Bound together or falling apart? Foraging association in red knots

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Shorebirds feeding on the intertidal mudflats of the Wadden Sea often forage socially; foraging is restricted to brief windows of opportunity created by the tidal cycle, when waders such as red knots *Calidris canutus islandica* can access the buried macrozoobenthos. Like other waders, knots form large foraging flocks, and have been shown to use social information in experimental settings to find food. Yet, it remains unresolved whether knot flocks show fission-fusion dynamics, where individual association is random and fleeting, or if there is some social structure in the form of non-random association, where individuals have an affinity for certain neighbours over others. Knots in the lab show consistent individual differences in exploratory and aggressive behaviour – independent of expected physiological drivers. These are expected to have some impact on individual space use and association as knots navigate the resource and social landscape.
Modern tracking methods, field and lab tests of consistent individual behavioural differences, and regular, high resolution sampling of the resource landscape enable the investigation of wader sociality and its relation to environmental and intrinsic drivers in more detail than was available to previous studies. Here, we present work that uses high frequency (0.25 – 1 Hz) tracking with the ATLAS system of approximately 250 free-living adult red knots from the summers of 2017 (n = 80) and 2018 (n = 170), and which investigates the question of whether knots form non-random foraging associations, i.e., whether red knots have 'friends'. This work, and an additional comparison with simultaneously tracked sanderlings *C. alba* (n = 160) may ultimately allow a better understanding of the social dynamics of group-living foragers.