



species factsheet

| species introduction |

Northern rockhopper penguin *Eudyptes moseleyi*

Southern rockhopper penguin *Eudyptes chrysocome*

Rockhopper penguins used to be considered a single species, however this was split into *E. chrysocome* and *E. moseleyi* on the basis of clear morphological, vocal and genetic differences.

In addition, there are two recognised subspecies of southern rockhopper penguin *Eudyptes chrysocome chrysocome* and *Eudyptes chrysocome fiholi*.

Rockhoppers are a small penguin, measuring approximately 55cm in length and weighing about 3kg. They have a slate-grey upper body and white under-parts, a reddish bill, red eyes and long yellow plume of feathers extending from bright yellow eyebrows. These yellow plumes are longer in northern rockhopper penguins.

Northern rockhoppers are found in the South Atlantic and Indian Oceans, whilst southern rockhoppers are found in the South Atlantic, Indian, Pacific and Southern Oceans.

The population of northern rockhoppers is estimated to be about 265,000 breeding pairs (2012). The largest populations breed on the Tristan da Cunha group of Islands and Gough Island; smaller populations are on Amsterdam and St Paul Islands. In 2009, Middle Island (Tristan da Cunha) contained 83,000 pairs and Gough Island contained 65,000 pairs. Overall these penguins only breed on seven islands, with a total land area of 250km² - a rather restricted range.

The population of southern rockhoppers is estimated at just over 1.23 million pairs.

Eudyptes chrysocome chrysocome breeds on the Falkland Islands and other islands off southern Chile and Argentina. The largest population is on the Falkland Islands (up to 320,000 breeding pairs). Isla de los Estados has 174,000 pairs, Isla Noir has 158,000 pairs and Isla Diego Ramiraz has 132,000 pairs.

Eudyptes chrysocome fiholi breeds on sub-Antarctic islands to the south of New Zealand and South Africa. The largest populations being on the Crozet Islands in the Indian Ocean (158,000 pairs in 1982). Kerguelon Island / French southern territories had 85,000 pairs in 1986.

Rockhopper penguins suit their name and have extra strong claws that help them to hop from rock to rock.

They have been recorded diving 168 metres in depth to catch food.

Rockhoppers are the smallest of the crested penguins and the second smallest of all penguins (after the little penguin).



Picture courtesy of James Fenton, Falkland's Conservation



Picture courtesy of Sarah Crofts, Falklands Conservation

| status in the wild |

The northern rockhopper penguin *Eudyptes moseleyi* is classed as Endangered on the IUCN Red List and the southern rockhopper penguin *Eudyptes chrysocome* is classed as Vulnerable.

Some populations have dramatically declined; some islands once had millions of pairs. On Gough Island, the breeding population (northerns) has declined by over 90% since the 1950's – some estimate about 2 million lost pairs (98% drop). Tristan da Cunha has also seen a 90% drop in breeding numbers, but this has taken 100+ years. Breeding colonies on Amsterdam and St Paul Islands have reduced in size by 40%. Population modelling has estimated an overall loss of 57% in 37 years (three generations).

Southern rockhoppers have also declined; overall drop estimated at 34% in 37 years (three generations). The Falkland Islands have seen a 90% population drop since the 1930's – a million birds. Approximately 1.5 million pairs were lost from Campbell Island between 1942 and 1986 (94% decline). From 1994 to 2009 the Marion Island population fell from 160,000 to 42,000 (70% drop).

Some populations may have increased around Chile and Argentina, but overall losses far outweigh gains. The declines have worsened in recent years.

These large-scale dramatic declines highlight the need for conservation work and studies to understand the ecology of these species.

| species reproduction |

Rockhopper penguins are gregarious species' which nest in large colonies that can contain over 100,000 nests. Pairs are monogamous and usually return to the same nest site each year. Northern rockhoppers tend to lay around August, and southern rockhoppers in November.

Both species usually lay two eggs, one is much larger than the other. Only the chick from the larger egg usually survives, although populations in the Falkland Islands often raise two chicks. Incubation is shared by both sexes and lasts for 33 days.

