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Kenyan sports fishing Sailfish Catches

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ABSTRACT

This report presents the catches of the Indo-Pacific Sailfish (*Istiophorus platypterus)* caught by the sports fishers at Malindi sport fishing club. The daily catch data per boat used here is for eighteen years from 1987 to 2006 whereby over 22,000 trips were recorded. The years 1988 and 1999 are not included as the data was missing. Sailfish is usually the main target of the sports fishers and tagging conducted by the African Billfish Foundation (ABF) has mainly concentrated on this species. Initially, most of the sailfish caught were retained but after the sports fishers realized the need to conserve the species, there has been an increased release back to the waters and the ratio of retained catches has been on the decline with only a third of the catch being retained while the rest are tagged and released. The season for the Sailfish is between the months of September and February with December being the peak month. Over the 18 years, the average weight of individual fish caught has remained around 25 Kgs. The CPUE for sailfish has steadly declined with occasional rise and fall. The results show that sport fishing data can be used to indicate the abundance of the stock and countries should be encouraged to collect and report the sport fishing data.

1. INTRODUCTION

1.1. Background information on the data

Fisheries Department had been collecting data on sport fishing since 1940, but the data had not been computerised. In February 2006, the Indian Ocean Tuna Commission and the Overseas Fishery Cooperation Foundation (IOTC-OFCF) embarked on a fact-finding mission in Kenya. They found historical sport fishing data in Malindi and Watamu and implemented a project for computerization of historical data from sport fishing clubs, as a component of activities under the Cooperation project for enhancing the data collection and processing systems for the Tuna resources in the Indian Ocean.

A sport-fishing database was developed from this project and was useful in providing useful analytical details for the Fisheries Department. Previously unreported data, for example, on catch effort and weight/length frequency for specific species can now be derived from the database. Much emphasis, however, needs to be placed on improving the sport fishing clubs' data recording procedures and updating the database. It will be necessary for the Fisheries Department to provide the technical support required for this task.

1.2. Description of the fishery

The Kenyan coastline spreads for a distance of 640 km from the northern Kenya border with Somalia (1^0 45' South of the Equator) to the Tanzanian boarder (5^0 South of the Equator). Most of the sports fishing activities take place in Malindi and Watamu although other areas such as Lamu and Shimoni do have considerable

activities. The Pemba Channel off Shimoni in south coast Kenya is 40 km wide and 100 km long.

