

## Basking Shark Watch – 2006 report



*Pic: Rachel Hoskin*

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## Introduction

The Marine Conservation Society Basking Shark Watch Project was launched in 1987 with three main aims:

- Raise awareness of basking sharks (*Cetorhinus maximus*) and the importance of their conservation.
- Record and publicise hotspots for basking shark sightings in UK waters.
- Provide conservation recommendations to national and international authorities.

Since 1987, MCS has successfully raised public and media awareness of basking sharks in UK waters, mainly through print and broadcast media, the internet ([www.mcsuk.org](http://www.mcsuk.org)) and public presentations around the UK. MCS distributes public awareness posters/factsheets a Code of Conduct (in collaboration with the Shark Trust) and reporting cards. MCS also encourages the public to report basking shark sightings online on the MCS website and regularly reports Basking Shark Watch results to the general public via our annual summary reports.

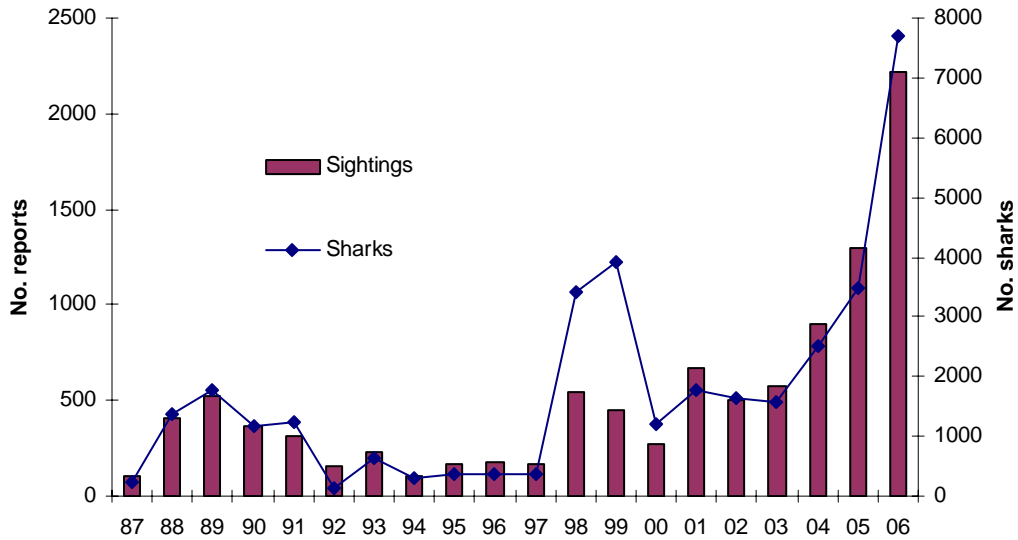
MCS is joint lead partner of the Basking Shark Species Action Plan ([www.ukbap.org.uk](http://www.ukbap.org.uk)) along with the Shark Trust and The Wildlife Trusts. In addition, MCS regularly meets with nature conservation agencies, Defra, DoE NI, SNH, JNCC and scientists from UK and abroad to update and refine conservation measures for the species in the UK and in international waters.

MCS has been instrumental in listing the basking shark on the Wildlife and Countryside Act in 1998; and including the species on the Bonn Convention on Migratory Species in 2005, which subsequently led to the prohibition of the deliberate capture and landing of basking sharks in EC waters under CFP regulations set in December 2006.

