

Appendix F. Illustration of individual foraging consistency indices using contrasting examples.

Individual consistency in initial departure direction and in the subsequent use of space during foraging

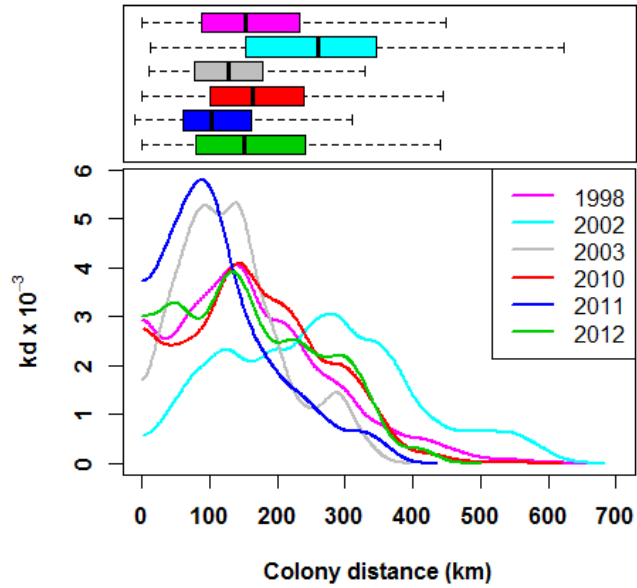


FIG. F1. Foraging effort with distance by sea from Bass Rock. Boxplots show median and interquartile range. Line plots show kernel density (kd), $h = 15$ km. Data from this study and Hamer et al. (2007).