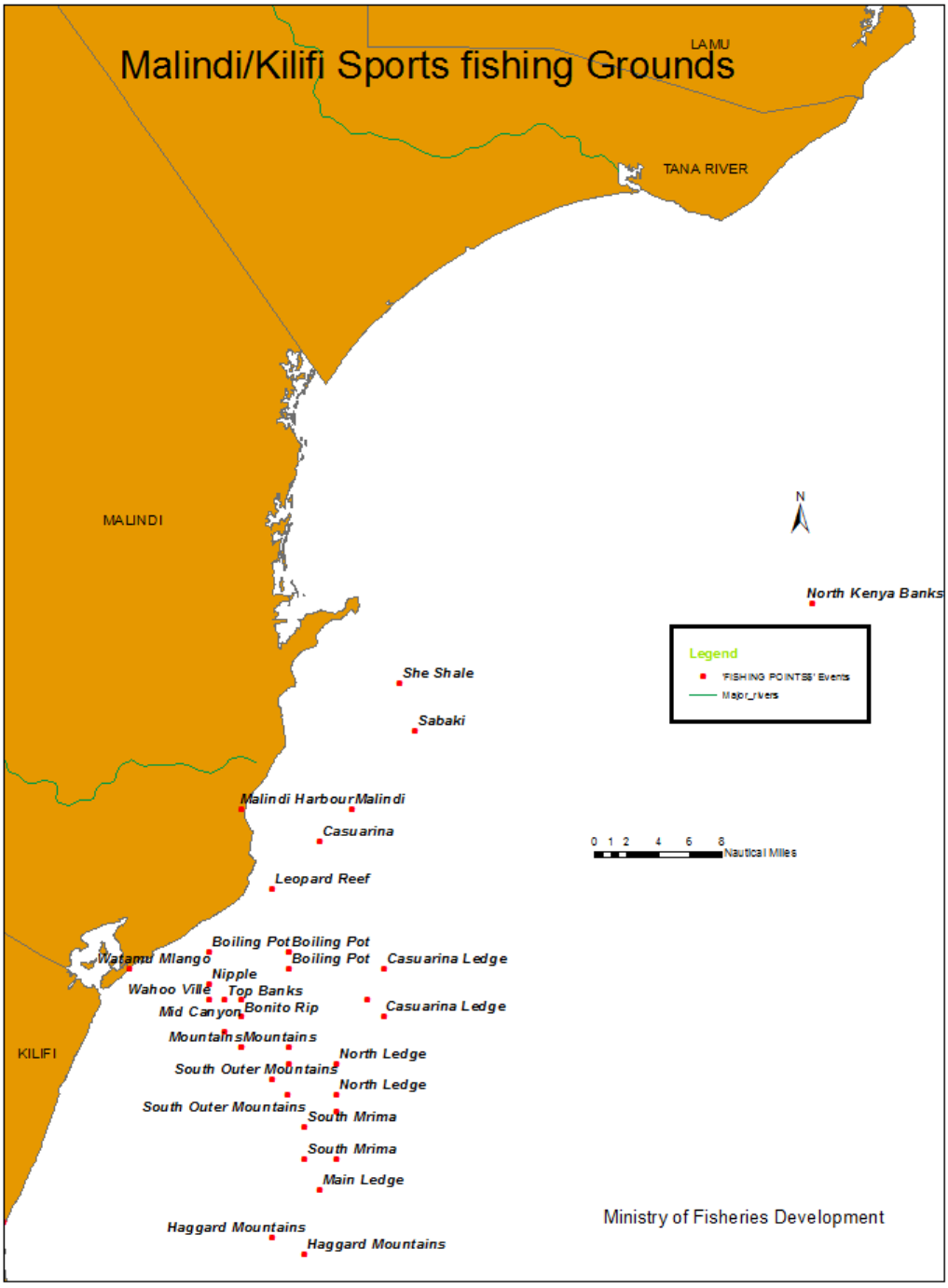


Figure 1: Sport fishing grounds used by Malindi fishers

The northern Kenya bank represents the busiest area used by the sports fishers and is about 28 nautical miles from the land. Most of the other fishing grounds are scattered and mostly range between four and twelve nautical miles. Different fishing areas are used at different seasons depending on the target species. The Sailfish are caught all over with the large sized ones appearing during the start of the season in September and again at the end of the season in March mainly off the North Kenya banks.

Sports Fishing Seasons

Literally, there are two sport-fishing seasons per calendar year. The first and most intense season runs through the last two quarters of the year i.e. July to December, while the second runs through the first quarter, January to March. However, fishing seasons could be divided into two with regard to calmness or roughness of the sea. The two seasons are *Kus*i (Southeast monsoon winds) and *Kaskazi* (Northeast monsoon winds). The southeast monsoon is characterized by rough sea, which at its worst fishing is suspended until it is calm. This season is between the months of April to September, whereas the northeast monsoon season is experienced between the months of October and March. During the months of May to July, there is little or no fishing at all as the sea is stormy and considered dangerous to the anglers and the crews. The table below shows the total catches per month for 18 years.