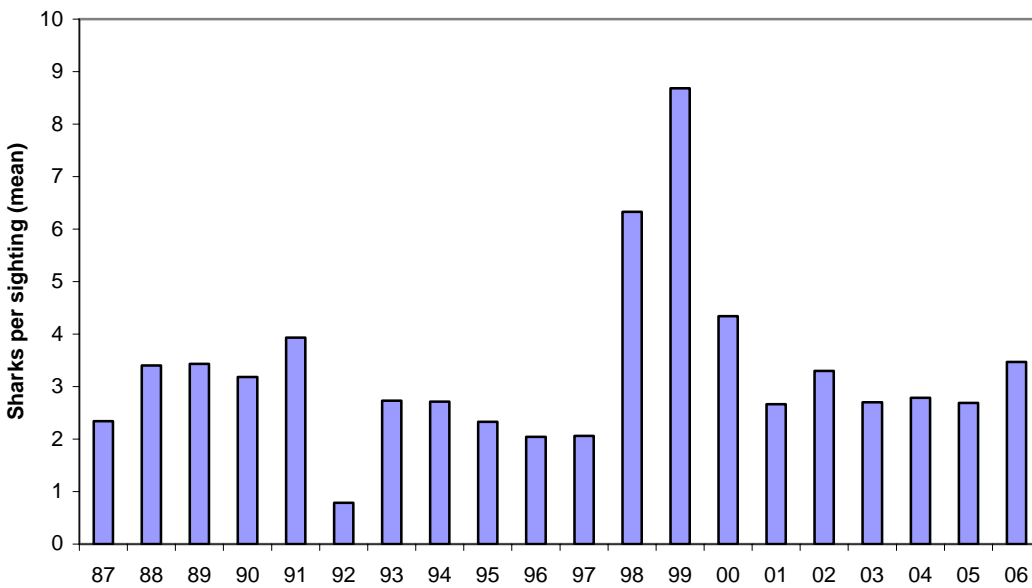
## 2006 Results

### Number of Reports

2006 was a significant year for basking shark sightings. MCS received 2,222 reports, representing a 70% increase over the previous record year (n=1,301 in 2005 - see fig. 1). Report numbers have risen consistently since 2003.



**Figure 1. Number of reports, and total number of sharks, per year 1987-2006.**



**Figure 2. Annual mean sharks per sighting, 1987-2006.**

Recent increases in sightings may indicate a rise in the number of basking sharks present in UK waters, suggesting that populations could be starting to reproduce and recover after ten years of protection in inshore waters. However, there are a number of other possible explanations:

1. The UK was dominated by a high-pressure system during the 2006 summer. Good weather makes surface-feeding sharks more visible, as well as increasing the number of people in boats and walking near the sea leading to an increase in the number of potential observers.

2. Basking sharks feed along thermal fronts (Sims and Quayle, *Nature*, 1998). Oceanographic conditions (It is conceivable that a stronger NAO (Gulf Stream) may have pushed the thermal fronts closer inshore, bringing the sharks closer inshore and therefore more visible to most sea users and coastal walkers.
3. Recent increases were coincident with high levels of Basking Shark Watch (BSW) project promotion by MCS staff, and media interest in the species, thus increasing awareness of both the presence of the sharks and how to report sightings.

While it is not clear why the observed increases occurred, it is likely to be a combination of the above factors.

It was also a record year for the number of sharks reported, up to 7,708 from the previous record of 3,908 in 1999 (fig.1). This is not surprising, due to the sheer volume of reports in 2006, and does not indicate an exceptionally high number of sharks per sighting (fig. 2).

