

Where do puffins go in the winter?

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A recent increase in winter mortality in Atlantic puffins could be due to worsening conditions within the North Sea, according to new findings published in the scientific journal *Marine Biology*. The study used geolocation technology to track puffins from the Isle of May National Nature Reserve, home to the largest colony of puffins in the North Sea. The puffin population on the Isle of May has declined by 30% in recent years.

The research team included scientists from the Centre for Ecology & Hydrology and the British Antarctic Survey and was led by Professor Mike Harris, Emeritus Research Fellow at the Centre for Ecology & Hydrology, who has studied puffins for 37 years.

Professor Harris said, "Modern technology has come to the aid of the puffin just when it was needed. The quarter of a million puffins that breed in northeast Britain head out to sea during the winter and we previously thought that they stayed in the [North Sea](#). We now know that some make long trips into the Atlantic during winter. This is vital new knowledge which should help us explain recent declines in puffin numbers."

Recently-developed miniature logging devices weighing 1.5g were deployed during the 2007/2008 winter on 50 puffins from the Isle of May National Nature Reserve. Data was downloaded from thirteen of these geolocators with the records showing that over three-quarters of the birds made excursions lasting between one and four months into the Atlantic between successive breeding seasons, before returning to their

home waters in the North Sea.

Previous studies have shown that puffin numbers at the two largest colonies on the east coast of Britain declined by 30% between 2003 and 2008 following rapid population increase over the previous 40 years. Further counts in 2009 confirmed this decrease and also recorded a decrease at two other colonies. Most seabird mortality occurs during the winter when food abundance is depressed, weather conditions are poor and shorter days restrict foraging opportunities.

Since there was an unprecedented mortality of adult puffins over the 2007/2008 winter, the logger results suggest that conditions in the North Sea may have become less favourable for puffins in recent years, particularly during autumn and early [winter](#), forcing many birds to move into the Atlantic. Here they have to travel greater distances and adapt to different habitats.

Co-author Dr Francis Daunt from the Centre for Ecology & Hydrology said, "Although the factors causing the recent changes in puffin distribution and mortality require further study we are confident that this new approach, combining data from logging devices such as geolocators together with other information on changing conditions in the North Sea, will help improve our understanding of this complex ecological issue."

Provided by Centre for Ecology & Hydrology

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