SAILFISH SPORTS FISHING OFF RIO DE JANEIRO STATE, BRAZIL (2002/08)

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SUMMARY

Iate Clube do Rio de Janeiro (ICRJ), in Rio de Janeiro City, Rio de Janeiro State, Brazil, helds sports fishing tournaments that gather anglers from several clubs. The tournaments occur from October to February, in the daylight savings time (one hour ahead of standard time), ranging from 8:00 a.m. to 4:00 p.m. converted to standard time. Data of 1,950 sailfish, Istiophorus platypterus, caught in those tournaments during 2002/08 seasons were analysed. The monthly CPUE values ranged from 0.05 to 3.47 fish per boat per day, and the highest values were always observed in December or January. The analysis based on time of the capture of 1,410 sailfish caught from 2002/03 to 2005/06 seasons showed the highest sailfish catches from 8:00 to 10:00 a.m., presenting a decreasing trend until the end of the fishing day. From the 90’s on, ICRJ anglers began to release most of the sailfish, bringing just the largest specimens, which could be records. In order to release the billfish they brought observers on board, that are usually biology students, biologists and professions alike. Sports fishing contributes with research, aiming at the release of billfish, and also helping the observers for their education, as a complementary field of biological studies.

KEYWORDS

Atlantic sailfish, Istiophorus platypterus, Fishery statistics, Catch/effort, Catch by time, Feeding hours, Sports fishery, Fishing effort

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1. Introduction

Offshore recreational fishing tournaments are practiced along the Brazilian coast, nevertheless they are concentrated mainly off Rio de Janeiro and Cabo Frio Cities (Rio de Janeiro State), Vitoria City (Espirito Santo State), Ilhabela City (Sao Paulo State), Salvador, Comandatuba and Canavieiras Cities (Bahia State), from October to February (spring/summer). From Natal City (Rio Grande do Norte State) they occur from September to December and in Fernando de Noronha archipelago from August to September (Arfelli and Amorim, 1981, Arfelli et al., 1994). They are practiced by rod and reel through surface trolling baits (Arfelli and Amorim, 1981).

The most important Atlantic sailfish, *Istiophorus platypterus*, fishing area is off Rio de Janeiro between “Cabo Frio” and “Ilha Grande” under influence of Cabo Frio upwelling, with surface temperatures from 22° and 24°C (Paiva and Pires-Junior, 1983). According to the anglers the fishing area is around 23°S and 42°-43°W.

Every year, usually from October to March, but occasionally in September, sailfish migrates to Southern Brazil, in order to spawn between the latitudes 20°-27°S, and longitudes 39°-48°W (Arfelli and Amorim, 1981). The monthly catches (in weight) from November to January were, respectively about 14%, 27% and 10% of the total catches of Santos longliners in the 1971-91 period (Hazin et al., 1994).

There are few papers on sport fishery in Brazil mainly about Iate Clube do Rio de Janeiro-ICRJ (Arfelli and Amorim, 1981; Arfelli et al., 1994; Amorim and Arfelli, 2001, Amorim and Silva, 2005, Amorim et al., 2006).

Arfelli et al. (1994) present a table with sport fishing catches (number and weight) and number of yachts of ICRJ from 1969/70 to 1991/92 fishing season. Also there were catch data (number, length and weight) by sex of billfish from Iate Clube do Espirito Santo, for December 1990.

The Instituto de Pesca has been monitoring game fisheries since 1979 (Amorim and Arfelli, 2001), in order to contribute to the conservation of sailfish, orientating tag & release and stimulating release, and since 1999/00 season almost all billfish has been released.

Amorim and Silva (2005) presented seasonal sailfish catch time and distribution from 1996/97 to 2003/04 and also sailfish monthly CPUE from 1996 to 2004 of YCI.

This paper analyzes ICRJ tournaments data from 2002/03 to 2007/08 seasons, and contributes to the knowledge of sailfish feeding hours and nominal catch per unit of effort.

2. Material and methods

The data used in this paper were the radio operator log sheets collected from the Fishery Department of Iate Clube do Rio de Janeiro. During the tournaments the anglers report every fish at the time it is hooked to the radio operator. Those tournaments occur in the warm season always in the daylight savings time of Brazil (one hour ahead). The catch time data were converted to regular time for the analysis of this paper.

The period analysed is from November/2002 to February/2008 and the data available of this period are in Table 1. There are two sets of sailfish catch in number of fish: Sample-1, that includes all catch with the correspondent effort available, totaling 1,950 fish, and Sample-2, that includes 1,410 fish which also presented the correspondent catch time. The catch time data available were from 2002/03 to 2005/06 seasons. There were no available sailfish data for the 2006/2007 season.

The data were analysed by month and season (October/February) and also by one hour class (8:01-9:00 a.m. to 3:01-4:00 p.m.) for the feeding hours.

Fishing effort was considered by the number of boats per fishing day. Each boat generally uses four hooks during eight hours of fishery.