### Spatial Distribution

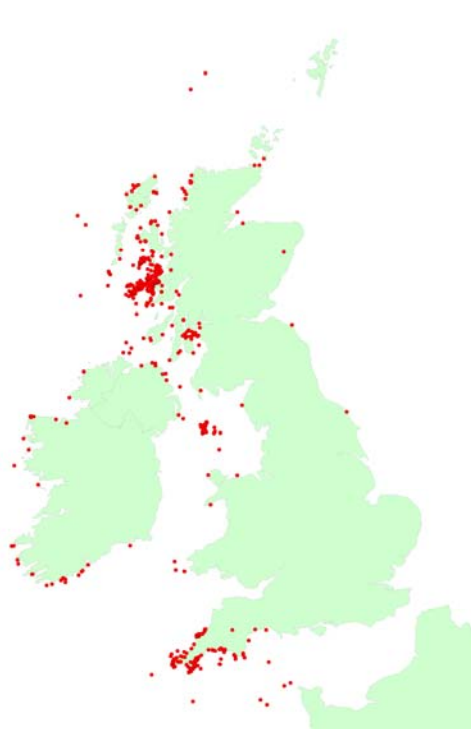


Figure 3.1. Distribution of 2004 sightings

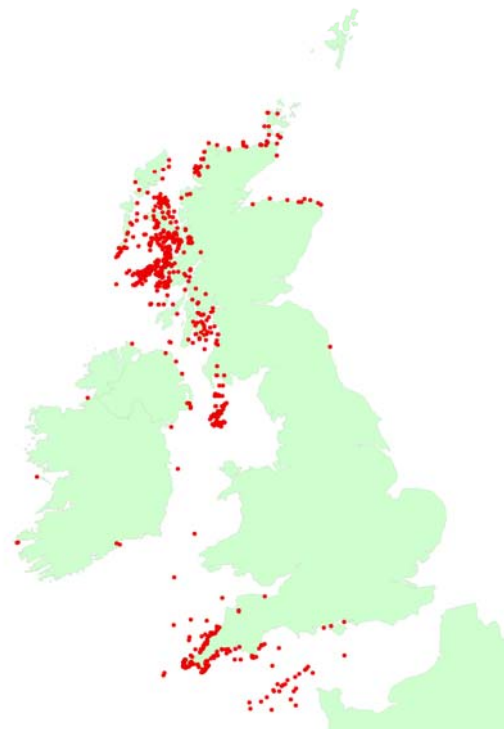
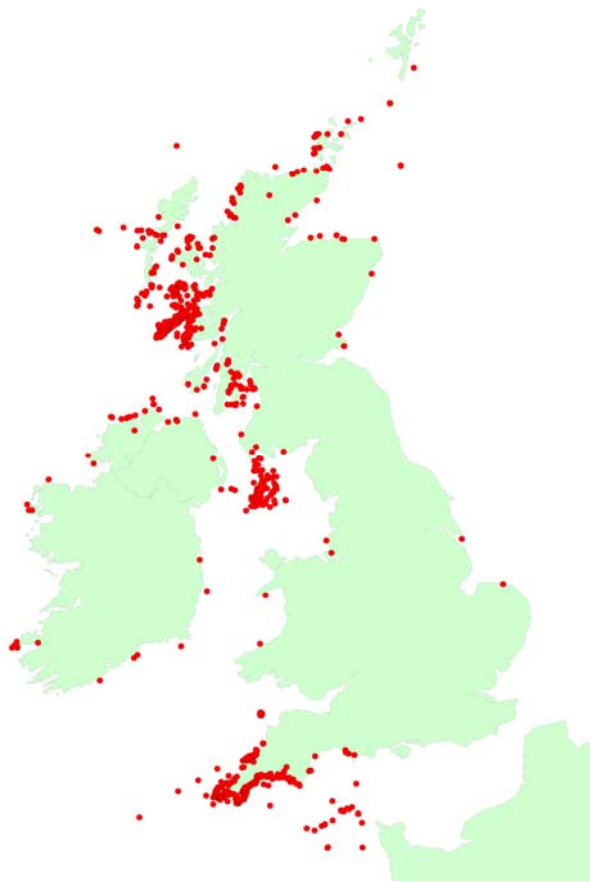
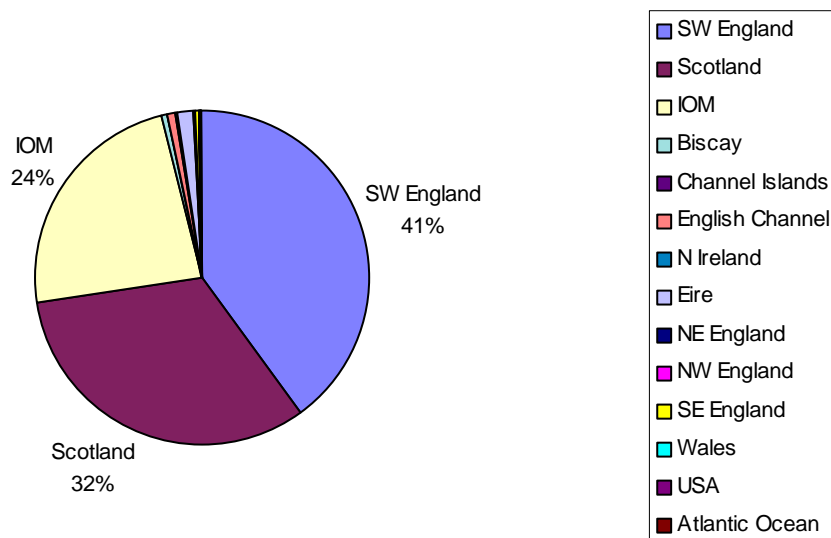