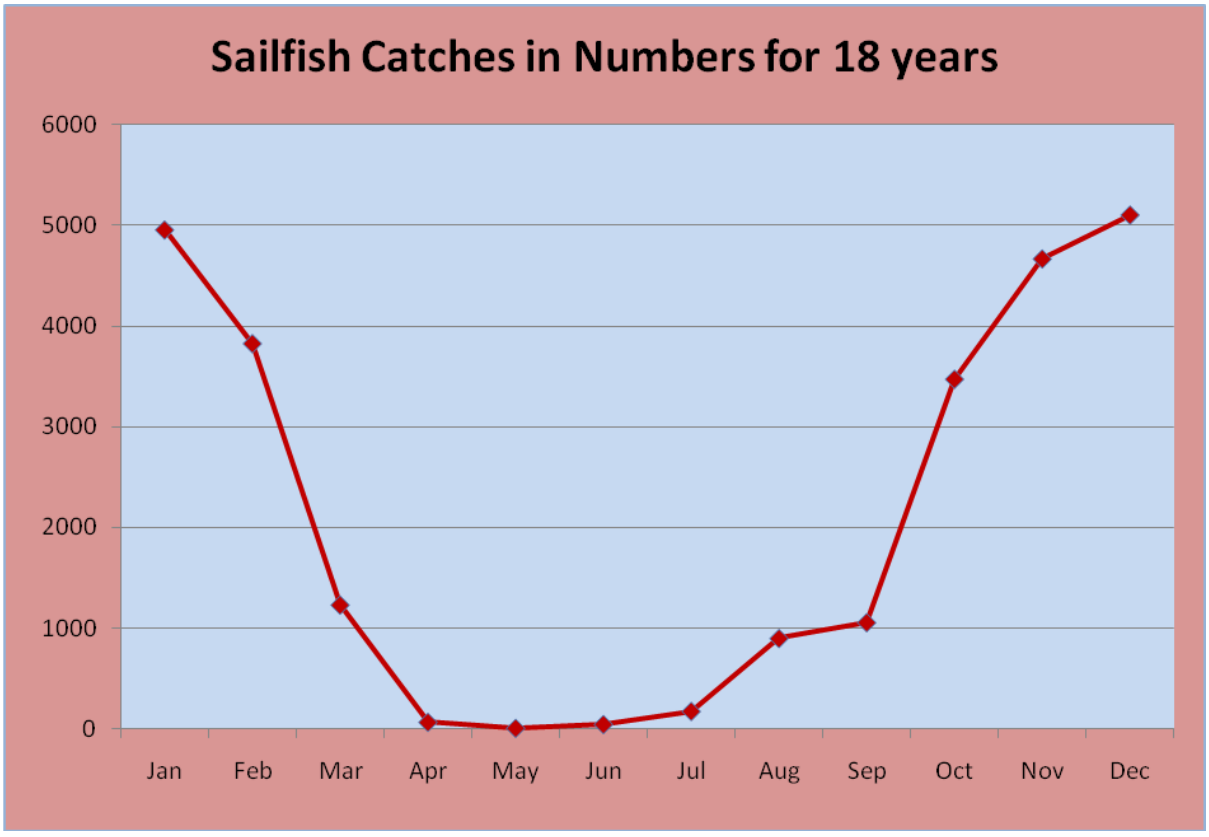


Figure 2: Monthly Sailfish catches from Malindi sports-fishing club

Sport fishing as a recreational activity has been taking place all along the Kenyan Coast within the confines of various registered clubs and at times on individual basis. Different species are caught at different seasons of the year. The best months for billfish (Blue Marlin (*Makaira nigricans*), Black Marlin (*Makaira indica*), Stripped Marlin (*Tetrapturus audax*), Broadbill Swordfish (*Xiphias gladias*) and Sailfish (*Istiophorus platypterus*)), however, run from October through to April during the time the Northeast Monsoon blows and the sea is rather calm. Many large marlins are often landed in the months of July to August but the sea normally becomes pretty rough during the period due to the strong Southeast monsoon winds. Black Marlin can be encountered almost any time but again numbers increase January through March (Duncan McKenzie). Tagging mainly targets the sailfish and the marlins with all tagged fish released back to the waters. Other catches include the Tuna (Big eye tuna (*Thunnus obesus*), Long tail tuna (*Thunnus tonggol*), Skipjack tuna (*Katsuwonus pelamis*) and Yellowfin tuna (*Thunnus albacares*)), Kawakawa (*Euthynnus affinis*), Frigate tuna (*Auxis thazard*) Wahoo (*Acanthocybium solandri*), Barracuda (*Sphyraena spp*.), Cobia (*Rachycentron canadum*), Dolphin fish (*Coryphaena hippurus*), Kingfish (*Scomberomorous commerson*), Sharks (Hammerhead (*Sphyrna spp*), Mako shark (*Isurus oxyrinchus*.), Silvertip shark (*Carcharhinus albimarginatus*) and Tiger shark(*Galeocerdo cuvieri*), Trevallies (*Caranx spp*.) and Rainbow Runner (*Elagatis bipinnulata)*.

1.3. Data recording

Malindi Sea Fishing Club is one of the major recreational fishing clubs in north coast. Data is recorded on a daily basis in a hard cover note book. The data recorded contains the date, name of boat, species of fish caught; number caught total weight per species, and remarks on whether tagged, released, or retained. On average, 9 boats were noted to be in the ocean per day.

Photo 1: Sports fishing boats

2. Results and Discussion

2.1. The Fishery

From the data recorded for 18 years provided by the club, more than 170 boats were recorded which made more than 22,000 fishing trips. The table below summarizes the data recorded for the 18 years by Malindi sports-fishing club. In the year 2002, the data available was for 6 months while 2003 had only one month's data. Due to this, both years have the lowest figures.

