

Short Note

Abundance and Population Trends of the South American Fur Seal (*Arctocephalus australis*) in Uruguay

Valentina Franco-Trecu,¹ Massimiliano Drago,² M. Florencia Grandi,³
Alvaro Soutullo,² Enrique A. Crespo,^{3,4} and Pablo Inchausti²

¹*Departamento de Ecología & Evolución, Facultad de Ciencias,
Universidad de la República, Iguá 4225, Montevideo, Uruguay*
E-mail: vfranco-trecu@fcien.edu.uy

²*Departamento de Ecología, Centro Universitario Regional Este (CURE),
Universidad de la República, Maldonado, Uruguay*

³*Laboratorio de Mamíferos Marinos, Centro para el Estudio de Sistemas Marinos,
CENPAT, CONICET, Puerto Madryn, Chubut, Argentina*

⁴*Universidad Nacional de la Patagonia San Juan Bosco, Puerto Madryn, Chubut, Argentina*

There has been a general reduction in the abundance and spatial distribution of many marine species across habitats worldwide during the past two centuries (Costello et al., 2010). Within this context, monitoring and estimating trends in abundance are important components in the management and conservation of animal populations (Anganuzzi, 1993; Forney, 2000). Pinnipeds (otariids, phocids, and odobenids) are large-bodied mammals with long generation times and low reproductive rates (e.g., a maximum of one pup per female per year). These characteristics have often been associated with low resilience to exogenous perturbations and slow post-harvesting recoveries (McLaren & Smith, 1985; Gerber & Hilborn, 2001). Commercial sealing is believed to have been the main driver of pinniped population declines during the 19th and 20th centuries (Bonner, 1982; Gerber & Hilborn, 2001); however, post-harvesting responses have often differed among pinniped species and even among local populations of the same species (Trites & Larkin, 1996; Gerber & Hilborn, 2001; Raum-Suryan et al., 2002; Dans et al., 2004; Thompson et al., 2005; Grandi et al., 2015).

The South American fur seal (*Arctocephalus australis*) breeds in dense rookeries on the Atlantic and Pacific coasts of South America (Vaz-Ferreira, 1982), often in sympatry with the South American sea lion (SASL; *Otaria flavescens*). South American fur seal populations were exploited for at least 6,000 years, being the basis of livelihood for many Pre-Hispanic aboriginal populations along the South American coast (Schiavini, 1985). Archeofaunistic sites document the presence of fur seal bones and teeth along

the southwestern Atlantic, from Buenos Aires to Santa Cruz (Argentina), in most places together with SASL (Borella, 2014). The South American fur seal was intensively exploited from the 18th century until the end of the 20th century in the Atlantic Ocean (Ponce de León, 2000). In Uruguay, commercial harvesting killed at least 527,000 individuals between 1873 and 1949 (Ponce de León, 2000); and later, the Uruguayan State directly oversaw the exploitation of approximately 280,000 South American fur seals between 1950 and 1991 (Ponce de León, 2000).

Atlantic and Pacific (Northern Chile and Peru) fur seals are now considered a subspecies based on their genetic and morphological differentiation (de Oliveira et al., 2008). The Pacific population (*A. a. gracilisis*) is currently estimated at approximately 21,000 individuals (15,467 in Peru [Instituto del Mar del Peru (IMARPE), 2014] and 5,400 along the northern coast of Chile [Bartheld et al., 2008]), and its dynamics are strongly influenced by the El Niño Southern Oscillation (Trillmich et al., 1986; de Oliveira et al., 2009). However, the total abundance of the Atlantic (including Southern Chile) populations (*A. a. australis*, hereafter SAFS) is currently unknown, largely because of the different methodologies that have been used to census local populations. According to the most recent SAFS pup abundance estimates, there are ca. 50,000 pups in Uruguay (Páez, 2000), 6,000 pups in southern Chile (Venegas et al., 2002; Oliva et al., 2012), and ca. 1,000 pups in Argentina (Crespo et al., 2015). This information on pup abundance suggests that SAFS dynamics would be largely influenced by the size and trend of the Uruguayan population