Figure 3.2. Distribution of 2005 sightings



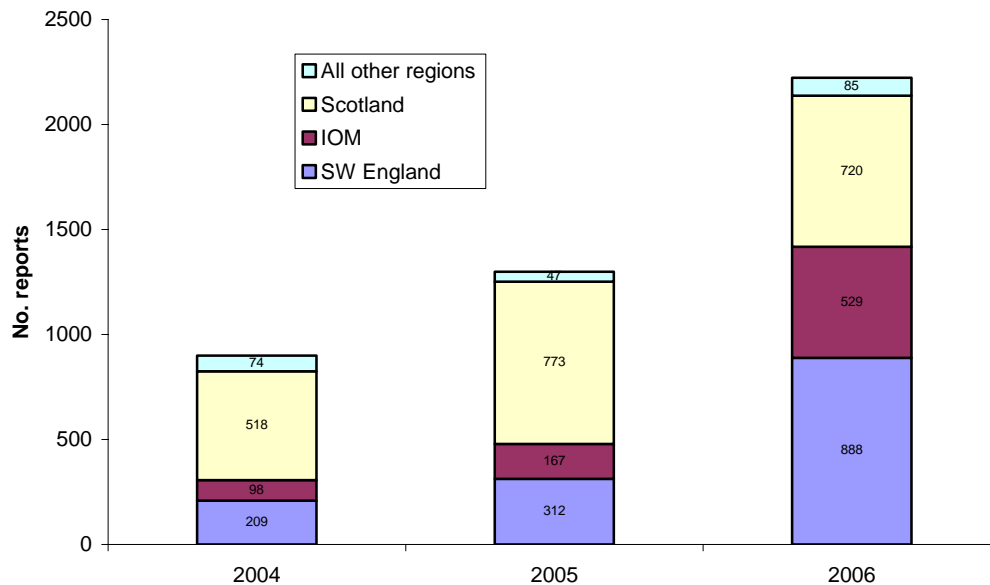
**Figure 3.3. Distribution of 2006 sightings**

The distribution of 2006 sightings can be seen in figure 3.3 and 4, which indicates high sighting densities in southwest England (particularly Cornwall and south Devon), the Isle of Man and the west coast of Scotland (particularly around the islands of Coll, Tiree and Mull). This mirrors the trend in previous years (figure 3.1, 3.2 and 5).



**Figure 4. Regional distribution of 2006 sightings as percentage of total 2006 sightings.**

The vast majority of all sighting reports occurred in these three ‘sightings hotspots’, as shown for 2006 in fig. 5. 41% of sightings occurred in Southwest England (n=888), 32% in Scotland (n=720), and 24% in the Isle of Man (n=529). All other regions, when added together (n=85), made up only 5% of total 2006 sightings (n=2,222).

