

Arctic tern and Sabines gull migration study

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The Arctic tern and the Sabines gull are both ground nesting seabirds breeding in colonies along the coasts of Northeast Greenland. Both species are trans-equatorial migrating birds wintering in high productive seas of the southern hemisphere.

In order to map the migration and utilization of marine areas outside the breeding season, Arctic terns and Sabines gulls were equipped with geolocators – small devices recording light intensity which subsequent can be transformed into geographical positions. Geolocators were deployed on 50 Arctic terns and 30 Sabines gulls at Sandøen, Young Sund (74° 43' N, 20° 27' W) in July 2007. In July the following year, ten and eleven loggers were retrieved respectively from the two species. The study revealed novel knowledge on some of the longest annual migrations performed within the animal kingdom. Here are the tracking results inside and near the assessment area described.

As the geocator derived positions depend on the time of sunset and sunrise, positions from the Arctic summer with midnight sun (late May to August) are limited.

Arctic tern: The post-breeding departure of the terns from the Young Sund area takes place immediately after fledging of the young. The study revealed that the Arctic terns left the Sandøen colony primo to mid-August and migrated south through the Denmark Strait region – likely without the use of significant stop-over sites along the way (Figure 2). The birds didn't pause the migration until around 50° N (far south of Greenland waters) where they spend an average of 25 days at-sea, before continuing the migration into and across tropical regions. The winter was spent in the Wendell Sea off Antarctica, and the north-bound migration was initiated mid-April. The Arctic terns of Sandøen entered southern Greenland waters late May. But at this time day-night light difference were too low to produce accurate geographical positions (Figure 1). However, primo June the Young Sund is still covered by sea ice and it is likely that the terns utilize the open water marine areas east of Young Sund, until egg laying is initiated in ultimo June/primo July (see these reports from [2007](#) and [2008](#)). The results were published in this paper: Egevang, C., Stenhouse, Phillips, R.A, Petersen, A. Fox, J.W. & Silk, R.D. 2010. Tracking of Arctic terns *Sterna paradisaea* reveals longest animal migration. PNAS 107: 2078-2081. DOI: 10.1073/pnas.0909493107.

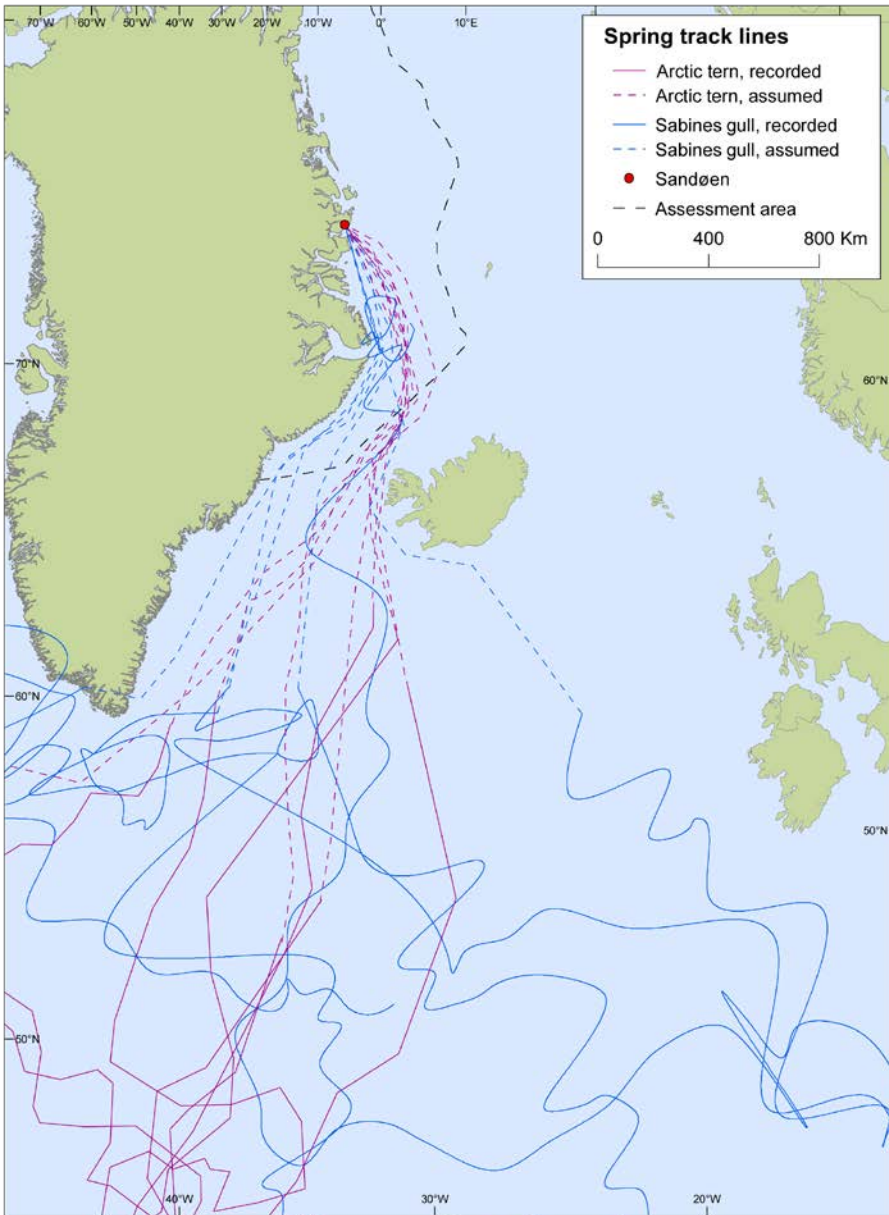


Figure 1. Spring migration routes for tracked Arctic terns and Sabine's gulls from Sandøen. Some routes are assumed as geologgers do not track properly during equinox.