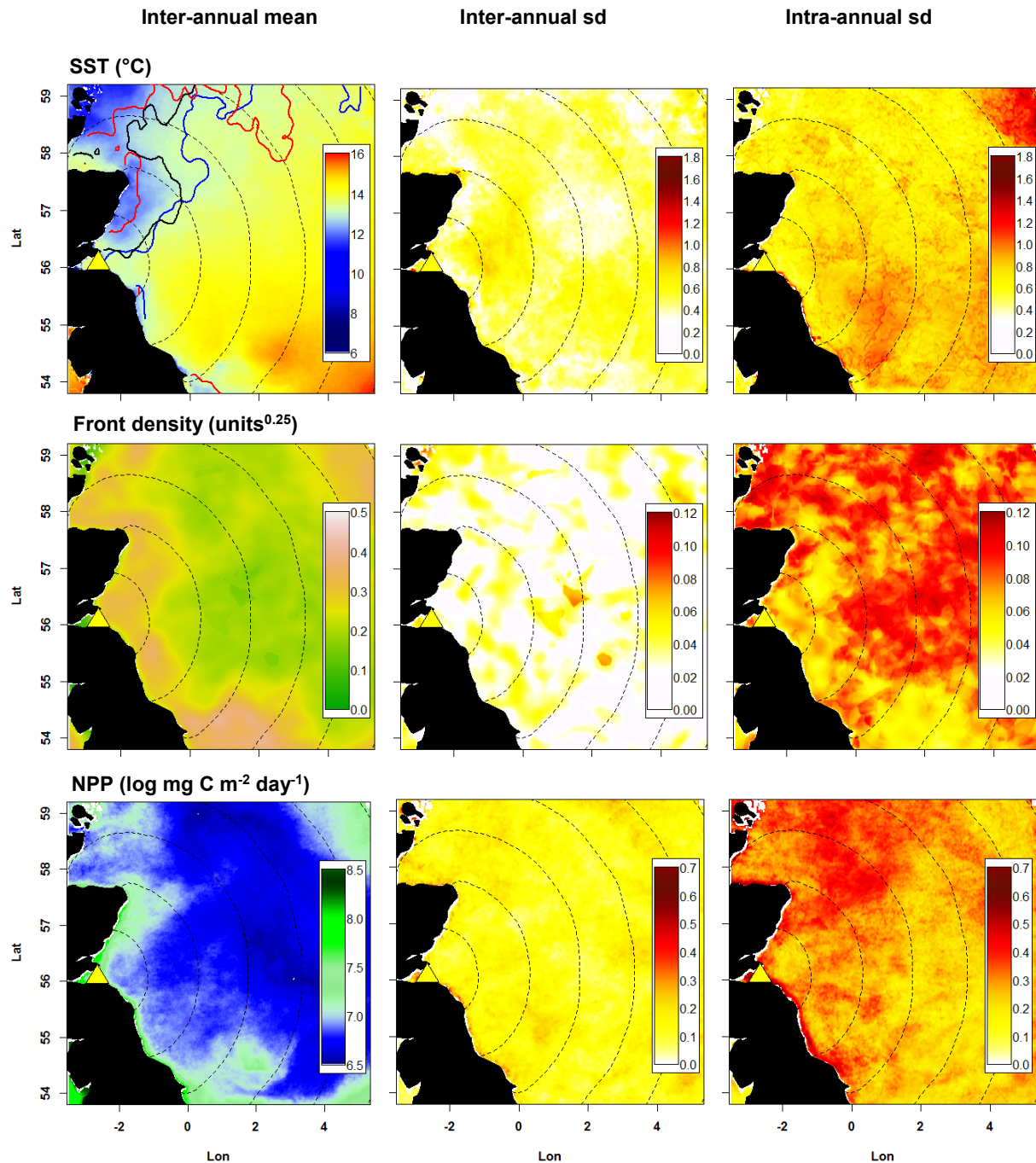


FIG. F2. Environmental conditions during the study period (June – August, 2010–2012). Left-hand panels show monthly data, averaged over years; central panels show monthly inter-annual standard deviation, averaged across months; right-hand panels show intra-annual standard deviation of weekly data, averaged across years. In the upper-left panel, the location of the July 2010, 2011 and 2012 13 °C SST isotherms (blue, red and black lines respectively) indicate the approximate interface between mixed and stratified waters. Dashed lines indicate 100 km intervals of distance-by-sea from Bass Rock (yellow triangle).

