

SOUTH-WEST ATLANTIC RIGHT WHALES *EUBALAENA AUSTRALIS* (DESMOULINS, 1822) DISTRIBUTION NEARBY THE MAGELLAN STRAIT

DISTRIBUCIÓN DE LA BALLENA FRANCA *EUBALAENA AUSTRALIS* (DESMOULINS, 1822) DEL ATLÁNTICO SUROCCIDENTAL CERCA DEL ESTRECHO DE MAGALLANES

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Southern right whales *Eubalaena australis* (Desmoulins, 1822)^I formerly occurred in very large numbers in the Southern Hemisphere, particularly in coastal waters of the southern part of Australia, New Zealand, American and African continents, as well as in most of the islands between 30°S and 60°S (Townsend 1935, Matthews 1938, Dakin 1963). It has been estimated that by the beginning of its exploitation (late XVIII century), there were between 60,000 and 160,000 individuals. However, severe depletion of this species by commercial whaling may have reached as low as 200-300 individuals by 1920 (Anonymous 2001, Jackson *et al.* 2007).

Off both Pacific and Atlantic coast of South America southern right whales were caught extensively (Townsend 1935). Historical whaling accounts from Chile referred to a well known catching ground called the "Coast of Chile Ground". This stock of whales seems have been distributed between 30°S and 50°S (Townsend 1935). Based on the logbooks

of Yankee and French whalers, and on Chilean whaling catch data it has been estimated that around 9,000 individuals were hunted there between 1785 and 1976 (Aguayo-Lobo *et al.* submitted²). Along the Atlantic coast of South America, southern right whales were caught off southern Brazil, and along Uruguay and Argentina coasts south to Tierra del Fuego, with a large proportion of whales obtained offshore in the so called "Brazil" and "False" banks (Townsend 1935). It is estimated that 29,568 southern right whales were caught in the Brazil bank between 1772 and 1812 (Richards 1994).

Unlike in the South-East Pacific, where a slow recovery of the southern right whales population has been supported by the increasing number of sightings and extended distribution north up to Perú (Aguayo-Lobo & Torres 1986, Aguayo-Lobo *et al.* 1992, Van Waerebeek *et al.* 1992, Van Waerebeek *et al.* 1998, Santillán *et al.* 2004, Olavarria *et al.* 2005³,

^I The taxonomy of right whales has been discussed in recent years. Rice (1998) proposed all right whales species plus the bowhead belonged to the genus *Balaena* Linnaeus, 1758. However, genetic evidence supported the earlier separation retaining the scientific name *Eubalaena australis* (Desmoulins, 1822) for the southern hemisphere right whale (Rosebaum *et al.* 2000).

² Aguayo-Lobo A., J. Acevedo, J.L. Brito, C. Olavarria, R. Moraga & C. Olave submitted. La ballena franca de sur, *Eubalaena australis* (Desmoulins 1822) en aguas chilenas: análisis de sus registros desde 1976 a 2008. *Revista de Biología Marina y Oceanografía*.

³ Olavarria C., M. Flores & R. Moraga 2005. Update on the eastern South Pacific southern right whale population. Report SC/7/BRG12 to the Scientific Committee of the International Whaling Commission. Ulsan, Korea. 30 May – 10 June.

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Aguiayo-Lobo *et al.* submitted), in the South-West Atlantic it has been documented a steady recovery, particularly for Península Valdés, Argentina (Payne *et al.* 1990, Cooke *et al.* 2001), but also for Brazil (Castello & Pinedo 1979, de Oliveira Santos *et al.* 2001, Groch *et al.* 2005) and Uruguay (Piedra *et al.* 2006, Costa *et al.* 2007). Southern right whales have been recorded particularly in the southern part of Argentina (Santa Cruz province) (Goodall & Galeazzi 1986, Pérez *et al.* 1995, Tossenberger *et al.* 2000⁴, Iñíguez *et al.* 2003⁵, Belgrano *et al.* 2008⁶), where some whales have been observed entering the Chilean Magellan Strait waters. Gibbons *et al.* (2006) analyzed contemporary sighting and stranding data of this species in the southern Chilean fjords finding that it only distributes at the central and eastern parts of the Magellan Strait and Beagle channel. Given the closest proximity to the range of the South Atlantic population, these whales were assumed to correspond with that population rather than with the South-East Pacific off Chile-Perú.

