

Sighting and stranding of southern right whales (*Eubalaena australis*) off Santa Cruz, Patagonia Argentina (1986-2003)

Miguel Iñíguez ^{*,+}, J. Belgrano ^{*}, A. Tomsin ^{*}, C. de Haro ^{*}, C. Gribaudo [°] and V. Tossenberger ^{*,×}

^{*} Fundación Cethus - Juan de Garay 2861 Dto "3" - (B1636AGK) - Olivos - Pcia. de Buenos Aires - Argentina, E.mail: tovera@sanjulian.com.ar

⁺ Municipalidad de Puerto San Julián - Pcia. de Santa Cruz

[°] Dirección de Museos de Caleta Olivia - Pcia. de Santa Cruz.

[×] Whale and Dolphin Conservation Society - Argentina

ABSTRACT

The Southern right whale (SWR) (*Eubalaena australis*) is distributed down to 18°S, with winter breeding grounds concentrated in the southwestern Atlantic, Africa and Oceania. Very little information exists on this species once the whales leave the waters of the Peninsula Valdes, Argentina. For the waters of Santa Cruz province published information is very scarce and the objective of this paper is to present new records of *E. australis* for this province.

From 1986, information on sightings and strandings of SRWs was collected by the authors, with details of the following recorded for each sighting: date, time, number of individuals, sex/age class, behaviors, location, tide and weather conditions. Data were collected using the *focal group/ individual sampling method*. Individuals were assigned to age categories using the characteristics, definitions and assumptions detailed in Payne *et al.* (1983): newborn, juveniles and adults. For the purpose of this work, Santa Cruz province was divided into three areas: North Santa Cruz (NSC)(from Ramón Santos to Bahía Laura), Central Santa Cruz (CSC)(from Bahía Laura to Ria Coyle) and South Santa Cruz (SSC) (from Ria Coyle to Punta Dungenes). The presence of southern right whales was recorded on 75 occasions along the coast of Santa Cruz province.

Between 1986 and 1998, the observation effort was greatest at SSC but from then, effort was equal for the three areas and year round. Group size ranged from 1 to 12 individuals ($\bar{X} = 2.28$, $SD = 2.15$). The presence of calves was recorded six times. The majority of sightings were in the SSC area (53.33%), followed by CSC (24%) and NSC (22.66%). For NSC, the presence of SRWs was reported - in order of importance - during autumn, spring and winter; for CSC their presence was reported mainly during spring/summer and in winter; and for SSC it was reported during autumn, winter and summer. Cabo Virgenes had the largest number of observations of *E. australis* (n=35), where whales were observed feeding during three observations.

Only one stranding of an 11m. juvenile was reported for the coastal waters of Santa Cruz. Although the information presented in this work is very preliminary, we can conclude that the waters of Santa Cruz are of great importance for the migration and/or reproduction of SRWs. The waters of the Reserva Natural Provincial Cabo Virgenes are an important area for migration and as feeding grounds for this species. The corresponding sightings in the north area would suggest a possible recovery of old reproduction areas. Systematic studies along the Santa Cruz coast will allow us to develop a fuller understanding of the importance of this area for this species.

KEYWORDS: SOUTHERN RIGHT WHALE; SOUTH ATLANTIC; INCIDENTAL SIGHTINGS; STRANDING

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 the south of 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 their reproductive season in the protected waters of the area (Payne 1986). The populations from Argentina and South Africa register an annual growth of 7% (Best 1990, Payne *et al.* 1990). Very little information exists on this species once the whales leave the waters of the Peninsula Valdes. For the waters of Santa Cruz province published information is very scarce (Goodall and Galeazzi, 1986; Pérez *et al.*, 1995; Tossenberger *et al.*, 2000). The objective of this work is to present new records of *E. australis* for Santa Cruz province.

