Title suggestions:

Social dynamics of movement in a periodically constraint ecosystem

Tidal mudflats are essential feeding areas for shorebirds, but their exploitation is periodically constrained by the tide, which briefly creates suitable foraging conditions for waders. This cyclic environment forms fission-fusion dynamics which ﻿consist regular shifts in the size and composition of social groups. ﻿Thus, the individual and environmental factors that drive social dynamics have become an important focus. Red knots *Calidris canutus* are migratory shorebirds forage on the tidal mudflats. Recent studies revealed that red knots show consistent individual differences on their exploration behavior that it is negatively correlated with gizzard mass which reflects the quality of prey that is consumed. ﻿Exploratory behavior in a laboratory setting is related to space use in the wild; meaning that exploratory individuals forage in greater distance and select higher quality prey. Yet, the factors that influence their social foraging groups have not been studied. This study aims to investigate the influence of individual (personality type, gizzard mass), social (group size) and environmental (low and high tide) factors on movement of red knots. We followed individually characterized 41 red knots for 3 days with TOA transmitter tags that release detailed location information. We expect to find higher distance between exploratory and sedentary individuals during low tide than high tide because of the exploitation of the mudflats. Furthermore, we aim to test our hypothesis with comparing simulation model and observed data. Ultimately this study aims to give a comprehensive description of social aspects of red knot movement.