In this note we review the distribution of southern right whales in the area nearby the eastern entrance to the Magellan Strait, considering records from the nearby province of Santa Cruz, Argentina (Iñíguez *et al.* 2003) and the southern Chilean fjords (Gibbons *et al.* 2006), additionally to unreported records in both areas, with the aim of examining the local distribution of the species across the border between Argentina and Chilean waters.

In the area of Santa Cruz, Argentina, sightings have been recorded since 1986. We include here those records nearby Cabo Vírgenes and Punta Dungeness as in Iñíguez *et al.* (2003), as well as new records from further research undertaken in the area by Fundación Cethus since 2004. In the Chilean Patagonian and Fuegian channels and

fjords, extensive surveys for cetaceans have been undertaken between 1997 and 2005 as in Gibbons *et al.* (2006). Further surveys have been undertaken by the Centre for Quaternary Research (CEQUA) in the fjords and channels at the central and western portions of the Magellan Strait, as well as in southern channels between 2003 and 2008.

Sixty-nine sightings of southern right whales have been recorded in the study area from 1985 and every year of the last nine years (Fig. 1, Table 1). Most of them have been concentrated in the Cabo Vírgenes area, with fewer in Punta Dungeness and in the central and eastern portions of the Magellan Strait. Most of the sightings were recorded during January, February and April, however this may be correlated to the greater sighting effort occurred in these months (data not shown).

The available data supports that the area nearby the eastern entrance of the Magellan Strait, including Cabo Vírgenes and Punta Dungeness, is used by southern right whales in recent times, similar to what occurred during early stages of commercial whaling by the distribution of Yankee whalers catches in the surrounding area (Townsend 1935). The apparent increasing in sightings from 90's decade might reflect the steady recovery of the South Atlantic population (Payne *et al.* 1990, Cooke *et al.* 2001), given that the eastern area of the Magellan Strait was extensively surveyed by experienced researchers searching for Commerson's dolphins that did not observed southern right whales there (Venegas & Atalah 1987, Leatherwood *et al.* 1988, Venegas 1996, Lesrauwaet *et al.* 2000).



Fig. 1. Distribution of southern right whales nearby the eastern entrance to the Magellan Strait.

⁴ Tossenberger V.P., M.A. Iñíguez & 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. In "9^a Reunión de Trabajo de Especialistas en Mamíferos Acuáticos de América del Sur y 3^o Congreso de SOLAMAC." Buenos Aires, Argentina.

⁵ Iñíguez M., J. Belgrano, A. Tomsin, C. de Haro, C. Gribaudo & V. Tossenberger 2003. Sightings and stranding of southern right whales (*Eubalaena australis*) off Santa Cruz, Patagonia, Argentina (1986-2003). Report SC/55/BRG8 to the Scientific Committee of the International Whaling Commission. Berlin, Germany 26 May - 6 June, 2003.

⁶ Belgrano J., C. Gribaudo, D. Arcucci, F. Kröhling & M. Iñíguez 2008. Recent increase in the number of Southern right whales (*Eubalaena australis*) in Golfo San Jorge, Santa Cruz, Patagonia Argentina. Report SC/60/BRG4 to the Scientific Committee of the International Whaling Commission. Santiago, Chile. 1 - 10 June.

TABLE 1. Sightings of southern right whales nearby the eastern entrance to the Magellan Strait.

