

Figure S1. Foraging patterns at the *M. croslandi* nest used in this study. Panels show the individual paths of foragers as they have been recorded with differential GPS over a period of two years. These paths provided the original data for the 2D histogram shown in the middle panel of Fig. 1B.

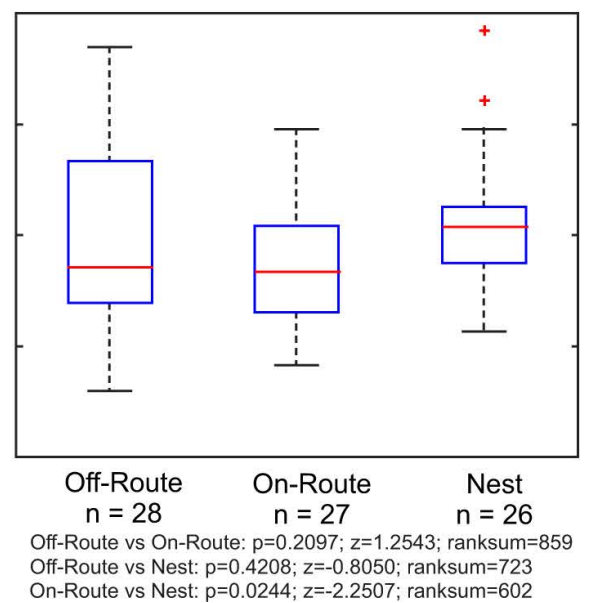
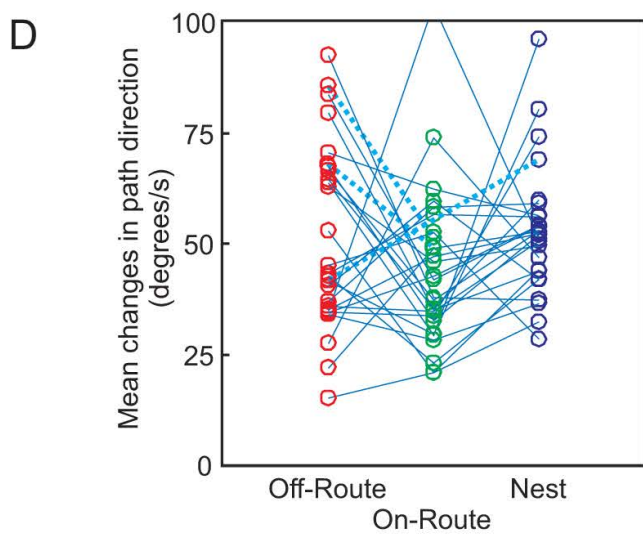
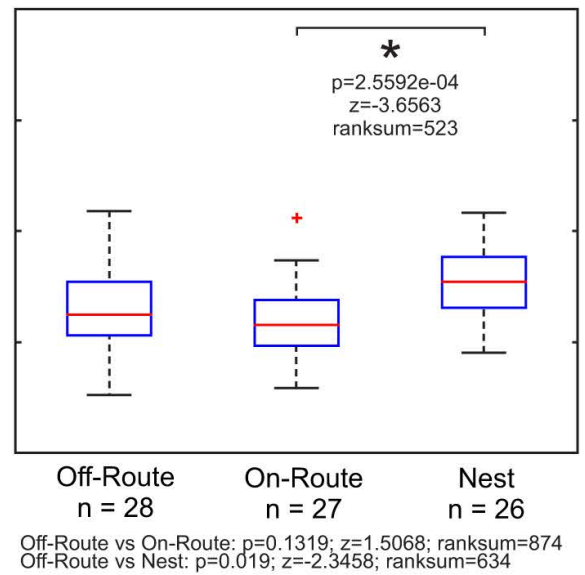
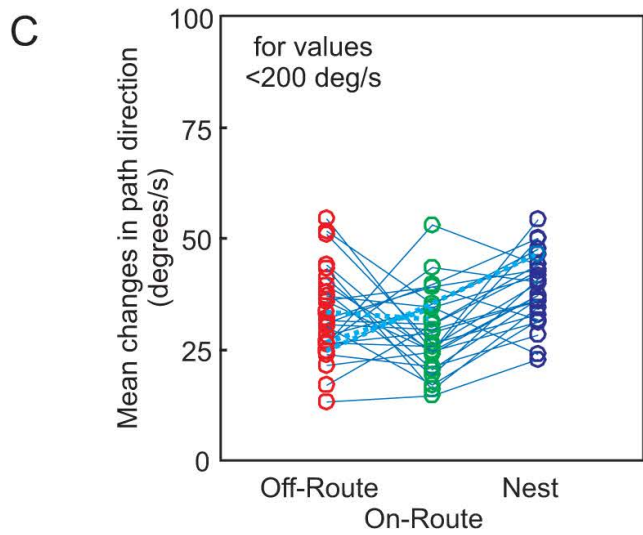
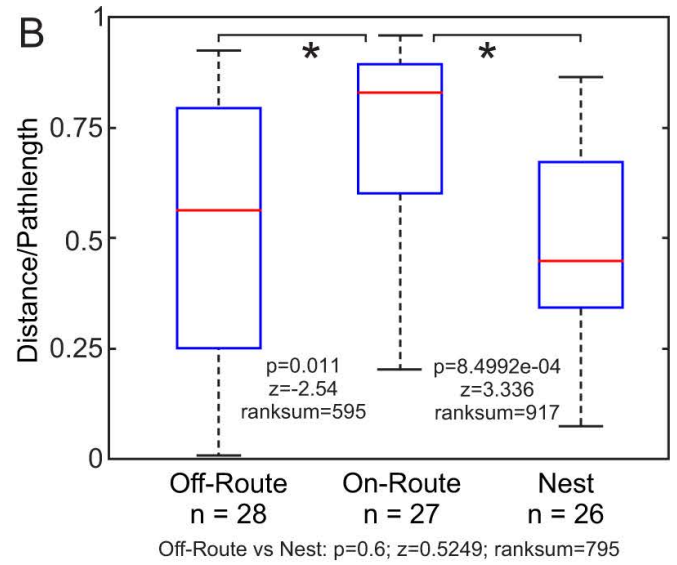
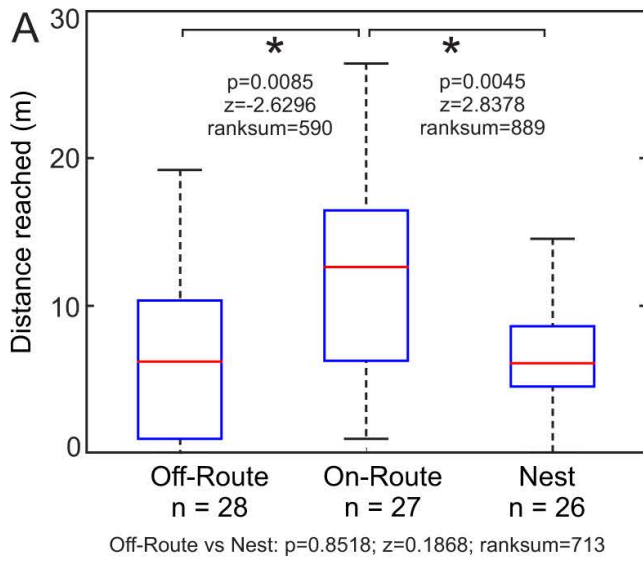