Year	Data available	No. of trips	Total Catch in No.	Total Weight in Kgs.	Sailfish Catches in No.	Sailfish weight in No.	% of the total catch in Weight
1987	Jan- Dec	1,259	7,918	71,865	1,612	40,979	57
1990	Jan- Dec	1,536	10,317	75,002	1,287	31,830	42
1991	Jan- Dec	1,827	12,753	120,222	3,478	82,680	69
1992	Jan- Dec	1,755	13,358	123,502	2,409	57,303	46
1993	Jan- Dec	1,585	10,696	123,231	2,109	55,590	45
1994	Jan- Dec	1,581	12,742	129,991	2,786	71,455	55
1995	Jan- Dec	1,468	12,404	110,764	2,223	53,750	49
1996	Jan- Dec	1,408	11,979	105,745	2,107	52,088	49
1997	Jan- Dec	1,198	8,459	81,174	1,266	31,717	39
1998	Jan- Dec	808	7,712	57,891	598	14,575	25
1999	Jan- Dec	1,061	9,936	84,922	1,544	39,379	46
2000	Jan- Dec	1,153	8,978	94,137	1,841	46,449	49
2001	Jan- Dec	1,161	8,384	99,491	1,337	34,063	34
2002	Jan- Jun	471	4,191	33,528	242	6,514	19
2003	Dec	157	1,452	23,213	228	5,735	25
2004	Jan- Dec	1,195	10,353	108,982	1,123	29,394	27
2005	Jan- Dec	1,182	10,553	94,680	1,486	38,934	41
2006	Jan- Dec	1,218	8,331	95,314	581	14,761	15

Table 1: Malindi sports fishing effort from 1987 to 2006

Sailfish happens to be the major target for the sports fishers composing over 50% of the caught weight up to 1996. After that, there has been a considerable decline in the total composition with the year 2006 representing the lowest levels at 15% while the year 1991 had the highest composition at 69%. The catches have however been fluctuating between the years as tabulated above.

2.2 Trends in the fishing effort

The average fishing effort has reduced from the level of 1600 in the early 90s to 1200 trips yearly. This level has been maintained to date. During the year 2002 and 2003, there is a missing gap from the records and hence this is not the true reflection of the total fishing effort. In the year 1998, the number of trips reduced drastically due to the elnino rains that continued from January to March thus reducing the number of fishing trips.

