

# Hormones dictate when youngsters fly the nest: research

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This is a manx shearwater in flight, Credit: David Boyle

Seabirds feed their young less as they reach an age to fly the nest, but it's hormones that actually control when the chicks leave home, according to new research from the University of Leeds.

The study – published online in *Behavioural Ecology* today (05 July) – aimed to pinpoint the main trigger which causes chicks to leave the [nest](#) and embark on an independent life, a process known as fledging.

While studying a colony of Manx Shearwaters (*Puffinus puffinus*), on the island of Skomer, researchers from the University's Faculty of Biological Sciences noticed that parent birds seemed to become increasingly insensitive to their chicks' demands for food as they grew

close to fledging. At the same time the chicks showed a marked increase in levels of the [hormone](#) corticosterone. However, the team needed to know whether this increase was independent of, or caused by, the reduction in feeding.

They decided to trick the parent birds, by swapping chicks of different ages between nests – which the birds make in burrows in the ground – to see how this affected both parental care and the time chicks took to fledge.

"Manx Shearwaters don't recognise their own offspring, but will simply go back to the same nest after they've gathered food. They have one chick, which makes the interactions between parent and offspring easier to study," explains lead researcher, Dr Keith Hamer. "We swapped chicks which were between 10 days and two weeks apart in age, to see what impact it would have. We wanted to find out whether [parents](#) and chicks were responding to each other's behaviour, or whether each was acting independently."

The team discovered that adults reduced their food provisioning after about 60 days of raising a chick, regardless of the chick's stage of development. Although females more than males will adjust their feeding levels to how much their chicks beg for food, after around 60 days both parents start to ignore their pleas. This held true whether parents were feeding their own chicks, or foster-chicks of different ages.

The surge in corticosterone took place over the final few weeks before chicks fledged at about 70 days of age. This held true even when chicks had been fostered by parents at a different stage of the feeding cycle, so was clearly independent of the parent's behaviour and any reduction in food.

"Our findings show that young Manx Shearwaters leave home of their

own accord when their corticosterone levels have reached a peak rather than as a result of changes in parental behaviour," says Dr Hamer. "Both parents and chicks need large energy reserves for their arduous migration across the Atlantic to South and Central America, and parents seem to reduce how much they feed their young simply to protect themselves."

"Unlike some other bird species, which let their offspring dictate the level of care, seabirds appear to weigh up the cost of a chick fledging underweight against the greater cost of losing the chance to breed again," he adds. "Manx Shearwaters have a breeding life of around forty years, so parents pay a high cost if they end the season too weak to complete their own migration."

**More information:** The paper, Parent–offspring conflict during the transition to independence in a pelagic seabird (DOI: 10.1093/beheco/ars079) is published online in *Behavioural Ecology*.

Provided by University of Leeds

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