

The Penguins of South America and the Falkland Islands

research publications

For a full list of publications see the [bottom of this page](#), or go to the [research publications index](#).

Maps and figures relating to this publication can be found in [The Penguins Picture Gallery](#).

Any information used or copied from this report MUST be referenced to the source article as given in the heading below.

Penguins of South America and the Falkland Islands

by Mike Bingham. Published 1998 in *PENGUIN CONSERVATION* 11(1): 8-15.

INTRODUCTION TO THE REGION

World-wide there are 17 species of penguin, of which 7 regularly breed around South America and the Falkland Islands. Three of these species are of the Genus *Spheniscus*, and are found nowhere else in the world. These are the Magellanic Penguin (*Spheniscus magellanicus*) common around southern South America and the Falkland Islands, the Humboldt Penguin (*Spheniscus humboldti*) restricted to the Pacific coast of Chile and Peru, and the Galapagos Penguin (*Spheniscus mendiculus*) found only at the Galapagos Islands off the coast of Ecuador.

The King Penguin (*Aptenodytes patagonicus*) has a limited presence in the region, with a breeding population of around 400 pairs in the Falkland Islands (Bingham 1996). King Penguins have not bred in South America since the colony on Islas de los Estados was wiped out by sealers during the last century. The Falkland Islands hold around 20% of the world population of Gentoo Penguin (*Pygoscelis papua*), with a total population of 65,000 breeding pairs at 81 sites (Bingham 1996).

The Falkland Islands and South America are home to two species of the Genus *Eudyptes*; the Southern Rockhopper (*Eudyptes chrysocome chrysocome*) and the Macaroni (*Eudyptes chrysolophus*). The Southern Rockhopper is a subspecies that is restricted to the Falkland Islands and South America, with the Falkland Islands holding a breeding population of about 300,000 pairs at 36 sites (Bingham 1996). The Falkland Islands population of Macaroni Penguins is very small, with no individual colonies and only individual pairs found breeding amongst Rockhoppers colonies. The total Falklands population stands at no more than about 50 pairs.

THE CENSUS

By comparison to other areas of research, conducting counts of breeding populations can seem fairly mundane. Nevertheless the value of data obtained from population censuses should never be underestimated. It is only by recording population size and distribution that we are able to determine with any accuracy whether a population is thriving or declining, or how a population has been affected by disasters such as an oil spill or El Niño.

During 1995/96, a population census of all penguin species (except the Magellanic Penguin) was conducted around the Falkland Islands (Bingham 1996). Every breeding colony was visited, and population totals for each species obtained. Comparing this data with previous studies revealed that the Southern Rockhopper population had crashed to a fraction of its former size (Bennett 1933, Bingham 1994c Bingham 1995a, Bingham 1996). With no obvious reason for this dramatic decline, apart from speculation about commercial fishing, it became a priority to census the remainder of the world population located in South America, to determine how wide-spread the decline had been.

It had been shown during the 1995/96 census of the Falkland Islands, that it requires little extra effort to census all penguin species during the course of such a census. The only exception to this was the Magellanic Penguin, which because of its widespread, low-density distribution in burrows, made it impossible to census with methods employed for surface nesting species. For this reason the Magellanic Penguin had been excluded from the Falkland Islands census.

On that basis it was decided that a census would be conducted of all South American penguins during the 1996/97 breeding season, except for those of the Genus *Spheniscus*. In theory this meant that all species covered by the Falkland Islands census would be included, although King and Gentoo Penguins were not expected to be encountered during the South American census.

During the 1995/96 Falkland Islands census it had been possible to conduct ground counts of incubating pairs at each of the breeding colonies, because most colonies were relatively accessible (Bingham 1996). By contrast, many of the South American colonies are remote and inaccessible, and any attempt to conduct ground counts of each and every colony would have been doomed to failure. It was therefore decided from the outset that the census would be conducted by light aircraft, thereby negating the need to get ashore at difficult and remote sites.

The location of all the Falkland Islands breeding sites had been known prior to the commencement of the 1995/96 census (Bingham 1996), but this was certainly not the case for South America. Although data did exist for a number of known breeding sites around South America, it was likely that other sites existed that had not been recorded. This was another reason for favouring an aerial census, since it provided the opportunity to cover large areas of suitable coastline in search of previously unrecorded colonies. This certainly reduced the margin of error that would otherwise have resulted from new sites being overlooked, however the margin of error for the actual counts was clearly greater for aerial counts than for ground counts.

In order to quantify the margin of error likely to be expected from aerial counts, a number of aerial censuses were made of Rockhopper colonies in the Falkland Islands for which the number of breeding pairs was also determined by ground counts. These aerial counts differed by a maximum of 14% from ground counts made of the same colony, giving a total margin of error of +/- 20% for aerial census data (Bingham 1996).

