

Kittiwakes' trans-Atlantic winter odyssey linked to breeding success

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Kittiwake sits in its nest on the Isle of May NNR, Scotland. Credit: Mark Newell/Centre for Ecology & Hydrology

One of Britain's best known seabirds winters on opposite sides of the Atlantic depending on whether its breeding attempt has been successful according to new research published today in the journal *Proceedings of the Royal Society B*. The findings highlight previously unsuspected links between summer breeding performance and wintering distributions of kittiwakes.

The research team was led by Dr Maria Bogdanova from the Centre for Ecology & Hydrology (CEH) in conjunction with colleagues from CEH and the British Antarctic Survey (BAS).

The discovery of such patterns of segregated winter distributions is important for defining key wintering areas in declining species such as the kittiwake that are experiencing poor breeding seasons with increasing regularity.

The results show kittiwakes that experienced breeding failure left their colony earlier than successful breeders. Failed breeders then travelled over 3000km and wintered off Canada while their successful neighbours remained close to Britain. The two groups did not differ in the timing of return to the colony the following spring. However, over half the males from both groups made a previously undescribed long-distance journey out into the central Atlantic before the breeding season.



This is a kittiwake on the Isle of May, NNR, Scotland. Credit: Anke Addy

Lead author Dr Maria Bogdanova, an animal population ecologist at the Centre for Ecology & Hydrology, said, "Our results demonstrate important but previously poorly understood links between breeding performance and winter distribution, with significant implications for populations. It is fascinating that successful and unsuccessful pairs nesting only a few metres apart in the colony can be separated by thousands of kilometres in the winter."

This study used a tiny instrument (1.4g) known as a geolocator for tracking animal migration. During the 2007 breeding season, the team fitted 80 kittiwakes on the Isle of May NNR off the east coast of Scotland, with geolocators.

Geolocators were developed by BAS and have so far been used on animals such as geese, albatrosses, penguins and seals. They make regular recordings of light intensity, data which can be used to generate two geographical positions per day.

Co-author Francis Daunt, a seabird ecologist also from the Centre for Ecology & Hydrology said, "Kittiwakes have declined substantially in the last 25 years over much of their range. Conservation efforts to protect wintering grounds should consider that winter distributions may be shifting as [breeding](#) failure is becoming more common."

Provided by Centre for Ecology & Hydrology

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