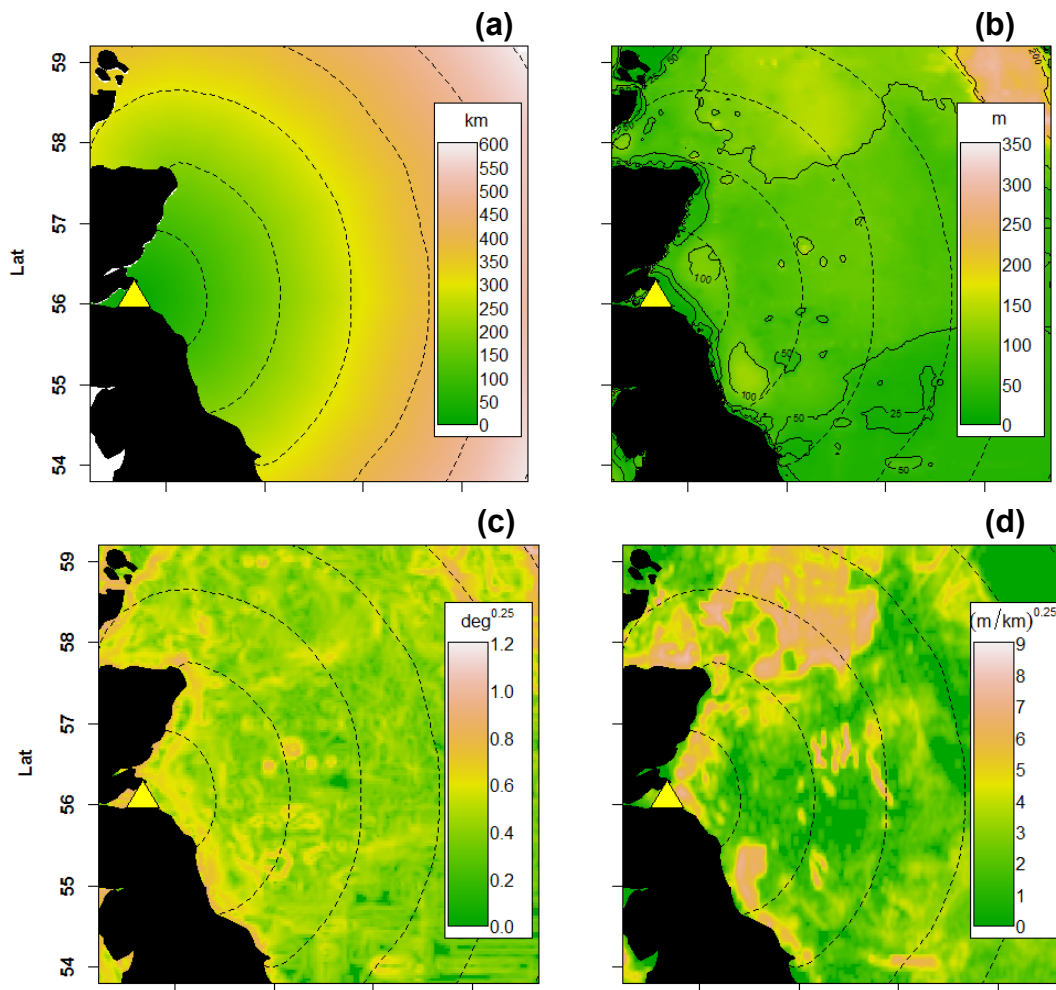


FIG. F3. Static environmental covariates: (a) Distance by-sea form Bass Rock; (b) depth; (c) sea-floor slope; and (d) fishing effort. Note that although fishing effort varies in time, we treated it as static in our analysis because time indexed data were not available to us. Dashed lines indicate 100 km intervals of distance-by-sea from Bass Rock (yellow triangle).

