

A single-year comparison of two methods of censusing breeding Red Knot and Sanderling in High Arctic Greenland

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Piersma, T., Meltofte, H., Jukema, J., Reneerkens, J., de Goeij, P. & Ekster, W. 2006. A single-year comparison of two methods of censusing breeding Red Knot and Sanderling in High Arctic Greenland. *Wader Study Group Bull.* 109: 83–87.

Keywords: Arctic, census methodology, non-breeding, population sizes, shorebirds, tundra, Zackenberg

A uniquely intense field effort at Zackenberg, NE Greenland, in June–July 2003 made it possible, for the first time, to compare two methods of measuring breeding densities of two notoriously difficult-to-census High Arctic breeding shorebirds (Red Knot *Calidris canutus* and Sanderling *Calidris alba*): (1) mapping of displays and other activities of birds in a rapid assessment early in the season, and (2) systematic ‘roping’ of potential breeding areas to disturb and then find incubating birds on, or very close to, their nests. The latter method is particularly relevant to species that rely on crypsis to avoid nest detection. During 16 and 19 June an experienced observer, in a standardized way, mapped all visual observations of Red Knot and Sanderling over a 4.0 km² study area, which consisted mainly of low-angle mountain slopes between altitudes of 100 and 400 m. The observations were interpreted to represent 8–9 ‘pairs’ of Red Knot and 13–17 ‘pairs’ of Sanderling. Observations nearby allowed for a few additional pairs of Red Knot. Between 17 June and 5 July a team of five observers systematically roped the same study area and found two Red Knot nests and 15 Sanderling nests. Most of the study area remained under daily scrutiny until 19 July, and during these visits we encountered two more families of Red Knots and seven more Sanderling families. Thus, the roping effort yielded a few more Sanderling ‘pairs’ than expected from the early-season survey, but fewer Red Knot. This may imply that either: (1) the early-season rapid assessment particularly overestimated the knot population, and/or (2) relative to Sanderlings, knot nests were heavily depredated before roping, and/or (3) incubating birds escaped notice during roping, and/or (4) some of the local Red Knots may not have started a breeding attempt at all. Further work with radio-tagged individuals is necessary to establish whether we need to invoke non-breeding as a cause of the discrepancy.