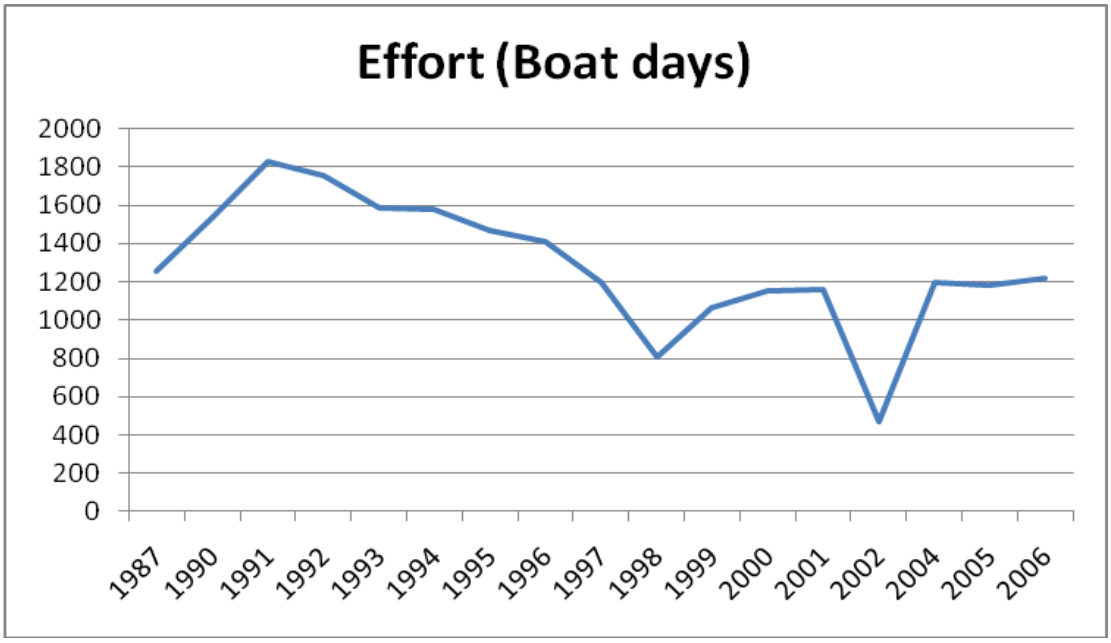


Figure 3: Fishing effort for the Malindi sports fishing club

2.2. Catch per unit effort

The highest recorded catches of Sailfish were experienced during the year 1991 when the catch per trip hit the 1.9 mark. From that time there has been decline in the CPUE reaching a level of 1 fish per trip in 2006. The reduced CPUE in 1998 can be associated to the *elnino* rains that pounded the area during the busy January to March period. The catches have however fluctuated from one year to the other with a good year being followed by a bad year as the figure 4 illustrates.

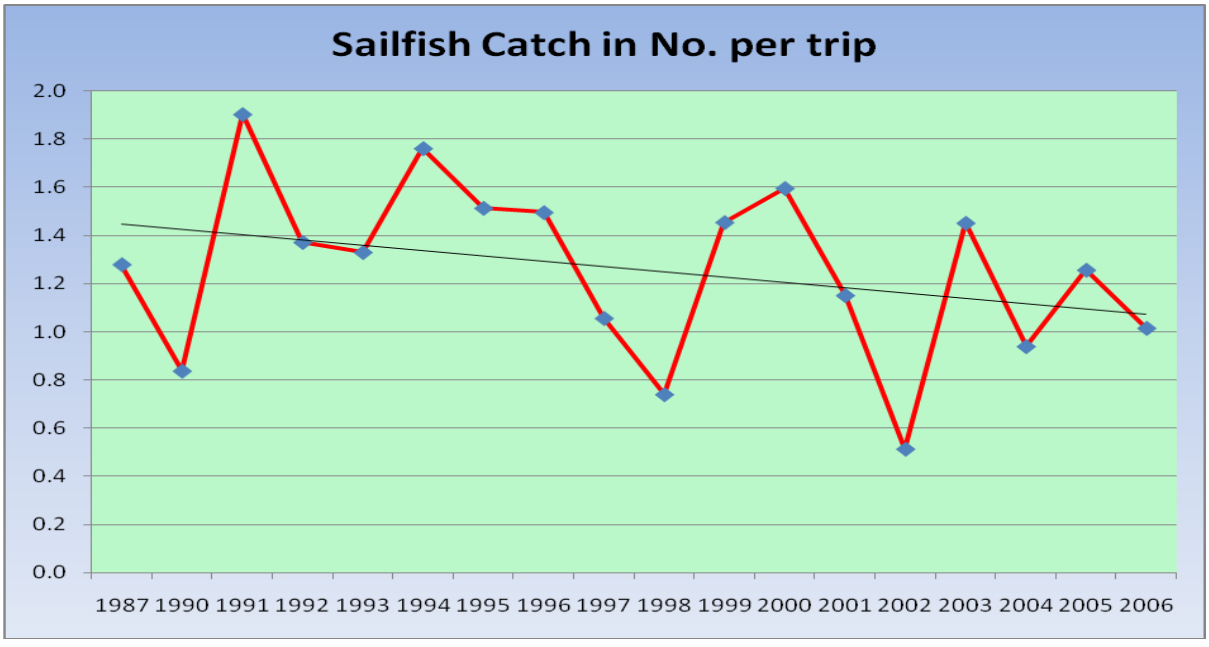
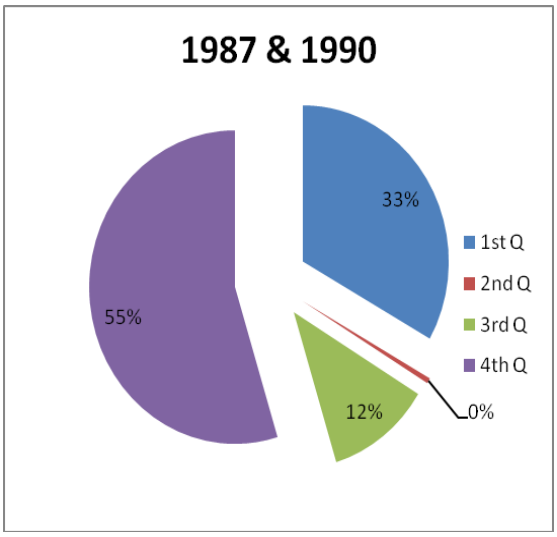