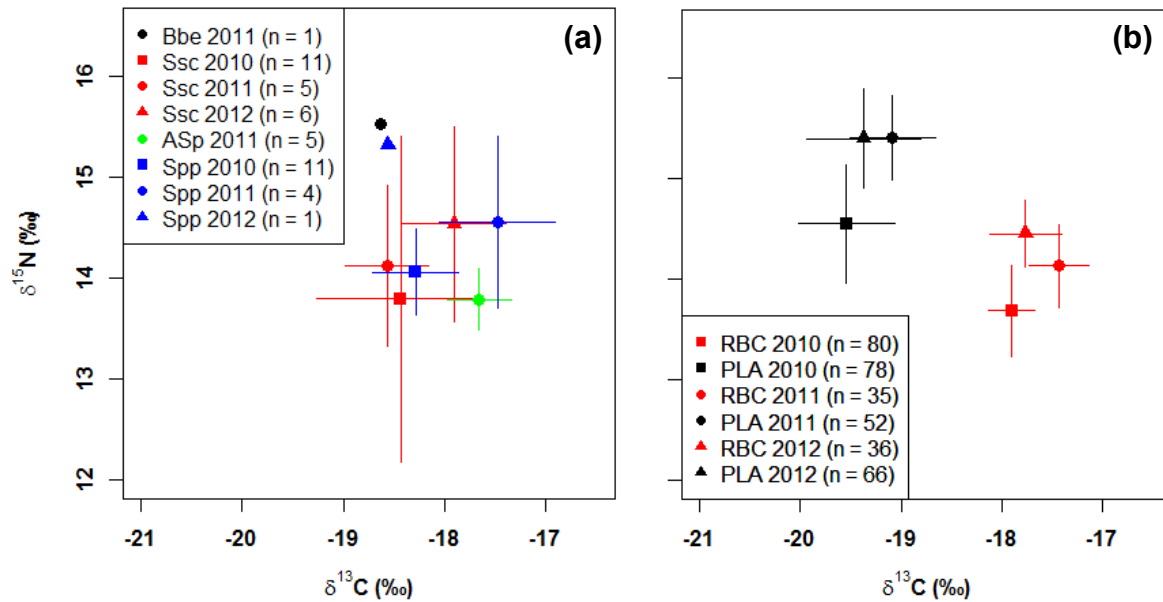
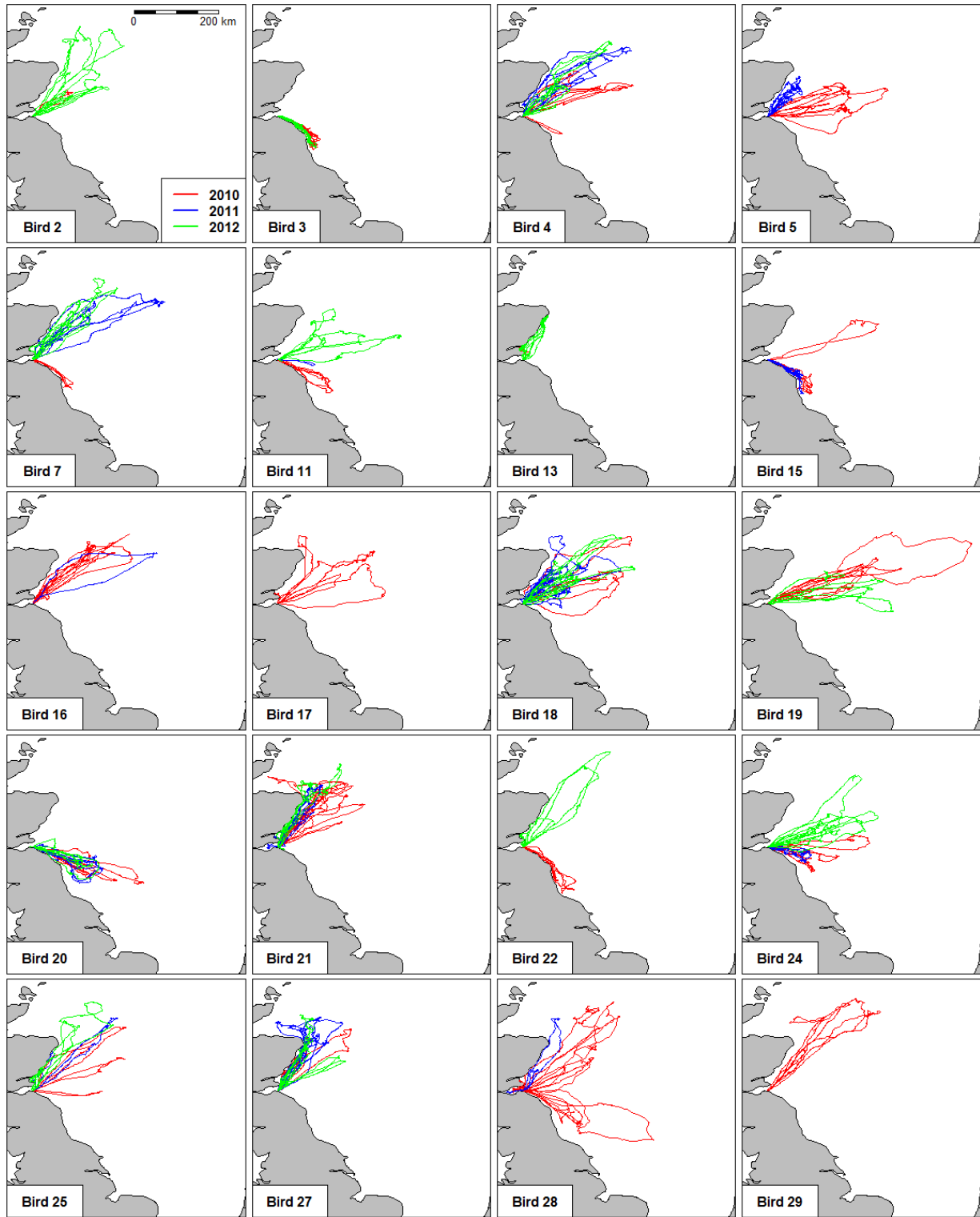
