

Recent increase in the number of Southern right whales (*Eubalaena australis*) in Golfo San Jorge, Santa Cruz, Patagonia Argentina

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ABSTRACT

An increasing number of Southern right whales (SRW) has been recorded from May to September in the Golfo San Jorge, Patagonia, Argentina from La Lobería (46°07'S/67°38'W) to Caleta Olivia (46°26'S/67°31'W). Between 2004 and 2006, a total of 122 Southern right whales, including 10 calves, were recorded from shore and boats. The group size varied from 0 to 18 (Mode=2) in different groups. We used an I_{SRW} Index (Index of SRW=number of SRW per hour and days of effort, to better compensate for differences in sampling efforts due to weather restrictions). We considered the years 2004, 2005 and 2006 and only systematic fieldwork (July, August and September). Compared with 2004 ($I_{SRW}=0.0048$), in 2005 and 2006 we had an increase of 231.25% ($I_{SRW}=0.0159$), and 6.46% ($I_{SRW}=0.0051$) respectively. Interestingly we registered an $I_{SRW}=0.013$ for July 2005, due to the presence of 18 SRW in two consecutive days. However because this sighting was made from shore and the whales were far from the observation site, it was not possible to identify the whales in order to verify if they were the same whales during both days. Nevertheless this I_{SRW} may indicate that the number of SRW increased in the last years in the Golfo San Jorge. The increase in the number of SRW and the presence of mother with calves and mating groups suggest us that the La Lobería-Caleta Olivia region may be regarded as the southernmost wintering ground for Southern right whales in the Southwest Atlantic, extending the previous record more than 500km. Results presented in this paper show the relevance of this area for the species and the need of further researches.

KEYWORDS: southern right whales. Population. Increase number. Golfo San Jorge, Patagonia Argentina.

INTRODUCTION

The Southern right whale (SRW) (*Eubalaena australis*) (Desmoulins, 1822) is distributed down to 18°S (de Oliveira Santos *et al.*, 2001) with winter concentrations in southern Brazil, Uruguay, Argentina, Tristan da Cunha, Namibia, south of Mozambique, South Africa, Island St. Paul, southwest Australia, southeast Australia, Kemadec Islands and Chile (Rice 1998). This species migrates approximately 2000km from its feeding grounds to Peninsula Valdes (Best *et al.*, 1993) to begin its reproductive season in the protected waters of the area (Payne, 1986). The Argentine population registers an annual growth of 6.9% (Cooke, J.G. *et al.*, 2001). Very little information exists on this species once the whales leave Peninsula Valdes' waters. For the waters of Santa Cruz province published information is very scarce (Goodall and Galeazzi, 1986; Pérez *et al.*, 1995, Iñíguez *et al.*, 2003). We started to collect data systematically in 2004 (Belgrano *et al.*, 2005, 2006). The aim of this paper is to demonstrate an increase in the number of Southern right whales from 2004 to 2006 in this area.

MATERIAL AND METHODS

Between 2004 and 2006 data was collected from boats and land. Each sighting was defined as an independent or single event when a whale or a group of whales remained visible in the area under study for a period of time from just a few minutes to several hours.

Land-based observations were made from fixed points located at 46°14'S/67°36'W at a height of 20m above sea level. Scans of 3' in a 5' interval were conducted with Bushnell binoculars 16x50 to assess the presence of whales in the study area (Altmann, 1974; Mann, 1999).

To better determine the number of SRW per hour and days of effort we used an Index of SRW (I_{SRW} Index) where:

$$Y_{ijk} = \frac{(\# \text{ SRW})}{(\sum \text{min real obs}_{ijk})}$$

i=day of observation
j= month of observation
k=year of observation

$$I_{SRW} = \frac{(\sum Y_{ijk})}{(\text{Day of Obs}_{jk})}$$

j= month
k= year

For this study we consider the systematic fieldwork of July, August and September 2004, 2005 and 2006. For the I_{SRW} Index we include days with no sightings. The variable studied is the average of SRW per day for each month of each year.

RESULT AND DISCUSSION

Between 2004 and 2006, a total of 122 SRW, including 10 calves, were recorded. Group size varied from 0 to 18 animals (Mode=2). Table 1 shows the total of SWR sighting.

Year	Period	# SRW
2004	25 July - 8 August	16
2005	16 July - 29 September	73
2006	15 July - 8 September	33

Table 1: Number of SRW per month and per year

Table 2 shows the results of the I_{SRW} . It showed an increase of 231.25% (in 2005) and 6.46% (in 2006) compared with 2004.

Interestingly we registered an $I_{SRW}=0.013$ for July 2005, due to the presence of 18 SRW in two running days. However as this sighting was made from the shore and the whales were far from the observation site, it was not possible to identify the whales in order to verify if they were the same whales during both days. But the presence in the area of mother/calf and mating groups suggests that probably these were the same animals on both days.

	Year 2004	Year 2005	Year 2006
July	0.0019	0.013	0.0017
August	0.0029	0.0028	0.0028
September	0	0.0001	0.0006
Total	0.0048	0.0159	0.0051

Table 2: I_{SRW} per month and per year

Furthermore it is important to mention that the growth registered does not necessarily have to be constant over the years. In areas similar to ours, where a severe decline in SRW numbers due to commercial hunting was also registered, as the species began to recover, the population growth suffered fluctuations that have been registered

along a certain period of time. Such a phenomenon has occurred in Brazil, where in the 80's virtually no whales were found, in 2003 a population growth of almost 30% was registered and in subsequent years there has been a decrease in the numbers of individuals (K. Groch, coms pers.).

Nevertheless this I_{SRW} may indicate that the number of SRW has increased since 2004 in the Golfo San Jorge. The increase in the number of SRW and the presence of mother's with calves and mating groups suggests us that the La Lobería-Caleta Olivia region may be regarded as the southernmost wintering ground for Southern right whales in the Southwest Atlantic, extending southward the previous record more than 500km. Results presented in this paper, even though preliminary, show the relevance of this area for the species and the need of further researches.

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