Date	Location	N	Source
11-11-1985	Laredo Bay	1	Gibbons <i>et al.</i> 2006
26-12-1986	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Pérez <i>et al.</i> 1995
26-1-1994	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Íñiguez <i>et al.</i> 2003
27-1-1994	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Íñiguez <i>et al.</i> 2003
5-2-1994	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Íñiguez <i>et al.</i> 2003
6-2-1994	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Íñiguez <i>et al.</i> 2003
5-2-1995	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	4 (1 calf)	Íñiguez <i>et al.</i> 2003
5-2-1995	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Íñiguez <i>et al.</i> 2003
5-2-1995	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	2	Íñiguez <i>et al.</i> 2003
6-2-1995	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	2	Íñiguez <i>et al.</i> 2003
12-2-1995	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Íñiguez <i>et al.</i> 2003
17-2-2000	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	1	Íñiguez <i>et al.</i> 2003
6-3-2000	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	1	Íñiguez <i>et al.</i> 2003
10-3-2000	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	1	Íñiguez <i>et al.</i> 2003
1 to 21-4-2000	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	1 to 4 per day	Íñiguez <i>et al.</i> 2003
20 to 25-07-2000	Boca Estrecho Magallanes 52°30'S; 68°28'W	up to 11	Íñiguez <i>et al.</i> 2003
26 to 28-7-2000	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	5	Íñiguez <i>et al.</i> 2003
28-1-2001	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	2	Íñiguez <i>et al.</i> 2003
12-2-2001	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	2	Íñiguez <i>et al.</i> 2003
13-4-2001	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Íñiguez <i>et al.</i> 2003
13-4-2001	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	3	A. Verner . This report
14-4-2001	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	3	A. Verner . This report
14-4-2001	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Íñiguez <i>et al.</i> 2003
14-4-2001	Boca Estrecho Magallanes 52°30'S; 68°28'W	1	Suarez. This report
17-4-2001	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Íñiguez <i>et al.</i> 2003
14-1-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	1	Íñiguez <i>et al.</i> 2003
1-2-2002	Dungeness	1	Gibbons <i>et al.</i> 2006
7-2-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	1	Íñiguez <i>et al.</i> 2003
1-4-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	3	Íñiguez <i>et al.</i> 2003
1-4-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	2	Íñiguez <i>et al.</i> 2003
3-4-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	3	Íñiguez <i>et al.</i> 2003
6-4-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	2	Íñiguez <i>et al.</i> 2003
12-4-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	4	Íñiguez <i>et al.</i> 2003
12-4-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	2	Íñiguez <i>et al.</i> 2003
13-4-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	1 (1 calf)	Íñiguez <i>et al.</i> 2003
18-4-2002	Boca Estrecho Magallanes 52°30'S; 68°28'W	2	Íñiguez <i>et al.</i> 2003
22-4-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	1	Íñiguez <i>et al.</i> 2003
6-6-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	2	Íñiguez <i>et al.</i> 2003
22-6-2002	Pingüinera Cabo Virgenes 52°22'S; 68°25'W	7	Íñiguez <i>et al.</i> 2003
30-6-2002	Boca Estrecho Magallanes 52°30'S; 68°28'W	5	Íñiguez <i>et al.</i> 2003
30-6-2002	Boca Estrecho Magallanes 52°30'S; 68°28'W	3	Hugo Menichelli. This report
4-2-2003	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	2	Íñiguez <i>et al.</i> 2003
6-2-2003	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	2	Íñiguez <i>et al.</i> 2003
25 to 27-6-2003	Between Daniel & Catalina Point	30 (groups of 1-3)	Gibbons <i>et al.</i> 2006
1-8-2003	Dungeness	2 – 3	Gibbons <i>et al.</i> 2006
24-1-2004	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Fundación Cethus. This report
25-1-2004	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	2	Fundación Cethus. This report
25-1-2004	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	1	Fundación Cethus. This report
26-1-2004	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	2	Fundación Cethus. This report
26-1-2004	Cabo Virgenes 52°19'59.8"S; 68°21'20.7"W	5	Fundación Cethus. This report