The monthly nominal CPUE was estimated in number of sailfish caught per boat per day. In order to compare the seasonal nominal CPUE it was used December/January, the only months with data in all seasons.

The percentage of catch by season was used for the analysis of feeding time per hour class.
Table 1. Monthly data of sailfish caught off Rio de Janeiro, Brazil, from 2002 to 2008, during sports fishing season (Oct.-Feb.). Sample-1: fish caught; Sample-2: fish with catch time data.

<table>
<thead>
<tr>
<th>Season</th>
<th>Month</th>
<th>Fishing days (N)</th>
<th>Yacht (N)</th>
<th>Sample-1 (SAI - N)</th>
<th>Sample-2 (SAI - N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002/03</td>
<td>Nov./02</td>
<td>1</td>
<td>19</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Dec./02</td>
<td>3</td>
<td>105</td>
<td>277</td>
<td>277</td>
</tr>
<tr>
<td></td>
<td>Jan./03</td>
<td>2</td>
<td>70</td>
<td>124</td>
<td>124</td>
</tr>
<tr>
<td>2003/04</td>
<td>Nov./03</td>
<td>1</td>
<td>31</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Dec./03</td>
<td>4</td>
<td>124</td>
<td>290</td>
<td>288</td>
</tr>
<tr>
<td></td>
<td>Jan./04</td>
<td>2</td>
<td>62</td>
<td>62</td>
<td>50</td>
</tr>
<tr>
<td>2004/05</td>
<td>Dec./04</td>
<td>4</td>
<td>103</td>
<td>266</td>
<td>239</td>
</tr>
<tr>
<td></td>
<td>Jan./05</td>
<td>1</td>
<td>34</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>2005/06</td>
<td>Dec./05</td>
<td>4</td>
<td>92</td>
<td>220</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>Jan./06</td>
<td>3</td>
<td>55</td>
<td>149</td>
<td>148</td>
</tr>
<tr>
<td>2007/08</td>
<td>Oct./07</td>
<td>4</td>
<td>66</td>
<td>32</td>
<td></td>
</tr>
<tr>
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<td>Nov./07</td>
<td>1</td>
<td>16</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dec./07</td>
<td>5</td>
<td>125</td>
<td>211</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jan./08</td>
<td>2</td>
<td>72</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feb./08</td>
<td>1</td>
<td>13</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>38</td>
<td>987</td>
<td>1950</td>
<td>1410</td>
</tr>
</tbody>
</table>

3. Results and discussion

Data of 1,950 sailfish (*Istiophorus platypterus*) caught during November 2002 to February 2008 sports fishery seasons of ICRJ tournaments were analysed. The monthly CPUE of this species ranged from 0.05 (November 2002) to 3.47 (January 2008) and the highest was always observed in December (in the first three seasons) and January (in the last two seasons). The seasonal CPUE ranged from 1.89 to 2.51 (Figure 1). The lowest monthly CPUE values occurred in the beginning and in the end of the seasons due to the annual migration of sailfish to Southern Brazil.

The analysis of feeding time of 1,410 sailfish caught from 2002/03 to 2005/06 seasons showed the highest sailfish catches from 8:00 to 10:00 a.m. with a decreasing trend to the end of the fishing day (Figure 2). According to Beardsley *et al.* (1975), around 9:00 a.m. the first schools began to appear in Western North Atlantic, when the sailfish began to be hooked. Amorim and Silva (2005) analysing data of Yacht Club de Ilhabela from 1996/97 to 2003/04 seasons, found the highest sailfish catches at 11:00 a.m. (at the standard time).

Sailfish moves from north to southern Brazil in order to spawn (20°-27°S - 39°-48°W) and during this migration it is incidentally caught by tuna longliners (Arfelli and Amorim, 1981; Pimenta *et al.*, 2005 and 2007). Confirming the sailfish migration one fish tagged off Rio de Janeiro in December of 1996 was caught by longliner off Santos City in February 1997. According to the artisanal fishermen, they come close to shore in shallow water in order to spawn and they are caught by gill net. According to Arfelli and Amorim (1981), southern Brazil is an important spawning area. Two juveniles (around 15 cm) were found in the stomach of sailfish caught in the 70s (Zavala-Camin, 1981) and also a 75 cm-long juvenile sailfish was found by an angler from Iate Clube de Santos (ICS), Sao Paulo State.
During the sports fishing tournaments, observers participate in the trips releasing billfish. Also they can observe other pelagic fish, whales, dolphins and turtles contributing to other programs. The sports fishing contributes to the research, aiming at the release of almost all the billfish, and also helps the observers for their education as a complementary field of biological studies.

4. Conclusion

The highest monthly CPUE for sailfish were observed in December and January and the highest seasonal CPUE in 2005/06 (2.51 fish/boat/day).

The sailfish seems to feed more intensively from 8:00 to 10:00 a.m.
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References