The 1996/97 aerial census was conducted throughout the known *Eudyptes* breeding ranges of Chile and Tierra del

Adopt and name your penguin, and we will send you reports and photos of your penguin's progress. We will even send you a map to show you exactly where your penguin lives, in case you ever want to visit. (Visitors are welcome).

[Learn More](#)

[buy our book](#)

**The Falklands
Regime by
Mike Bingham**

We are always pleased to receive donations in support of our work. If you would like to make a donation, [click here](#).

Fuego. The Atlantic coast of mainland Argentina was excluded from the census, since this coastline has been well studied, and does not hold any breeding sites for species covered by the census, other than a very small Rockhopper colony on Isla Pingüino, near Puerto Deseado. This colony is regularly monitored as part of an ongoing research programme, and population data from their research was used in favour of duplicating results (Frere *et al.* 1993).

CENSUS RESULTS

KING PENGUIN

As expected, no King Penguins were recorded anywhere in South America.

GENTOO PENGUIN

Somewhat surprisingly, a very small Gentoo breeding colony was discovered on Islas de los Estados, containing almost 100 breeding pairs. This was the only breeding colony of Gentoo Penguin recorded in South America.

SOUTHERN ROCKHOPPER

The 1996/97 census showed that South America holds a breeding population of about 175,000 pairs of Southern Rockhoppers, at a total of 15 breeding sites. Apart from the very small colony near Puerto Deseado (Frere *et al.* 1993), these breeding sites are restricted to the islands off Tierra del Fuego and Chile. Combined with the Falkland Islands population of 300,000 pairs at 36 sites (Bingham 1996), this gives a world population of 475,000 breeding pairs at 51 sites for the subspecies *Eudyptes c.chrysolome*. (South Georgia has been known to hold a few breeding pairs, but no more than 10 pairs have been recorded).

MACARONI PENGUIN

The 1996/97 census showed that South America holds a breeding population of about 12,000 pairs of Macaroni, at a total of 9 sites. These sites are all restricted to the islands off Tierra del Fuego and Chile. Only the islands of Diego Ramirez, Ildefonso and Noir hold more than a thousand breeding pairs.

DISCUSSION

No breeding King Penguins were observed in South America during the 1996/97 census. The Falkland Islands population stood at around 400 breeding pairs during the 1995/96 census (Bingham 1996), and has rapidly expanded from a population of less than 100 pairs recorded during 1980/81 (Bingham 1995a). With a world population of around 1,500,000 pairs (Croxall, In press), the Falkland Islands population is of regional rather than global importance.

A colony of a little under 100 breeding pairs of Gentoo Penguin was discovered on Islas de los Estados during the 1996/97 census. The Falkland Islands population stood at 65,000 breeding pairs during the 1995/96 census (Bingham 1996) out of an estimated world population of 320,000 pairs (Croxall, In press). The 1995/96 Falkland Islands census indicated a population decline of around 45% since a similar census conducted during 1932/33 (Bennett 1933).

Annual counts of selected breeding sites around the Falkland Islands suggested that much of this decline had occurred during the late 1980s and early 1990s, with low breeding success also being observed during that period (Bingham 1994a, Bingham 1994d, Bingham 1995a). Continued monitoring of these sites since then indicates that the Falkland Islands population has now risen to around 81,000 breeding pairs, with high breeding success rates having been recorded since 1993/94. Gentoo populations are known to fluctuate greatly, and it is plausible that the decline observed previously was merely part of a natural cycle.

The world population of Southern Rockhopper Penguins now stands at around 475,000 breeding pairs, with 63% of the population in the Falkland Islands and 37% in South America.

Comparison with previous census data (Bennett 1933) indicates that the Falkland Islands population has crashed to just 10% of its former size, with much of this decline having occurred during the 1980s and early 1990s (Bingham 1994c, Bingham 1995a, Bingham 1996). Evidence of this dramatic decline can also be seen from the breeding sites themselves. The Falkland Islands breeding sites feature old colonies which have destroyed the vegetation by years of occupancy, leaving only lichen covered rocks and stones around the nest-site. The huge breeding colonies that once produced these areas of barren ground, have now been reduced to small clusters of birds huddled in the centre of their stony territories.