MATERIAL AND METHODS

From 1986, information on sightings and strandings of SRWs were collected by the authors. For each sighting, the following information were obtained: date, time, number of individuals, sex/age class, behaviors, location, tide and weather conditions. Data were collected using the focal group sampling method (Altmann, 1974; Mann, 1999). 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 hours. The relative distances between individuals was estimated in terms of whale-lengths (1 wl=15m). Groups were defined as individuals swimming in a coordinated manner within 100m of each other and performing the same behavior. We continuously recorded all states of behaviour. To describe and to evaluate the behaviors of the SRWs, we defined four behavioral states: feeding, travelling, resting and socializing. Individuals were assigned to age categories using the characteristics, definitions and assumptions detailed in Payne *et al.* (1983): newborn, juveniles and adults. Observations were carried out using boats and from the land. Unpublished data from occasional sightings have also been included.

The Province of Santa Cruz was divided into three areas: North Santa Cruz (NSC)(from Ramón Santos to Bah Laura), Central Santa Cruz (CSC)(from Bah Laura to Ria Coyle) and South Santa Cruz (SSC) (from Ria Coyle to Punta Dungenes)(Fig 1).

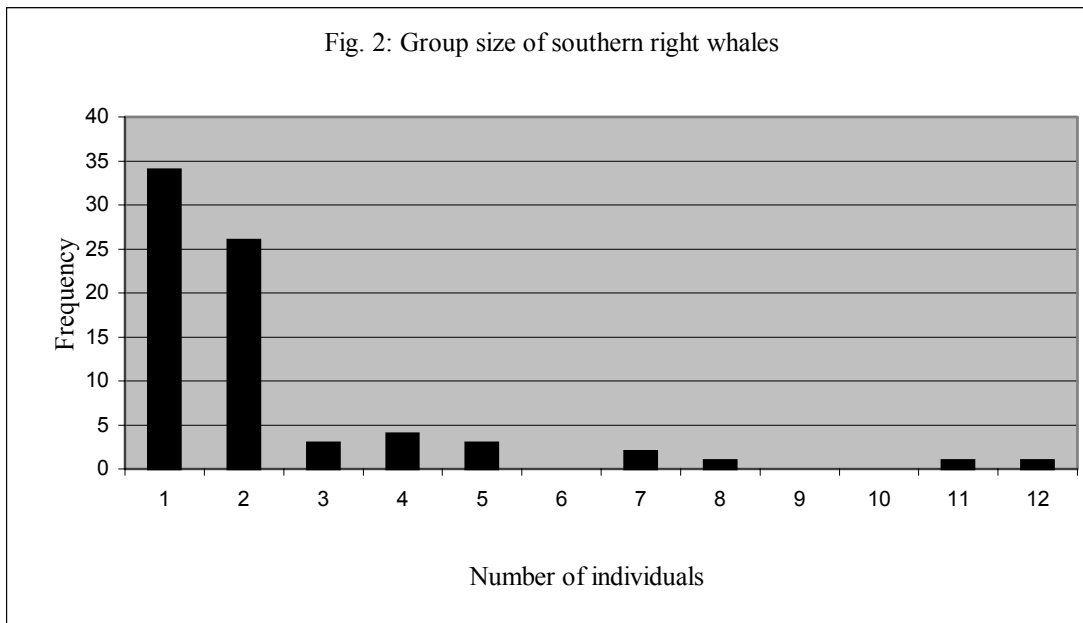


Fig. 1. Santa Cruz province location of SRW sightings and stranding (1986-2003).

RESULTS

Sightings

A total of 75 sightings (171 whales) were recorded between February 1986 and February 2003, NSC (n=17), CSC (n=18) and SSC (n=40). Group size ranged from 1 to 12 individuals ($\bar{X}=2.28$, $SD=2.15$), with 50.29% of the observed groups containing just a single whale (Fig. 2).



The largest recorded group contained 12 (n=1) SRWs and it was observed in 6 July 1989 in Ria Gallegos. Between 20th and 25th of July 2000, 11 whales were observed in Cabo Virgenes.