Figure 4: Sailfish CPUE

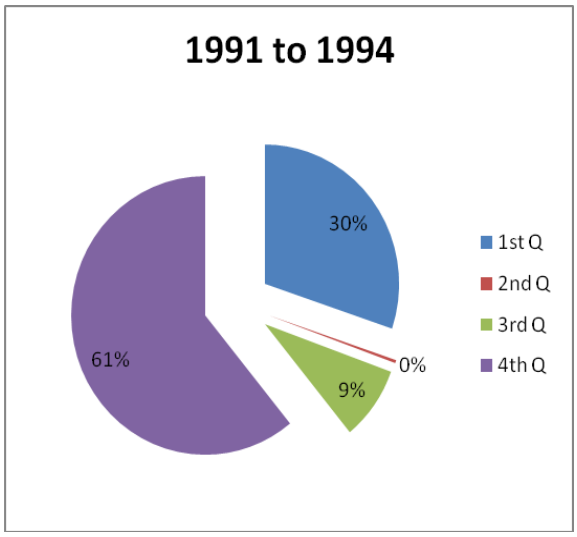
2.3 Quarterly catches over the years

From the 18 years catches duration, four durations have been selected to show the trends in the different quarterly periods. 1987 and 1990 were selected as the pre 1991 period and is represented by figure A while the years 1991 to 1994 were again grouped together, being the period when the highest catches were reported represented here by figure B. The years 1995 to 2000 that had a huge fluctuation in the catches and elnino season in between was taken as another distinct period and represented here by figure C while the years 2001 to 2006 that had a remarkable decline in the catches are illustrated by figure D.

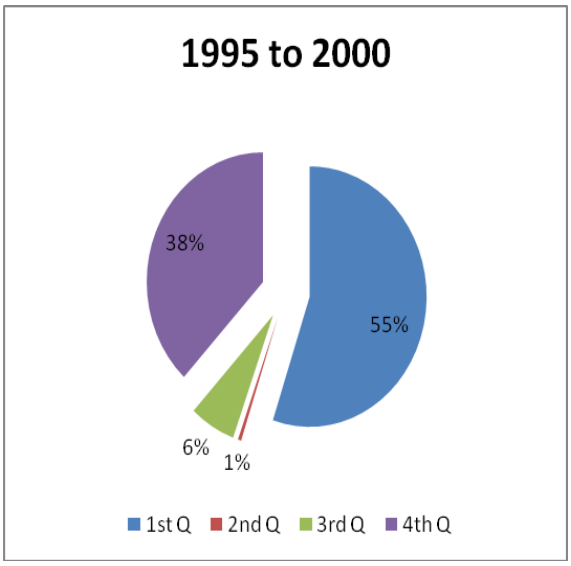
When the catches are subdivided into quarters, the fourth quarter of the year, that is October to December has the highest catches all the period except the 1995 to 2000 season when the first quarter (January to March) had the highest catch representing 51% of the total catches. During the whole reported fishing period, the second quarter (April to June) represents the lowest catches and did not attain higher than 1% of the total catch at any duration. The first and fourth quarters during the whole fishing period under review accounted for 90%bof the total catch.



A



B



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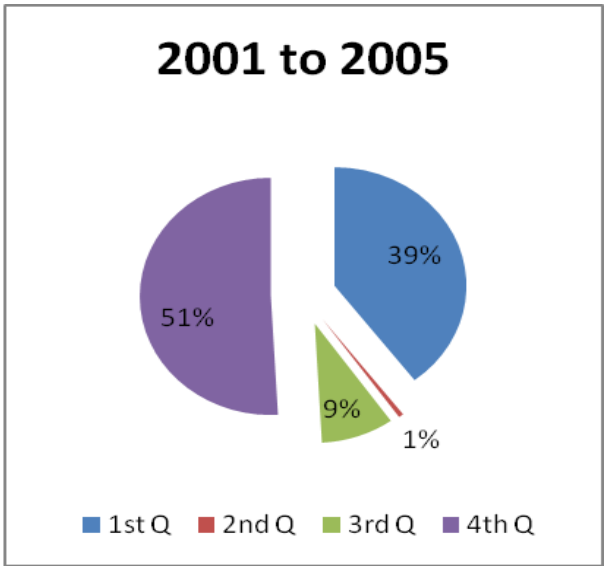

D

2.4 Tagging

The tagging exercise was started by the African Billfish Foundation in the 80s but was well documented from 1990. Initially, all the fish caught were retained but after the tagging exercise commenced, those tagged were were released back to the waters while those recaptured were weighed and released back to the waters. According to the records from the Malindi sports fishing club, the percentage of sailfish tagged by 1992 was 20%. By the year 2000 and more awareness to the fishers being undertaken, the rate of tagging increased to 30% and has since then risen to 75% by 2005. This has been a welcome move by the sports fishers who have also realised a decrease in the catch per unit effort and the need to conserve the fish for future.