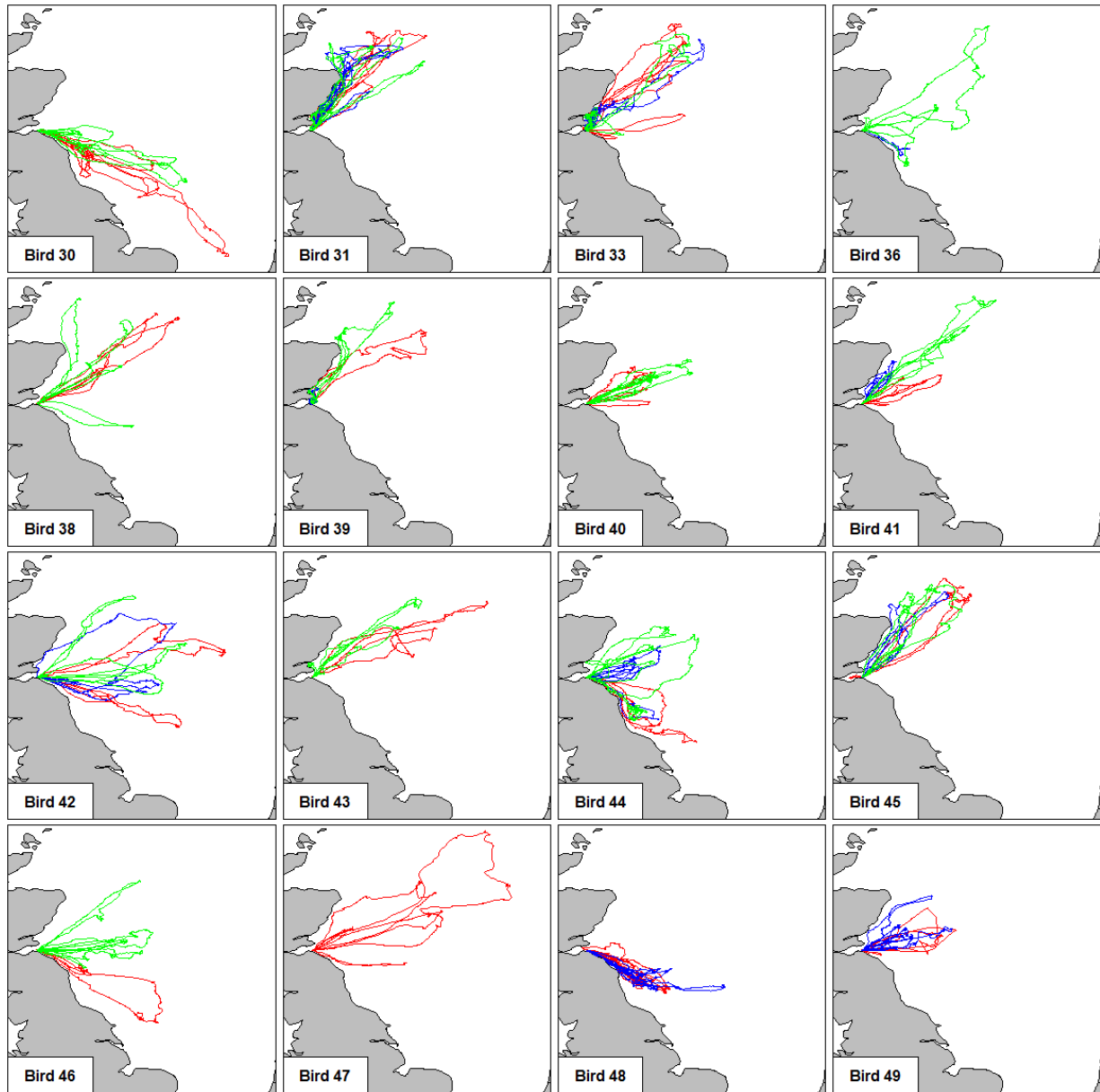