The South American population shows no such evidence of decline, with breeding sites featuring a healthy mixture of new, middle-aged and old colonies, indicating a natural cycle of fluctuation and regeneration. Comparison with previous census data (Venegas 1984, Venegas 1991, Woehler 1993) also indicates that the South American population had been stable throughout the 1980s and 1990s, covering the period when over half the Falkland Islands population had died from starvation. The reason for such differing fortunes is unknown, although it is interesting to note that the waters around Tierra del Fuego and Chile are not heavily fished, whilst those around the Falkland Islands are. In the Falkland Islands, even internationally recognised sites, such as Beauchêne Island which is being considered for World Heritage status, have fleets of fishing boats operating just 3 miles from breeding Rockhoppers.

The Macaroni populations of South America (12,000 pairs) and the Falkland Islands (~50 pairs) must be looked at in the light of a world population of around 9 million breeding pairs (Croxall, In press). These populations are therefore of regional rather than international importance. There were no obvious signs of decline amongst the South American population, and no evidence to suggest that the population has changed greatly over recent years. The Macaroni is the most numerous of all the world's penguins.

Although the Magellanic Penguins were not included in the 1995/96 and 1996/97 censuses, that is not to say that no work has been done on this species. The current population along the coast of mainland Argentina is estimated to be 650,000 breeding pairs (Gandini *et al.* In press). Observations of distribution around Tierra del Fuego and Chile during the 1996/97 census suggest that these regions hold a population at least as large as that of mainland Argentina, giving a South American population of at least 1,300,000 pairs. Studies by the Environmental Research Unit indicate that the Falkland Islands population must be well in excess of 100,000 pairs, giving a minimum world population of around one and a half million breeding pairs.

Annual monitoring of selected colonies (Bingham 1994b, Bingham 1995a, Bingham 1995b) shows that the Magellanic Penguin population of the Falkland Islands has declined to about half its 1980s level. These declines coincided with observations of low breeding success up until 1993/94.

In addition to its Penguin Monitoring Programme in the Falkland Islands, the Environmental Research Unit now conducts similar studies at a number of Chilean breeding sites along the Straits of Magellan. These studies suggest that the Magellanic Penguin decline observed in the Falkland Islands has not been evident in the Magellanic region of

Chile, despite its close proximity and similar breeding habitat to the Falkland Islands.

One such site is Isla Magdalena, which lies in the Straits of Magellan and covers an area of less than 1 sq.km. The 1997/98 census conducted by the Environmental Research Unit shows that this tiny island holds a population of around 41,000 breeding pairs of Magellanic Penguin; equivalent to about a third of the entire Falkland Islands population. Comparison with a similar census conducted during 1940 suggests little significant change over the last 60 years (CONAF).

The 1997/98 population in the Straits of Magellan increased by an average of 17% since 1996/97. Chick survival rates were also high during 1997/98, with the lowest rate observed in the Straits of Magellan (range 1.28 - 1.71 chicks fledged per nest) still being higher than the highest rate observed in the Falkland Islands (range 0.79 - 1.23 chicks fledged per nest).

Further evidence of the differing fortunes of the two regions can be seen from the breeding sites themselves. Magellanic Penguin colonies around the Falkland Islands generally feature a very high percentage of unoccupied burrows, with an average of more than 70% of burrows being unoccupied. Similar breeding sites in the Straits of Magellan hold less than half the proportion of unoccupied burrows (< 35%), suggesting lower levels of adult mortality or higher levels of recruitment. There is no commercial fishing activity around the Straits of Magellan.

South America is also home to the Humboldt Penguin and the Galapagos Penguin, but these species were outside the scope of this census. The Environmental Research Unit has not conducted any research on either of these species, but there are other organisations that have. The estimated world population sizes of these species are less than 15,000 and 1,000 breeding pairs respectively. (Vargas 1996, Zavalaga 1997).

ACKNOWLEDGEMENTS

Thanks go to CONAF, Instituto de la Patagonica, Fundación Otway, Aerovías DAP, Ricardo Fuentes and Elena Mejias.

