



Scientific Note

First record of the rockhopper penguin *Eudyptes chrysocome* at Elephant Island, South Shetland Islands

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Abstract. The manuscript reports the first occurrence of *Eudyptes chrysocome* in Elephant Island, South Shetland Islands, during the austral summer 2011/12. One adult individual was observed during the breeding period in a mixed colony of chinstrap, *Pygoscelis antarctica*, and macaroni, *E. chrysolophus*, penguins.

Key words: *Eudyptes chrysocome*, Elephant Island, foraging area, South Shetland Islands

Resumo. Primeiro registro do pinguim-de-penacho-amarelo (*Eudyptes chrysocome*) na Ilha Elefante, Shetland do Sul. O trabalho descreve a primeira ocorrência de *Eudyptes chrysocome* na Ilha Elefante, Shetlands do Sul, durante o verão austral de 2011/12. Um indivíduo adulto foi observado durante o período reprodutivo da espécie em uma colônia mista de pinguim-antártico, *Pygoscelis antarctica*, e macaroni, *E. chrysolophus*.

Palavras chave: *Eudyptes chrysocome*, Ilha Elefante, área de alimentação, Ilhas Shetlands do Sul

The rockhopper penguin *Eudyptes chrysocome* (Foster 1781) is the most abundant of the 17 known species of penguins (Williams 1995). It has a circumpolar distribution in the sub Antarctic zone and in the northern Antarctic (Williams 1995), and breeds on islands south of the subtropical convergence off South America (Falkland/Malvinas Islands, Isla de los Estados, Isla Pingüino, Isla Ildefonso, Diego Ramírez, Isla Noir, Isla Barnevelt, Cape Horn, Isla Terhalten and Isla Buenaventura), on subantarctic islands of the Indian and Pacific Oceans (Prince Edward, Kerguelen, Crozet and Marion islands), Australian islands (Heard, McDonald and Macquarie islands) and New Zealand islands (Campbell, Auckland and Antipodes islands) (Birdlife International 2010, 2013; Jouventin et al. 2006). Few observations were presented about extralimital records. Individuals of *E. chrysocome* have been documented in Tasmania (Woehler 1992), the South Orkney Islands (Tickell 1960; Rootes 1988;

Coria et al. 2011), South Georgia (Prince & Payne 1979) and South Shetland Islands (Trivelpiece et al. 1987). Barquete et al. (2006) reviewed observations of rockhopper penguins in southern Brazil, and in one of the observations two individuals were registered during the breeding season. However, data on the occurrence of these two penguin species in the Antarctic convergence zone are lacking. Although it has been recorded in the South Shetland Islands, this is the first record of *E. chrysocome* in Elephant Island during the austral summer 2011/12, despite Brazilian research teams were present there in many summers since 1982.

We observed a rockhopper penguin among chinstrap (*Pygoscelis antarctica*) and macaroni penguin colonies (*Eudyptes chrysolophus*) for two hours on 8 January 2012, at a field research camp used to study the breeding populations of seabirds nesting at Stinker Point, Elephant Island (61°07'31"S, 55°19'26"W) (Fig. 1). During the

observation, the individual remained in the colony and did not interact with the other two species. We were unable to confirm the amount of time that the individual remained in the colony. The rockhopper penguin was sighted only once and was

photographed (Fig. 2). Although the individual reported here was not breeding or displaying nest-attending behavior, these observations represent, to our knowledge, the first record of the rockhopper penguin occurring at Elephant Island.