Figure S2. Quantitative analysis of behavioural differences between Off-route, On-route and Nest locations. (A) Box plots of distances reached after 5 minutes at the three locations. Significant comparisons with a Wilcoxon Rank Sum test ($p < 0.0167$) are marked by a star and values are shown inside the panel. Values for non-significant comparisons ($p > 0.0167$) are shown below the panel. (B) Box plots of distance over path length ratios after 5 minutes at the three locations. Otherwise conventions as in (A). (C) Left panel: Individual means of the changes in path direction (absolute values $< 200^\circ/s$, determined at 11fps) for the first 5 minutes with means of individual ants connected by blue lines. Dashed lines mark cases where an ant was released at two locations only. Right panel: Boxplots of mean changes in path direction with significant differences as determined by Wilcoxon Rank Sum test marked by a star and values shown as inset. Values for non-significant comparisons are shown below the panel. (D) Same for the means and distributions of all absolute values of changes in path direction. Otherwise conventions as before.

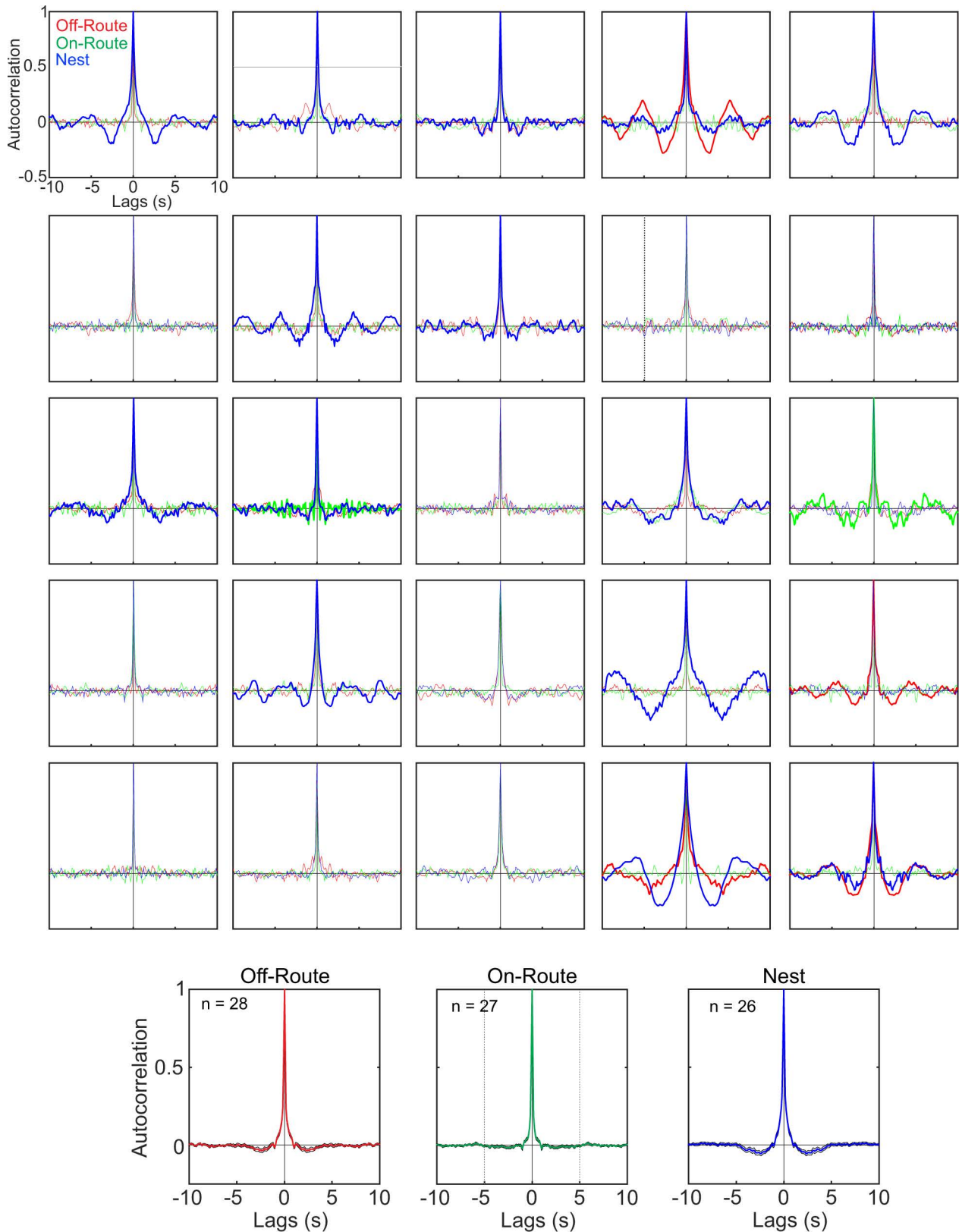


Figure S3. Comparison of auto-correlation functions of 5 minute time series of changes in path direction at the three locations. Off-route: red; On-route: green; Nest: blue for each of 25 ants that were tested at all three locations. Bottom panels show mean auto-correlations for all ants at the three locations.