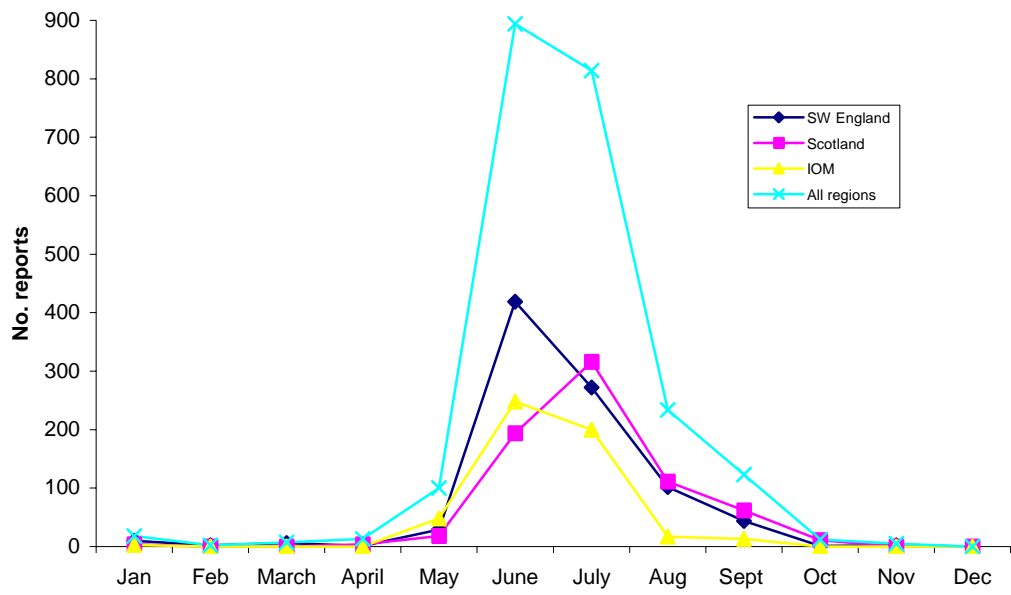


**Figure 5. Numbers of sighting reports in regional ‘sighting hotspots’ in recent years.**

By comparing the regional origins of sighting reports, across recent years (fig. 5), we can see that the dramatic 2005-2006 rise in sighting reports is due entirely to increases in the SW England and IOM regions, of 185% and 217% respectively. The less dramatic 2004-2005 rise was due to increases in all three ‘sighting hotspots’.

### Temporal Distribution

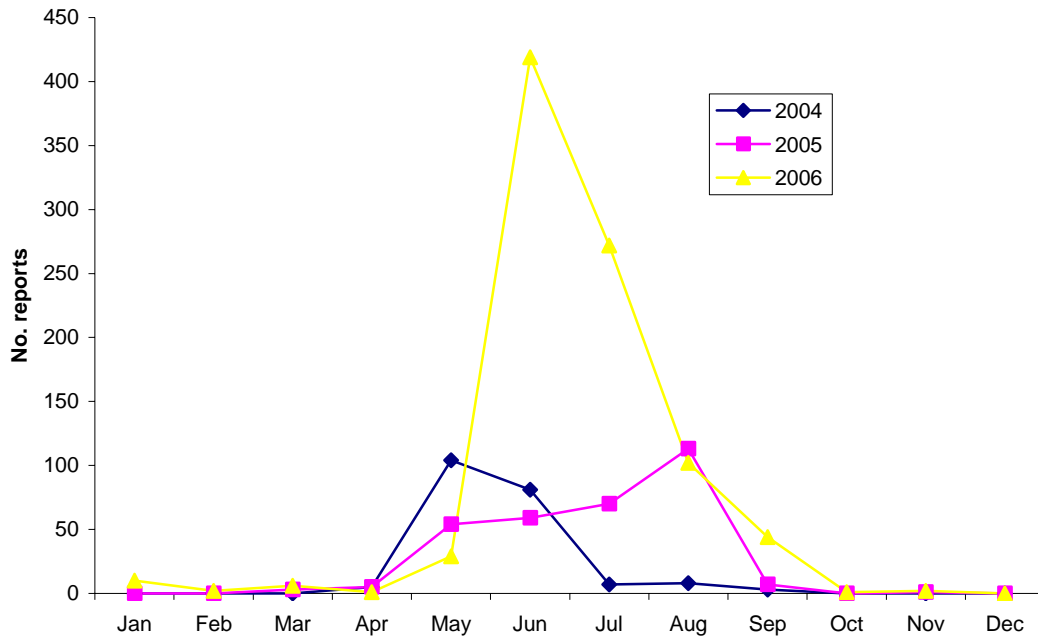
Total 2006 sightings peaked dramatically in June and July, with 40% and 37% of sightings respectively (fig. 6), which is consistent with previous data. Historically, sightings have peaked earliest in the Southwest (around May and June), followed by the Isle of Man (June and July), and lastly in Scotland (around August), but recent years have shown some deviations, particularly in SW England.



**Figure 6. Total number of sighting reports, per month, in 2006.**

### Southwest Region

Between 1987 and 2004, the timings of peak sightings in the Southwest region have oscillated between May and June. 2005 saw many more sharks reported late in the season, with a peak in August (fig. 7). In 2006, the peak returned to June, but with the distribution curve heavily weighted towards July and August. As this report goes to press, sightings to date in 2007 suggest another late peak, possibly in August (although it is impossible to be sure until all sighting reports are received).