38.66% of the reported sightings were in February and April (table 1).

Table 1 summarizes sightings of SRWs per month and for each location.

		J	F	M	A	M	J	J	A	S	O	N	D	Total
NSC	<i>LL</i>								1	1			1	3
	<i>CO</i>					1	1		2	2		1	1	8
	<i>CB</i>								1					1
	<i>RD</i>					1	1			1		2		5
CSC	<i>ES</i>								2					2
	<i>PG</i>												1	1
	<i>SJ</i>		1					1			1	1	1	5
	<i>SC</i>	3	1											4
	<i>ML</i>	1	1											2
SSC	<i>RG</i>				1	1		1		1				4
	<i>CL</i>		1											1
	<i>CV</i>	4	11	2	13		3	2						35
Total		8	15	2	14	3	5	4	6	5	1	5	7	75

Table 1: Sightings of southern right whales by months and locality (1986-2003). References: Northern Santa Cruz (NSC), Central Santa Cruz (CSC), Southern Santa Cruz (SSC), La Loberia (LL), Caleta Olivia (CO), Cabo Blanco (CB), Ria Deseado (RD), El Salado (ES), Playa Grande (PG), San Julian (SJ), Santa Cruz (SC), Monte León (ML), Cañadon Lucacho (CL), Río Gallegos (RG), Cabo Virgenes (CV)

The presence of SRWs (6 adults + 1 calf) in Cabo Blanco was reported during three weeks in August 2000. Off Cabo Virgenes, SRWs were reported during 20 days of April 2000 and 8 days of July 2000. Mother-calf pair observations represent 8% of all sightings. The presence of juveniles were registered in 8% of the sightings.

--Feeding

At Cabo Virgenes, an adult SRW was observed feeding on krill in February 1995. Two SRWs were observed also feeding in June 2002 and another one feeding on isopods (*Edotia magallanica*) and euphausiids in February 2003.

Strandings

Only one stranding was reported for the coastal waters of Santa Cruz. In 18th February 2000, a 11m long juvenile stranded and was rescued after 7:30hrs ashore at Ria Santa Cruz (Tossenberger *et al.*, 2000)

DISCUSSION

Observations of SRWs were carried out throughout the year off Santa Cruz province. Pérez *et al.* (1995) reported the presence of *E. australis* during the summer months along Santa Cruz's coast. Goodall and Galleazi (1986) registered the presence of SRW in Ria Deseado during the months of May, August and October. In this study, sightings of SRW are reported during the months of May, June, September and November. In Monte León, Pérez *et al.* (1995) reported 63.3% of their sightings of this species. In this study, the largest number of observations of *E. australis* were recorded Cabo Virgenes (51%), Caleta Olivia (12%) and Ria Gallegos (10%) (table 1), with only 1% in Monte Leon. The greatest percentage of sightings were in the SSC area(53.33%) (table 1). In NSC, sightings coincided with the breeding season (winter and spring) of this species in the Peninsula Valdes (Payne 1986). The presence of calves was recorded on six occasions off Santa Cruz province. In Cabo Blanco a calf with six adult whales was observed during the month of August 2000. Seemingly this group remained in the area some three weeks, however, as they were not photoidentified, we cannot be sure that they were the same individuals. SRW populations from Argentina and South Africa registered an annual growth of 7% (Best 1990, Payne *et al.* 1990), which could suggest a recovery of old breeding areas like it could be the Gulf San Jorge.

CONCLUSIONS

Although the information presented in this study is very preliminary, we can conclude that the waters of Santa Cruz are of great importance for the migration and/or reproduction of this species. The waters of the Reserva Natural Provincial Cabo Virgenes are an important area for the migration and as feeding grounds for this species. The corresponding sightings in the north area would suggest a possible recovery of old reproduction areas. Systematic studies along the Santa Cruz coast will allow us to develop a fuller understanding of the importance of this area for this species.