REFERENCES

- Bennett, A.G. (1933) The penguin population of the Falkland Islands in 1932/33. Government Press, Falkland Islands. 4pp.
- Bingham, M. - (1994a) Conservation Report on Gentoo Penguins. Penguin News, Vol.6, No.4: 9.
- Bingham, M. - (1994b) Conservation Report on Magellanic Penguins. Penguin News, Vol.6, No.20: 10.
- Bingham, M. - (1994c) Conservation Report on Rockhopper Penguins. Penguin News, Vol.6, No.21: 9.
- Bingham, M. - (1994d) Gentoo Penguin population trends: 1987/88 - 1993/94, The Warrah, 5: 4-5.
- Bingham, M. - (1995a) Population status of penguin species in the Falkland Islands. Penguin Conservation, 8(1): 14-19.
- Bingham, M. - (1995b). Seabird Surveys: 1994-95 Report. The Warrah, 5: 5.
- Bingham, M. - (1996) Penguin Population Census 1995-96. The Warrah, 10: 6-7.
- Croxall, J.P. (ed.) - In Press. Penguin Conservation Assessment: Antarctic and Subantarctic Species. In: Ellis, S. (ed.) Penguin Conservation Assessment. IUCN Conservation Breeding Specialist Group.
- Frere, E., Gandini, M., Gandini, P., Holik, T., Lichtschein V. and Day M.O. - (1993) Variación anual en el número de adultos reproductivos en una nueva colonia de pingüino penacho amarillo en Isla Pingüino (Santa Cruz, Argentina). Hornero, 13: 293-294.
- Gandini, P., E. Frere and P.D. Boersma - In Press. Status and conservation of Magellanic Penguins in Patagonia, Argentina. Bird Conservation International.
- Vargas, H. - (1996) Galapagos Penguin Census of 1995. Penguin Conservation, 9(1): 2-4.
- Venegas, C. - (1984) Estado de las poblaciones de Pingüino de Penacho Amarillo y Macaroni en la Isla Noir, Chile. Informe Instituto de la Patagonia, 33.
- Venegas, C. - (1991) Estudio de cuantificación poblacional de pingüinos crestados en Isla Recalada. Informe Instituto de la Patagonia, 55.
- Woehler, E.J. - (1993) The distribution and abundance of Antarctic and Subantarctic Penguins. SCAR, Cambridge.
- Zavalaga, C.B. and Paredes, R. - (1997) Humboldt Penguins at Punta San Juan, Peru. Penguin Conservation, 10(1): 6-8.

Other Research Publications

[1\) Bingham, M. \(2002\) The decline of Falkland Islands penguins in the presence of a commercial fishing industry.](#)

[2\) Bingham, M. \(1998\) The distribution, abundance and population trends of Gentoo, Rockhopper and King penguins at the Falkland Islands. *Orxy* 32\(3\): 223-32.](#)

[3\) Bingham, M. \(1996\) Censo de los pingüinos de las Islas Falklands. Unpublished Spanish resume of above.](#)

[4\) Bingham, M. \(1998\) Penguins of South America and the Falkland Islands. *Penguin Conservation* 11\(1\): 8-15.](#)

[5\) Bingham M. and Meijas E. \(1999\) Penguins of the Magellan Region. *Scientia Marina* Vol:63, Supl. 1: 485-493](#)

[6\) Bingham, M. \(1999\) *Field Guide to Birds of the Falkland Islands*.](#)

[7. Bingham, M and Herrmann, T \(2008\) *Magellanic Penguin Monitoring Results for Magdalena Island 2000-08. **Anales Instituto Patagonia \(Chile\) 36\(2\): 19-32.***](#)

King penguins on the Falkland Islands. The Falkland Islands are an archipelago off the southernmost point of South America. Officially, the population of 3,000 resides in a British overseas territory, meaning that they are a part of the British Empire. In 1833, Great Britain claimed the islands and has been responsible for their defense and foreign relations ever since. Argentina claims, however, that it acquired the Falkland Islands when it gained independence from Spain in 1816. The dispute grew into an armed struggle in 1982, which resulted in nearly a thousand deaths and no meaningful change. The Falkland Islands is an archipelago in the South Atlantic Ocean on the Patagonian Shelf. The principal islands are about 300 miles (483 kilometres) east of South America's southern Patagonian coast, and about 752 miles (1,210 kilometres) from the northern tip of the Antarctic Peninsula, at a latitude of about 52°S. The archipelago, with an area of 4,700 square miles (12,000 square kilometres), comprises East Falkland, West Falkland and 776 smaller islands. As a British overseas territory, the

A. About 250 miles off the coast of South America lie the Falkland Islands, a British overseas territory. In terms of size, the Falkland Islands' land area measures up to be about the same as that of Northern Ireland. About 3,000 people live on the islands; they mostly make a living from sheep farming and fishing. Like most isolated communities around the world, the people of the Falkland Islands are always pleased to welcome tourists. B. Stanley is home to over three quarters of the population. The Falkland Islands are home to five different species of penguin. People may notice whales or dolphins in the harbour, sea lions lying on the rocks, or some of the 227 bird species that fill the skies. It's a rare place on earth where people and wildlife seem to co-exist happily. The Falkland Islands is an archipelago in the South Atlantic Ocean on the Patagonian Shelf. The principal islands are about 300 miles (483 kilometres) east of South America's southern Patagonian coast, and about 752 miles (1,210 kilometres) from the northern tip of the Antarctic Peninsula, at a latitude of about 52° S. The archipelago, with an area of 4,700 square miles (12,000 square kilometres), comprises East Falkland, West Falkland and 776 smaller islands. As a British overseas territory, the