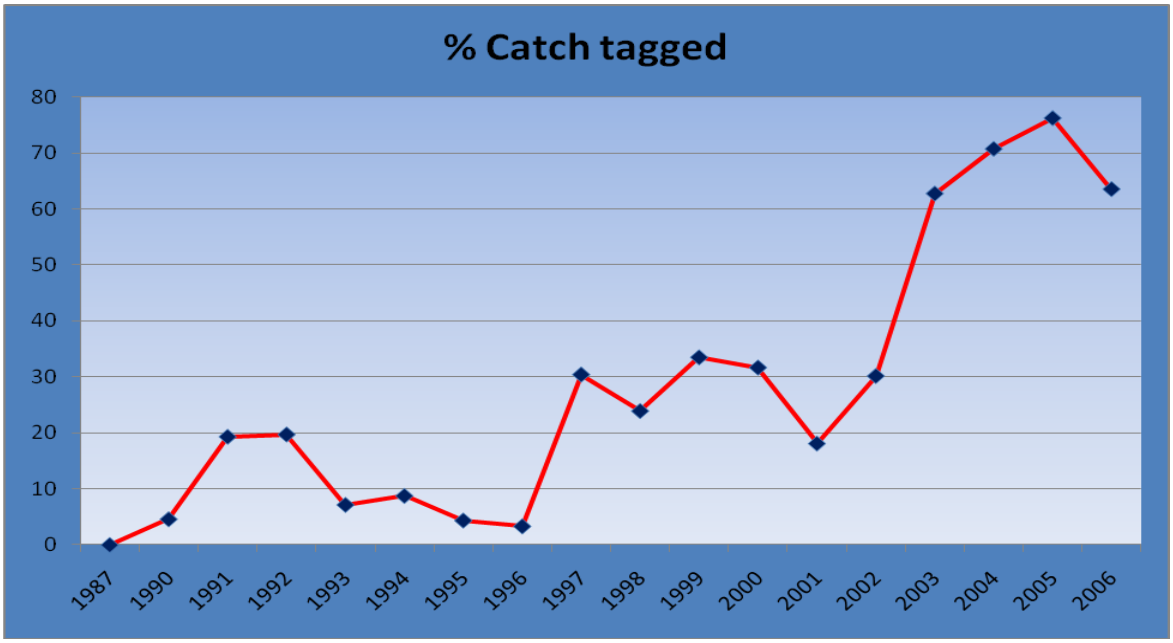

Figure 5: Percentage of the tagged sailfish between 1987 and 2006

There is a great difference between the month in regard to the tagging rates. There are two peak seasons for tagging of the sailfish. The most intense happens in October while the other on is during the month of March. Both months happen to be the period when large individuals are present in the fishery. During the months of March and September to November, the tagging rate is equal or above 25%. The months of May to August have the least ammount of tagged fish as there is a tendency for the sports fishers to land their catch due to the low catches experienced during the southeast monsoon. Despite the December and January months having low percentage of tagged fish, they represent the months with the hihest catches in numbers and also in tagged fish.