27-1-2004	Cabo Vírgenes 52°19'59.8"S; 68°21'20.7"W	1	Fundación Cethus. This report
27-1-2004	Cabo Vírgenes 52°19'59.8"S; 68°21'20.7"W	2	Fundación Cethus. This report
27-9-2004	Punta Arenas	1 calf	Gibbons <i>et al.</i> 2006
29-3-2005	Dungeness	1	Gibbons <i>et al.</i> 2006
9-9-2005	Paso Ancho 53°13'S; 70°41'W	1	Gibbons <i>et al.</i> 2006
11-9-2005	30 kms south of Punta Arenas	2 (1 calf)	Gibbons <i>et al.</i> 2006
13-9-2005	Paso Ancho 53°28'S; 70°29'W	1	Gibbons <i>et al.</i> 2006
14-5-2006	Cabo Vírgenes 52°19'59.8"S; 68°21'20.7"W	1	Fundación Cethus. This report
14-5-2006	Pingüinera Cabo Vírgenes 52°22'S; 68°25'W	1	Fundación Cethus. This report
14-5-2006	Pingüinera Cabo Vírgenes 52°22'S; 68°25'W	2	Fundación Cethus. This report
1-6-2006	San Gregorio Bay	1	Gibbons <i>et al.</i> 2006
May-07	Dungeness		Eduardo Barros. This report
Jun-07	Cabo Vírgenes 52°19'59.8"S; 68°21'20.7"W	11 individuals (not sure composition)	Jorge Perancho. This report
12-7-2007	Dungeness		Chilean Navy Lighthouse personel. This report
26-1-2008	Cabo Vírgenes 52°19'59.8"S; 68°21'20.7"W	1 (1 calf)	Fundación Cethus. This report
30-1-2008	Boca Estrecho Magallanes 52°30'S; 68°28'W	1	Fundación Cethus. This report
2-2-2008	Boca Estrecho Magallanes 52°30'S; 68°28'W	2 (1 calf)	Fundación Cethus. This report
Jun-08	Dungeness	3(1 calf)	Chilean Navy Lighthouse personel. This report
Jul-08	Dungeness		Thomas Colnot. This report

From a local management perspective, in Chile two distinct management units should be considered when evaluating southern right whales, the Chile-Perú stock distributed off Pacific coast and the South Atlantic stock that distributes along the Magellan Strait and the Beagle Channel. This has not been clear in the past as a small portion of whales reported for Chile were in fact caught nearby the South-West Atlantic south of Tierra del Fuego and near the eastern entrance of the Magellan Strait, likely including whales from that ocean basin and incorrectly assigning them to the South-East Pacific Chile-Perú stock. Despite extensive effort in western areas of Magellan Strait and Patagonian and Fuegian channels, no southern right whales have been observed there (Gibbons *et al.* 2006, Jorge Acevedo, comm. pers., CEQUA unpublished data), supporting the hypothesis that the whales observed in the eastern part of the Magellan Strait correspond to the South Atlantic population (Gibbons *et al.* 2006). Moreover, the hiatus in the distribution across southern South America makes likely a reduced demographic interchange between both South-East Pacific and South Atlantic populations.

The study area seems to have a high potential for commercial activities related to whale watching on southern right whales from shore as it occurs in

several locations along the south Atlantic coast of South America, notably Península Valdés (Hoyt & Iñíguez 2008). Moreover, in Chile this is the location with more potential for this type of activity given the presence of the species is relatively regular. However, for a fully development of whale watching several biological and ecological aspects, such as habitat use at small scale and seasonal distribution patterns should be studied. Further systematic surveys are possible to undertake from the shore nearby Punta Dungeness, where Chilean Navy personnel from the lighthouse as well as "estancias" farmers report that they regularly observe whales from the shore. A coordinated systematic survey at Cabo Vírgenes will provide a more complete understanding of the southern right whales at the eastern entrance of the Magellan Strait.

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