Acknowledgements

The authors want to thank to following people and institutions for their support during fieldworks: F. Anglesio, BIM 4 (Armada Argentina), CEMA, C. Cendrón, J and C Combina, E. D'Elia, Dirección de Fauna –Consejo Agrario Provincial, Dirección Recursos Naturales – CAP, M. Failla, D. Fueyo, M. and R. García, A. Mosca, A. Mosler, P. Moy, M. and M. Oliva Day, J. Perancho, A. Pérez Carrera, C. Pozzi, Prefectura Naval Argentina (Puerto Deseado, Puerto San Julian, Puerto Santa Cruz, Río Gallegos, Cabo Virgenes), T. Rodríguez and family, R. Saavedra, E. Sendes, Servicio de Hidrografía Naval Argentina - Cabo Virgenes, Subsecretaria de Medio Ambiente –Province of Santa Cruz, Subsecretaria de Pesca y Actividades Portuarias - Province of Santa Cruz, V.H. Temporelli and family, Tommy Color, P. Walker and family, Warden of Reserva Natural Provincial Cabo Virgenes, This proposal was financial supported by Municipalidad de Puerto San Julian and Whale and Dolphin Conservation Society (England), Cetacean Society International (USA).

Literature cited

- Altmann, J.A. 1974. Observation study of behavior: sampling methods. *Behavior* 49: 227-267.
- Best P.B., R. Payne, V. Rowntree, J.T.Palazzo and M.D.C. Both. 1993. Long-range movements of South Atlantic right whales, *Eubalaena australis*. *Marine Mammal Science* 9:227-234.
- de Oliveira Santos, M.C., Siciliano S., Pacheco de Souza, Sh., Altmayer Pizzorno, J.L. 2001. Occurrence of southern right whales (*Eubalaena australis*) along southeastern Brazil. *J. Cetacean Res. Manage* (Special Issue) 2, 153-156.
- Goodall, R.N.P. y A.R. Galeazzi. 1986. Recent Sightings and Strandings of Southern Right Whales off Subantarctic South America and the Antarctic Peninsula. *Rep. Int. Whal. Commn.* Special Issue 10: 173-176.
- Payne, R., O. Brazier, E. Dorsey, J. Perkins, V. Rowntree and A. Titus. 1983. External features in southern right whales (*Eubalaena australis*) and their use in identifying individuals. Pp. 371-445. *In: R. Payne (ed.) Communication and Behavior of Whales AAAS Selected Symposia Series 76.* Westview Press, Boulder, Colorado. 643pp.
- Payne, R. 1986. Long term behavioral studies of the southern right whale (*Eubalaena australis*). *Reports of the International Whaling Commission* (Special Issue 10):161-167.
- Pérez, F., P. Sutton y A. Vila. 1995. Aves y Mamíferos Marinos de Santa Cruz, recopilación de los relevamientos realizados entre 1986 y 1994. *Boletín Técnico de la Fundación Vida Silvestre Argentina.* N°26: 1- 51.
- Mann, J. 1999. Behavioral sampling methods for cetaceans: a review and critique. *Marine Mammal Science.* 19 (1): 102-122.
- Rice D.W. 1998. *Marine Mammals of the World: Systematics and Distribution.* Special Publication Number 4, The Society for Marine Mammalogy, Lawrence, KS.
- Tossenberger, V.P., M.A. Iñíguez y C.M.Pozzi. 2000. Varamiento y rescate de una ballena franca austral (*Eubalaena glacialis australis*) en la Ria de Santa Cruz, Pcia. Santa Cruz, Argentina. (Resumen) 9ª Reunión de Trabajo de Especialistas en Mamíferos Acuáticos de América del Sur y 3º Congreso de SOLAMAC. 30 Octubre- 3 Noviembre 2000. Buenos Aires, Argentina.