**Figure 7. Seasonal variation, in the SW England region, between years (2004-2006).**

### Isle of Man

Sightings have consistently peaked in June and July, except between 1993 and 1998, when they peaked in August. 2006 sightings peaked in June.

### Scotland

Sightings have consistently peaked around August, except in 2006, when they peaked in July and June.

## Shoal Size

The majority of 2006 sightings were of individual sharks (59%, n=1,305), but they were also regularly seen in pairs (256), threes (170) and fours (117). The relative occurrence of most shoal sizes in 2006 were similar to their occurrence between 1987 and 2004 (table 1). However, there were relatively fewer large schools of 100+ sharks in 2006.

**Table 1.** Relative occurrence of different shoal sizes in 2006 compared to 1987-2004.

Shoal size	Year	
	2006	1987-2004
1	1305 (59%)	57%
2	256 (11.5%)	14%
3	170 (7.7%)	
4	117 (5.3%)	
4-9	318 (14.3%)	14%
10-49	154 (6.9%)	
50-99	9 (0.4%)	0.5%
>100	2 (0.09%)	0.3%

The 2006 distribution of shoals of 10+ sharks is shown in fig. 8. There were two shoals of 100+ sharks, both in July, one in SW England (off the North Cornwall coast) and the other in the Inner Hebrides (between the islands of Canna and Humla). Shoals of 10-49 sharks are well distributed across the three regional sighting hotspots. MCS received 3 further reports of shoals containing 50-99 sharks, which are not plotted in fig. 8. Two were from SW England, but lacked specific location information, the third was off the Virginia/North Carolina border.



**Figure 8.** Distribution of 2006 shoals of 10-49 (small purple dots), 50-99 (medium yellow dots) and 100+ sharks (large red dots).

## **Behaviour**

Over 45% (n=1,006) of all 2006 sighting reports recorded one or more forms of behaviour (feeding, swimming or breaching). Of these, 71% indicated feeding sharks (n=714), 30.4% swimming (n=306), and 2.9% breaching (n=29). Single sharks, rather than schools, were involved in most of the breaching reports. This contrasts with 1987-2004 data, which found that breaching usually occurred in shoals of at least 10 sharks (MCS BSW Summary Report 1987-2004). Breaching occurred in 1.7% of all 2006 IOM reports (n=9), 1.4% of all Scotland reports (n=10), and 0.79% of all SW England reports (n=7), indicating no obvious regional bias.

## **Shark Size Distribution**

Size information was reported for 2,470 (32%) of the 7,708 basking sharks reported in 2006. The size distribution in 2006 follows a normal distribution curve, as shown in fig. 8. The most frequently observed size class was 4-6m in length (37%), which is similar to the figure (37.9%) for 1987-2004 data (fig. 9). However, there is a greater percentage of the larger size classes in the 2006, compared to the 1987-2004, data: (30% compared to 21.9% in the 6-8m size class, and 11% compared to 7.7% in the >8m class). It is of interest to note the reduction in the 2-4m size class, from 30.1% in the 1987-2004 data, to 20% in 2006.

This suggests an increase in observed basking shark size, which has been confirmed by other research (Colin Speedie, unpublished data). Length at birth is thought to be about 1.5 metres, and maximum length around 11 metres. It may be that we are seeing a maturation (and therefore greater individual recorded size) of UK basking sharks as a result of the protection measures introduced under the Wildlife and Countryside Act (1981) which has prevented the species from being fished since 1998.

Sightings of the largest sharks (>8m) were most abundant in the Isle of Man (n=196), where they made up 19.5% of all sharks for which size was recorded (vs. 11.6% in Scotland and 1.8% in SW England).

These size trends by region and over time have to be treated with caution, as the observers are non-specialists without any training in identifying sizes of marine megafauna.

