

# Where Antarctic predatory seabirds overwinter

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South Polar skua with geolocator (right leg). Credit: Photo: Matthias Kopp/FSU

In order to identify the flight routes of the birds, postgraduate Matthias Kopp, under the guidance of Dr. Peter, equipped South Polar skuas with geolocators in their breeding areas on King George Island, about 120 kilometers off the Antarctic Mainland. Thus he has been screening their position data over a period of several years, followed by an analysis together with British colleagues and a scientist from Switzerland. "With the help of these data we can now for the first time definitely say that the South Polar skuas are not overwintering, like their close relatives, the brown skuas, off the Argentine coast but mainly in the northern hemisphere", explains the head of research, Dr. Peter. So far the scientists could only speculate about where the birds overwinter and which routes they are heading for. "The observation of single birds led

us to the assumption that they overwinter in the Atlantic. But so far it wasn't known that a great part of them stay as well in the middle of the Northern Pacific in the winter", says the Jena scientist who has been researching in Antarctica since 1983 on a regular basis.

No matter, which ocean the birds are heading towards for overwintering, their flight routes show remarkable similarities. Thus the flight routes from the north and the return travel to the south are always shaped like a slip knot crossing on the equator. On both flights together the birds showed a big figure-of-eight [flight pattern](#). At first the skuas which are overwintering in the Atlantic fly on a wide corridor northwards along the east coast of South America, and then change direction after having passed the equator and head towards the northwest. At the end of May they arrive at their destination in the Northern Atlantic. In the three months they spent on the open sea they wander along with the wind and the ocean current for more than 1,000 kilometers in a eastward direction, before they start their return flight in end-August. Before arriving at their breeding sites on King George Island they have a stop-over. For up to three weeks the birds are resting off the Patagonian coast and refill their body reserves.

The flight route into the North Pacific leads at first along the coast of South America and then changes direction towards the northwest above the [equator](#). In mid-May, two weeks earlier than their conspecifics overwintering in the Atlantic, the skuas arrive at their winter quarters in the Pacific. These animals too, let themselves drift along with the wind and the waves up to 3,000 kilometers eastwards. Their way back leads them in a wide curve in a southwestern direction towards New Zealand and finally turns in a southeasterly direction into Antarctica. There, they are resting for a few days as well before they return to their breeding site. "We think that the animals need this resting phase to recover from the strain of the long trip through the tropics where food is scarce", Dr. Peter says.

Once the skuas have decided on an ocean for a winter quarter, they will head towards the same destination in the following years as well. Until now the scientists didn't know the ultimate reason for the animals' decision on one particular direction. "We know for sure though that the animals get their own bearings and don't learn the route from their parents", Dr. Peter says. And so for him and his colleagues some questions still remain unanswered. Therefore the Jena scientist will leave for a research trip to Antarctica this year – 100 years after Roald Amundsen, the first person ever to reach the South Pole. Two of Dr. Peter's students are already on site and have captured the first Skuas. For Hans-Ulrich Peter it is the 22th expedition to the world's most southern continent.

Provided by Friedrich-Schiller-Universitaet Jena

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