

# Female Antarctic seals give cold shoulder to local males

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Female Antarctic fur seals will travel across a colony to actively seek males which are genetically diverse and unrelated, rather than mate with local dominant males.

These findings, published in this week's *Nature*, suggest that female choice may be more widespread in nature than previously believed and that such strategies enable species to maintain genetic diversity.

Scientists from the University of Cambridge and the British Antarctic Survey (BAS) studied a colony of Antarctic fur seals (*Arctocephalus*

gazella) on the subantarctic island of South Georgia.

They discovered that female fur seals will travel up to 35 metres to find a mate with high genetic diversity and to avoid inbreeding (while the males will remain static waiting to be chosen).

This unique mating practice enables the seals to avoid the loss of genetic variation which occurs when females of the species only mate with dominant males with favoured traits. This is significant as studies have shown that more genetically diverse individuals tend to be more resistant to disease, carry fewer parasites, and in the case of males, are more aggressive and father more offspring.

It had long been assumed that the females were passive, simply mating with their nearest male. However, using paternity tests, the scientists demonstrated that only a quarter of the females conceived to their nearest male.

Dr Joe Hoffman, at the Department of Zoology, University of Cambridge, said: "Many mammalian species have mating systems that were traditionally viewed as being dominated by males fighting with each other for the right to mate with passive females. So it's not only remarkable to uncover active female choice in such a system, but this also suggests that female choice may be more widespread in nature than we previously thought."

Studies of other species have shown links between genetic variation and visual traits. The scientists believe that female fur seals may be able to assess male genetic traits visually by examining body size and condition, dominant behaviours, or territory quality. Another possibility is that females can use smell to determine whether they are related to the male.

Commenting on the practical implications for fur seal populations, Dr

Hoffman said, "Antarctic fur seals are a key player in the Southern Ocean ecosystem. Scientists conducting research to preserve this ecosystem need to know as much about their biology as possible. The behaviours that we observe will impact upon the genetic diversity of fur seal populations and may have helped them recover so successfully from near extinction only 100 years ago. This could in turn affect how well they respond to future challenges such as climate change."

Antarctic fur seals were nearly hunted to extinction in the 17th and 18th Centuries by commercial sealers. Their numbers are now estimated at between 2 and 3 million.

Source: University of Cambridge

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