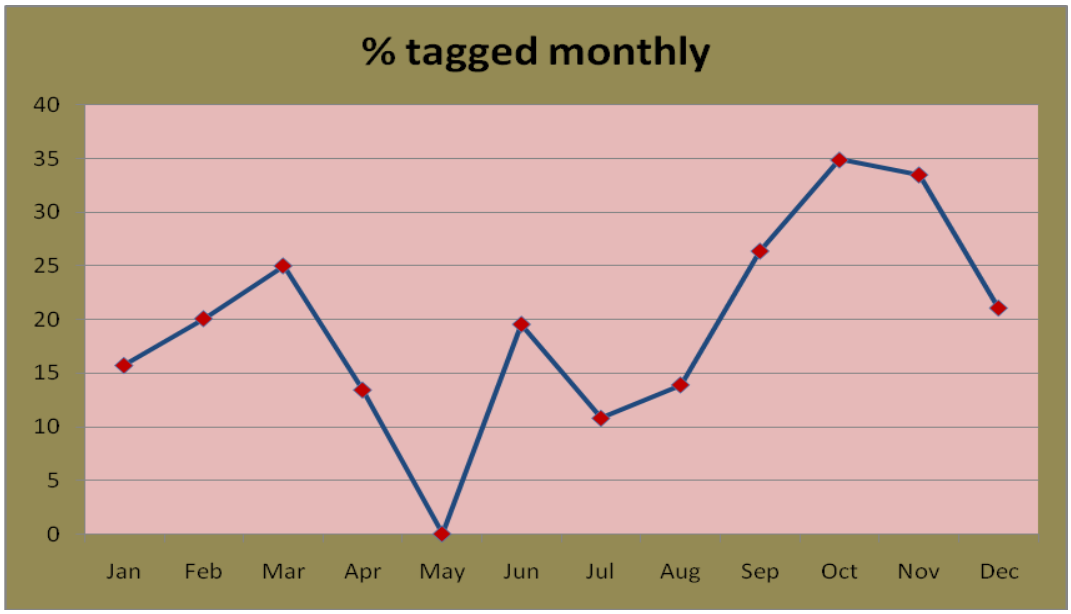

Figure 6: Monthly tagging rates

2.5 Seasonal fluctuation in weight

The average weight of the sailfish caught ranged between 24 and 27 Kilos. There are two pronounced peaks in the weights with the highest being during the month of September and the second peak appearing in the month of March. December and January had the lowest average weight. From the experiences of the sports fishers, the start of the season is when the large individuals are caught as they feed on sardines. They are later followed by the small sized fish that are in plenty during the month of December and January. The second peak of the Large sized fish are caught during the month of March, deep on the rifts outside the malindi banks mostly feeding on mackerrels.

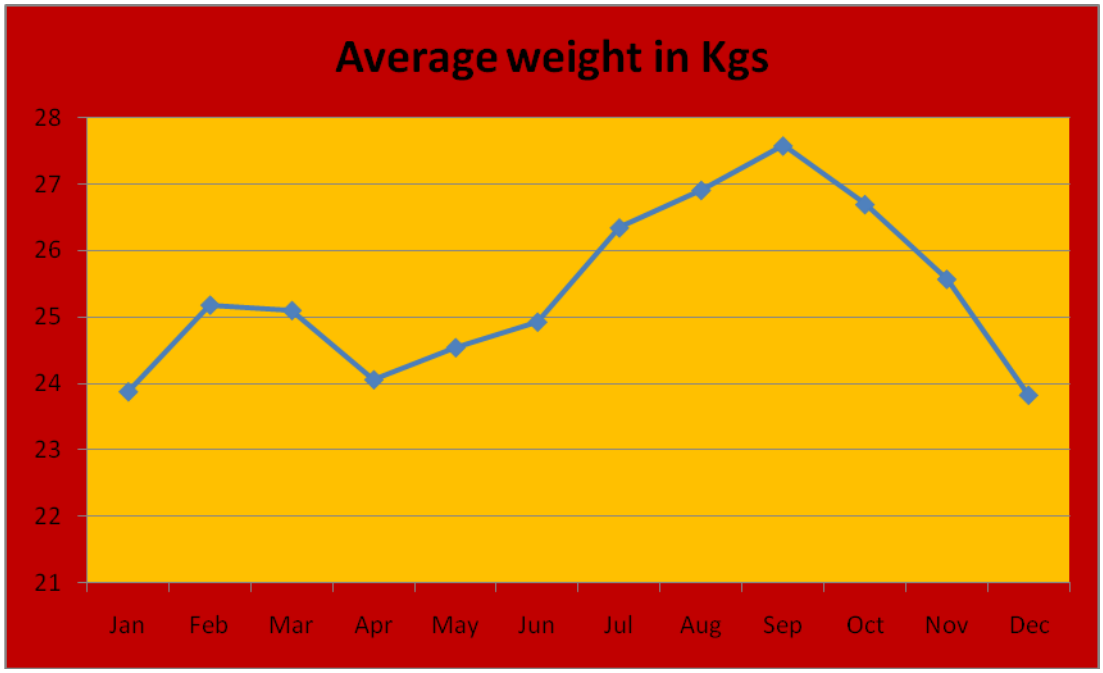

Figure 7: Average weight in Kgs