192	2,471	18,498
	23E2		2,706	6,830	599	7,660	121	13,694	13,583
	23E3		2,860	22,789	1,379	10,780		9,381	2,939
	24D9			300		140	7		6,795
	24E0		751	1,332	16,410	6,787	8,978	3,018	21,541
	24E1		63,222	296	775	6,181	15,633	8,704	61,550
VIII e	21D8						0		
	23D8				1,000				
	24D7						7		
VII j	25D8						196		
	25D9	4,710	171	24,498	31,724	2,750	1,381	2,364	14,539
	25E0		423	17,310	28,087	16,779	5,316	27,100	10,661
	26D8				5,426		399	501	3,327
	26D9			111	2,714	8,395			779
	26E0			10,750					

Distribution of blue shark (*Prionace glauca*) catch by gear by ICES statistical rectangles, 2002-2007





Appendix 5

Distribution of thresher sharks (*Alopias vulpinus* and *A. superciliosus*) catch by gear by ICES statistical rectangles, 2002 and 2007