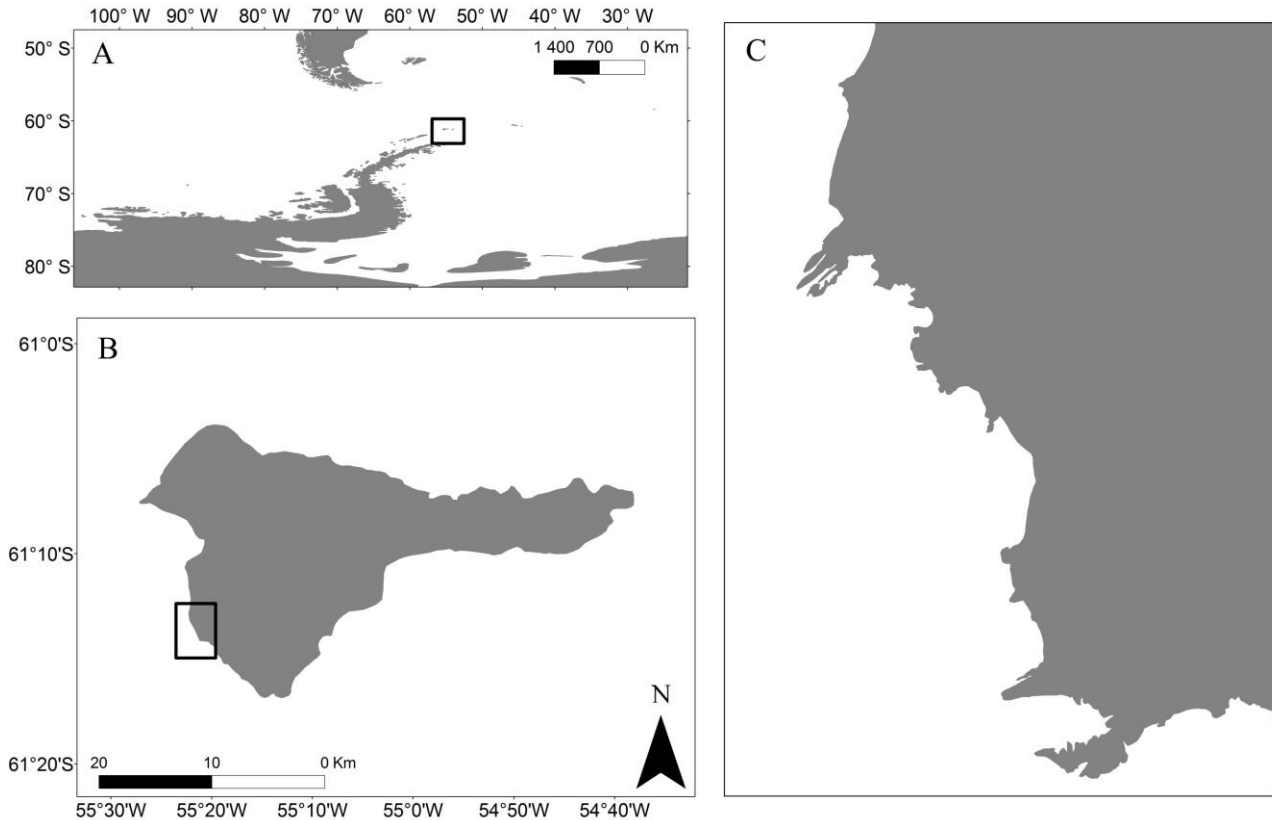


Figure 1. A. Location of Elephant Island between South America and the Antarctic continent; B. Location of Stinker Point at Elephant Island; C – Area where a rockhopper penguin, *Eudyptes chrysocome*, was sighted (star) in Stinker Point.

Pütz *et al.* (2006a) documented rockhopper penguins foraging in the South Shetlands during the winter, but our record occurred during its breeding period, which occurs from October to May (Williams 1995). During the breeding period, rockhoppers cover a wide foraging area (Boersma *et al.* 2002, Pütz *et al.* 2003, 2006b). The Antarctic and Subantarctic polar front stands out as a major foraging area for many penguin species due to the abundant amount of prey (Barlow & Croxall 2002, Pütz *et al.* 2006a).

There are many explanations as to why penguins may wander from their habitual foraging range and migration routes. Navigation errors, storms, irregular ocean currents or climatic changes are some of the reasons why individuals may leave their home range (Woehler 1992) or in search of places with greater resource availability (Raya Rey

et al. 2007). Additionally, individuals can be caught up in a marine current, which was reported by Pütz *et al.* (2003). The rockhopper penguin has a wide distribution in the Falkland/Malvinas Islands, and Elephant Island is the closest polar island. Rockhopper penguins forage up to 800 km from their breeding colonies in the Falkland/Malvinas Islands, Isla de los Estados and Marion Island (Brown 1987, Pütz *et al.* 2003, 2006b). They may travel more than 1000 km (this distance was calculated from the map), which is the shortest distance between Elephant Island and the Falkland/Malvinas Islands, and 400 km less from Isla de los Estados or Ildefonso. The proximity of colonies and the foraging capacity of the penguins may also explain the presence of rockhopper penguins in Antarctica. Penguins preferentially forage in areas with high prey abundance (Bost *et al.*

2004, Zimmer *et al.* 2008). Current changes in sea surface temperatures are leading to altered prey distributions or reduced prey abundances as a consequence of shifts in oceanic temperature and productivity (Cunningham & Moors 1994, Guinard *et al.* 1998, Péron *et al.* 2012). The reduction of prey abundance is probably increasing the foraging distribution of many Antarctic and subantarctic seabirds because birds would travel far distances to find the necessary amount of prey during the

breeding period (Péron *et al.* 2010, 2012, Petry *et al.* 2012). Such marine environmental changes which affect prey abundance (Ellis 1999) are, added to fisheries, the cause of a rapid decline of rockhopper penguin populations (30.8%) over the past 30 years, placing the species as Vulnerable (Birdlife International 2013). Every information about distribution may be useful to help understand the species situation.



Figure 2. . Rockhopper penguin, *Eudyptes chrysocome*, observed on 8 January 2012 among chinstrap penguins, *Pygoscelis antarctica*, in Stinker Point, Elephant Island, South Shetland Islands; B and C – Morphological characteristics of the species that allowed species identification: straight bright and yellow eyebrow ending in long yellow feathers behind the eye, the top of the head has spiked black feathers (Birdlife International 2013).

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