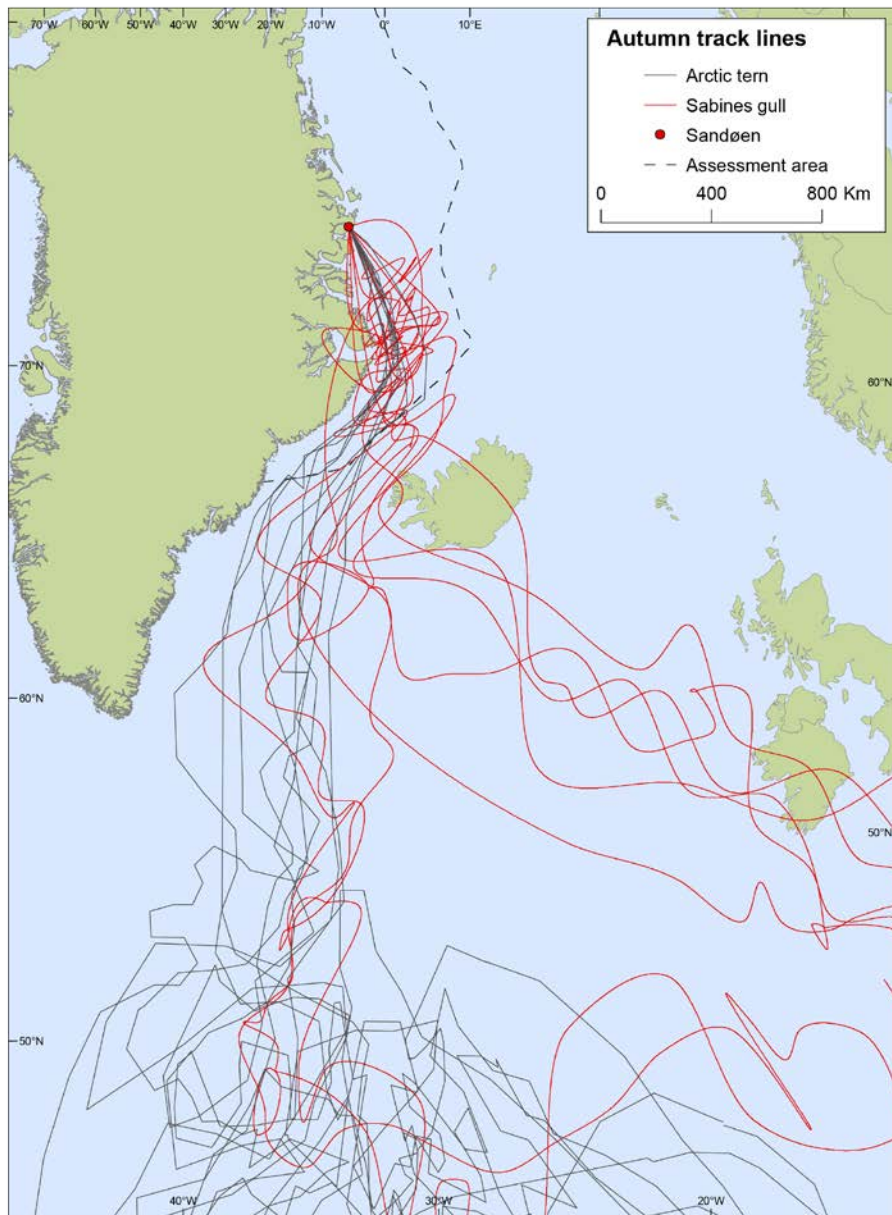


Figure 2. Autumn migration routes for tracked Arctic terns and Sabine's gulls from Sandøen. Some routes are assumed as geologgers do not track properly during equinox.

Sabine's gull: The post-breeding migration of the Sabine's gulls differed from the Arctic terns by a more eastward migration from the Young Sund area. The Sabine's gulls left Sandøen medio August and moved into the marine areas east and southeast off the coast. Here, in the southern part of the assessment area the birds spend between 10 and 14 days before continuing their southbound migration (Figure 2). The winter quarters were identified to the marine areas off southern Africa (Benguela Upwelling System), with distinct stop-over sites in autumn (in the Bay of Biscay) and in spring off the west African coast (Morocco, Mauritania, Senegal). By the time the Sabine's gulls of

Sandøen returned to East Greenland late May/early June day-night light difference were too low to produce accurate geographical positions and movements within the assessment area cannot be elucidated (Figure 1). The results are published in this paper: Stenhouse, I., Egevang, C & Phillips R.A. 2011. Trans-equatorial migration, staging sites and wintering area of Sabine's Gulls *Larus sabini* in the Atlantic Ocean, Ibis 154: 42-51. DOI: 10.1111/j.1474-919X.2011.01180.