FIG. F4. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ (‰) values in (a) prey regurgitates and (b) red blood cells (RBC) and plasma (PLA) of gannets breeding at Bass Rock, 2010 - 2012. Error bars $\pm 1\text{SD}$. Prey ratios derived from whole regurgitated samples ($\delta^{15}\text{N}$) or lipid extracted samples ($\delta^{13}\text{C}$), and adjusted for trophic enrichment (raw $\delta^{15}\text{N} + 2.25$ and raw $\delta^{13}\text{C} + 0.24$ (Stauss et al. 2012)). Bbe = *Belone belone*, Ssc = *Scomber scombrus*, ASp = *Ammodytes* spp. and Spp = *Sprattus sprattus*.





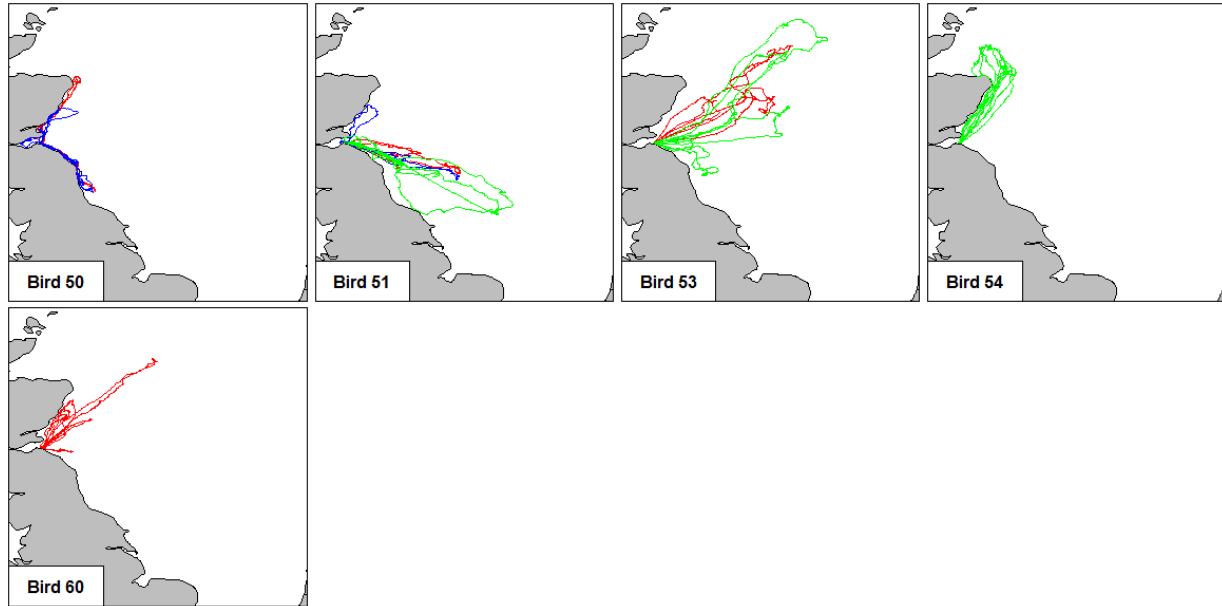


FIG. F5. Tracks of chick-rearing gannets foraging from Bass Rock during June--August, 2010 (red), 2011 (blue) and 2012 (green). Only data from birds successfully tracked for ≥ 1 trip per year or ≥ 3 trips in any one year shown.