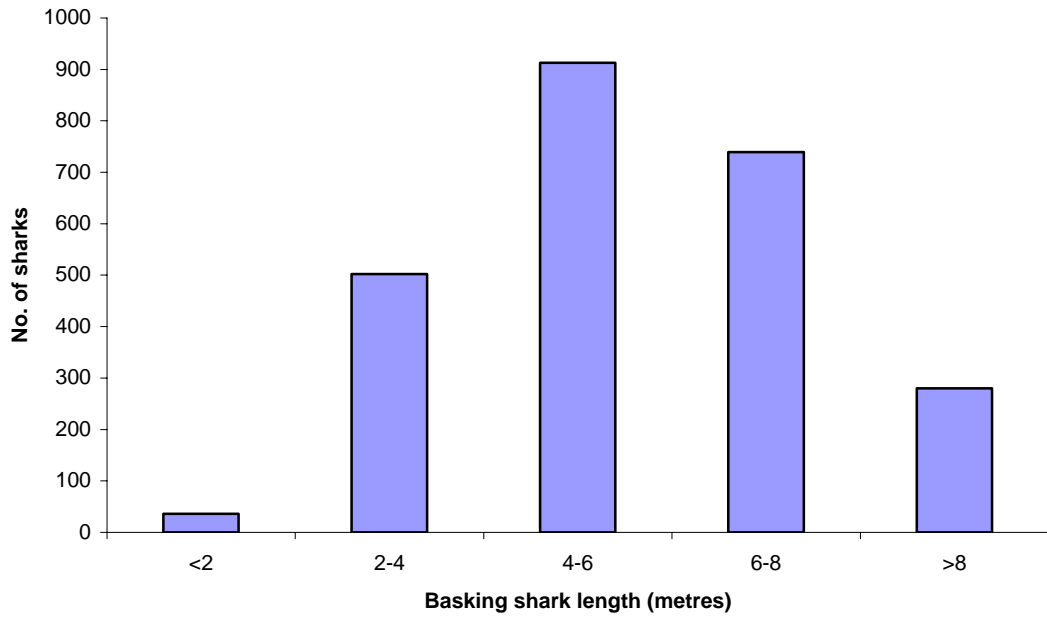


Figure 9. Basking shark size distribution, 2006.

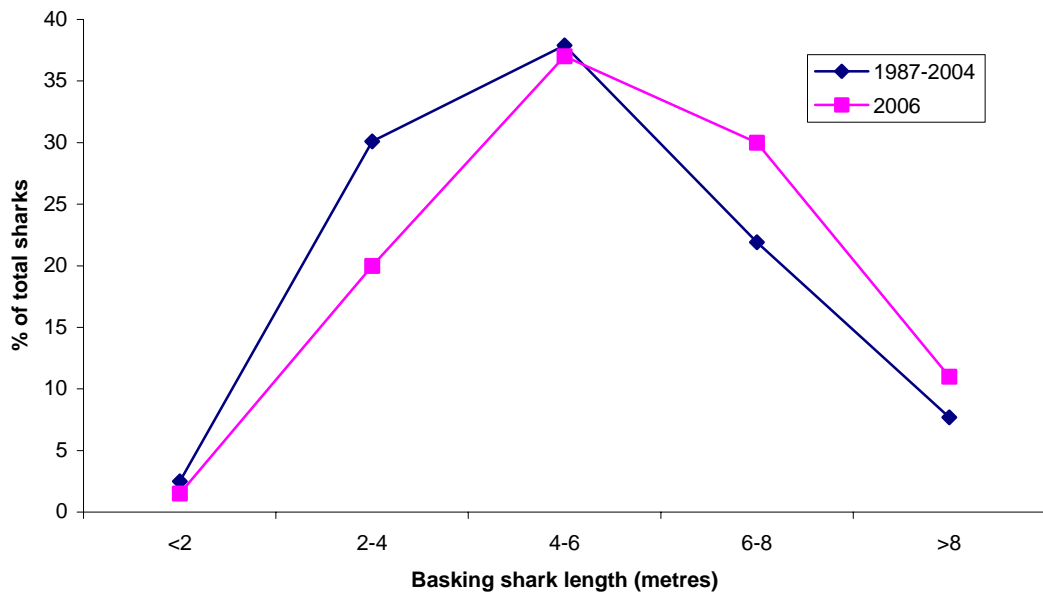


Figure 10. Basking shark size distribution in 2006 vs. 1987-2004.