Once hatched, the male broods the chick for 25 days whilst the female goes out to sea to feed, but regularly brings food back to the nest. After this, the chick leaves the nest, and

forms crèches with other chicks while the parents feed. Southern rockhopper chicks fledge and leave the colony in February.

| species habitat |

Both species of rockhopper penguins nest on islands; sites can be on boulder strewn beaches, rocky gullies, on cliffs or inland (e.g. among stands of tussock grass). Nests are often close to freshwater such as natural springs or ponds.

Following the breeding season, rockhoppers moult before spending the winter at sea.

| species food |

Their diet consists of squid, octopus, fish and crustaceans such as krill. They often feed in groups and can dive to depths of over 100 metres.

| threats |

Both species of rockhopper penguins are threatened by increased disturbance around breeding sites (partially due to ecotourism), pollution, introduced predators, overfishing and climate change.

Historically they suffered from egg collecting and catching for use as bait in crab pots, the latter is still a threat on some Chilean islands as is the collection of zoological specimens. Introduced grazing animals have caused problems at some sites; introduced pigs once caused a problem for some northern populations. Domestic and feral dogs have been reported to be a problem on Tristan da Cunha.

Climate change and warming temperatures affect both their terrestrial and marine habitats, causing shifts in the marine food webs. Increases in sea surface temperatures associated with changes in the climate have been linked to penguin population declines. A drop in primary productivity can reduce prey availability or cause bottom-up food web shifts that can also reduce prey availability. However, how this affects prey abundance is not well known, especially given the confounding effects of fisheries and other human activities on the penguin populations. It is thought that squid fisheries in particular may affect food supplies.

The reasons for the swift decline of northern rockhopper penguins on Gough Island is unknown, but may be linked to the rapidly rising population of sub-Antarctic fur seals *Arctocephalus tropicalis*. These seals predate the penguins, and provide competition for food. Drift net fishing and rock lobster fisheries have caused significant mortality. In 2011 a cargo ship ran aground on Nightingale Island, the resultant oil spill reached Inaccessible Island and Tristan da Cunha. Early indications were that populations were not as badly damaged as feared.

The Falkland Islands populations of southern rockhoppers crashed in 1986 due to a mass starvation event and in 2002/3 many adults were killed by a harmful algae bloom (HAB). The Falkland population dropped by 88,000 pairs between 2000 and 2005, this is thought to be due to the HAB (the 2010 census indicated that numbers have recovered). Other threats to southern rockhoppers may include hydrocarbon exploitation off Argentina, energy production and mining, oil spills and oil pollution.

| conservation |

Many islands that southern rockhopper penguins breed on have been designated as reserves. The populations of the southern rockhopper penguin in the Falklands and on Marion and Campbell Islands are also regularly monitored and studied. Falklands Conservation carries out annual surveys and five-yearly censuses.

Further investigation is required into the population demographics of the southern rockhopper penguin, including assessment of the impacts of oil exploitation, commercial fisheries, climate change, introduced predators and disturbance from ecotourism. Codes of conduct should be established to reduce ecotourism damage.

Alternative methods to protect penguin populations, such as marine zoning, have also been discussed, although further research is required.

Whilst the northern rockhopper penguin population is monitored on the major islands, the exact causes of the population crash are still unknown. Interactions with commercial fisheries, the impact of fur seal predation and competition, and the effect of the house mouse on chick survival on Gough Island all need to be studied.

Without the implementation of appropriate conservation measures, this charismatic species will continue to nosedive towards extinction.

| find out more |

Northern rockhopper penguin (*Eudyptes moseleyi*)

<http://www.iucnredlist.org/details/160032304/0>

<http://www.birdlife.org/datazone/speciesfactsheet.php?id=32304>

<http://www.arkive.org/northern-rockhopper-penguin/eudyptes-moseleyi/>

Southern rockhopper penguin (*Eudyptes chrysocome*)

<http://www.iucnredlist.org/details/160032472/0>

<http://www.birdlife.org/datazone/speciesfactsheet.php?id=32472>

<http://www.arkive.org/southern-rockhopper-penguin/eudyptes-chrysocome/>

More

<http://www.falklandsconservation.com//wildlife/penguins/rockhopper>

<http://www.cebc.cnrs.fr/publipdf/1997/TPB17.pdf>

Tremblay Y, Guinard E & Cherel Y: Maximum diving depths of northern rockhopper penguins (*Eudyptes chrysocome moseleyi*) at Amsterdam Island. *Polar Biology* (1997) 17: 119-122

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