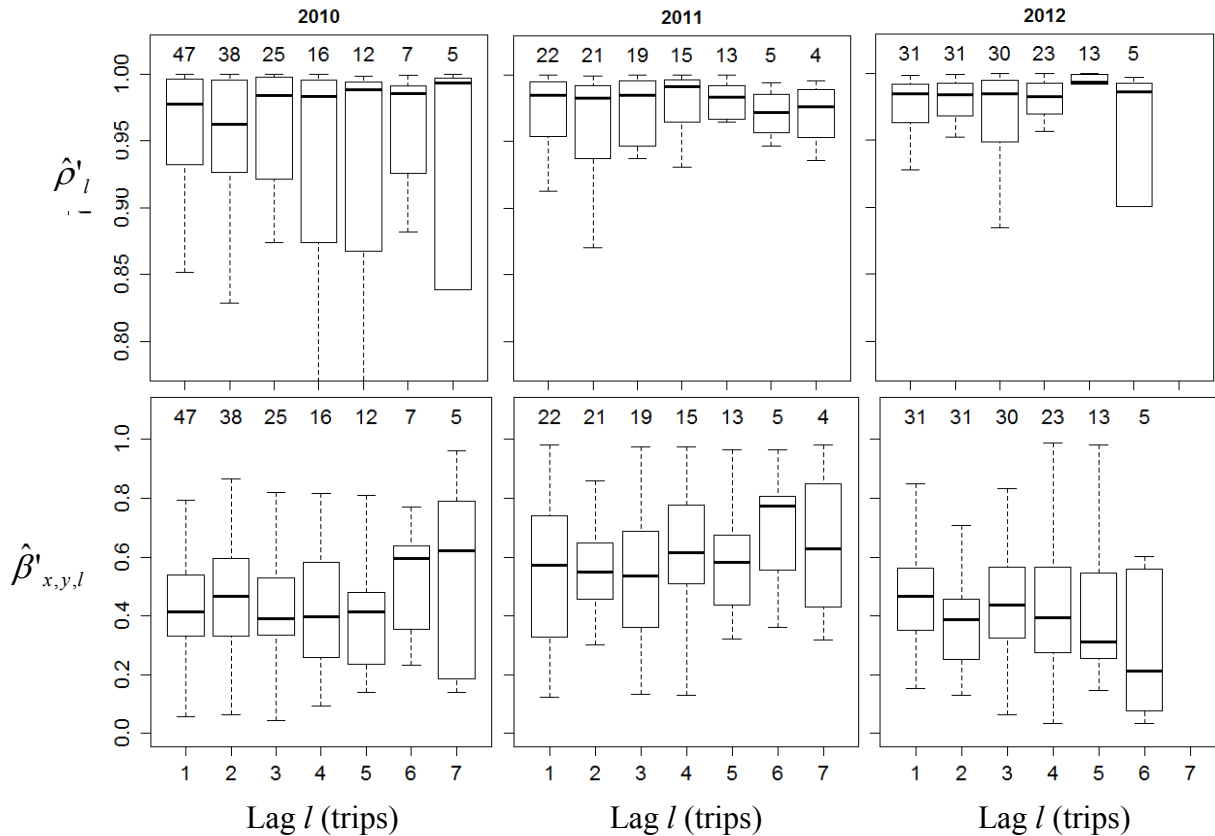


FIG. F6. Directional (top row) and spatial (bottom row) consistency across successive trips within years. $\hat{\rho}'_l$ = within-bird mean resultant length between pairwise combinations of trip departure directions separated by lag, l . $\hat{\beta}'_{x,y,l}$ = mean Bhattacharyya's affinity within-bird between pairwise combinations of trip utilisation distributions separated by lag, l (n birds considered at each lag indicated above boxplots).

LITERATURE CITED

Hamer, K. C., E. M. Humphreys, S. Garthe, J. Hennicke, G. Peters, D. Grémillet, R. A. Phillips, M. P. Harris, and S. Wanless. 2007. Annual variation in diets, feeding locations and foraging behaviour of gannets in the North Sea: flexibility, consistency and constraint. *Marine Ecology-Progress Series* 338:295–305.