

Figure 1 Average global windspeeds and swell heights during the incubation and brood guard phases of the breeding season for the five study species (December through February). The white circles represent the study sites (Midway Atoll in the Northern Hemisphere, Bird Island in the Southern Hemisphere = Bird Island). Grey coloring represents areas where there are no data.

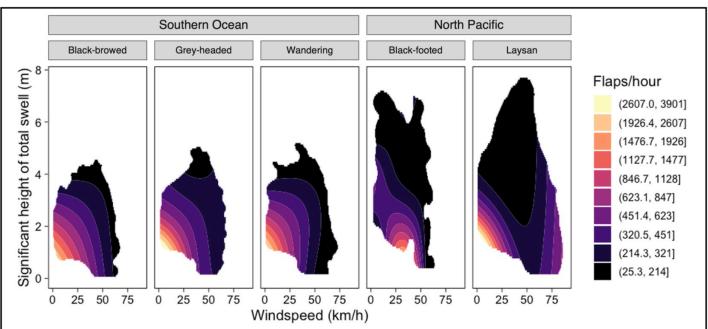


Figure 4 GAMs predicting flap rate using a full tensor product smooth of windspeed and swell height (Model V). The outputs of the GAMs were plotted using colored contours created using Jenks' natural breaks. GAM outputs were confined to the 99% kernel density estimate of the predictor variable space to avoid interpreting the output of environmental conditions that are impossible or unlikely.

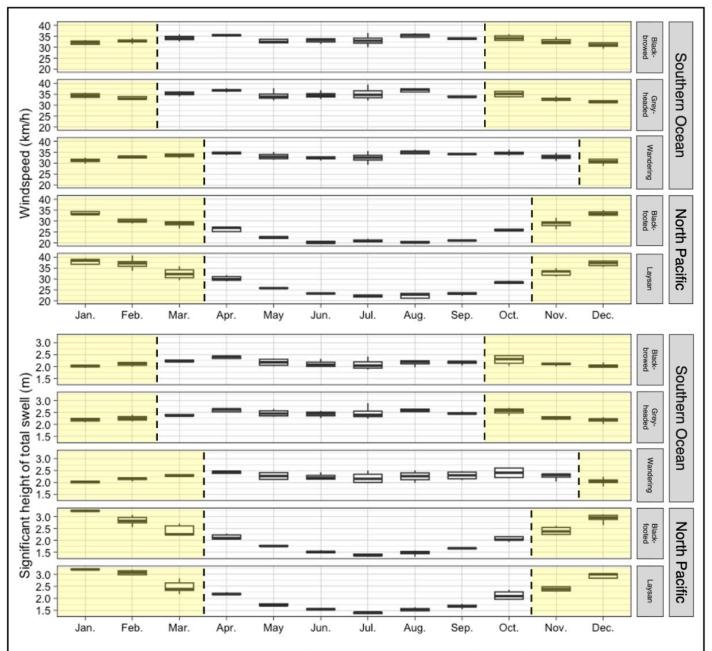


Figure 6 Average windspeeds and swell heights inside foraging area KDEs (95%) for each month of the year. The highlighted segments represent months when albatross species were incubating eggs and brooding young chicks.

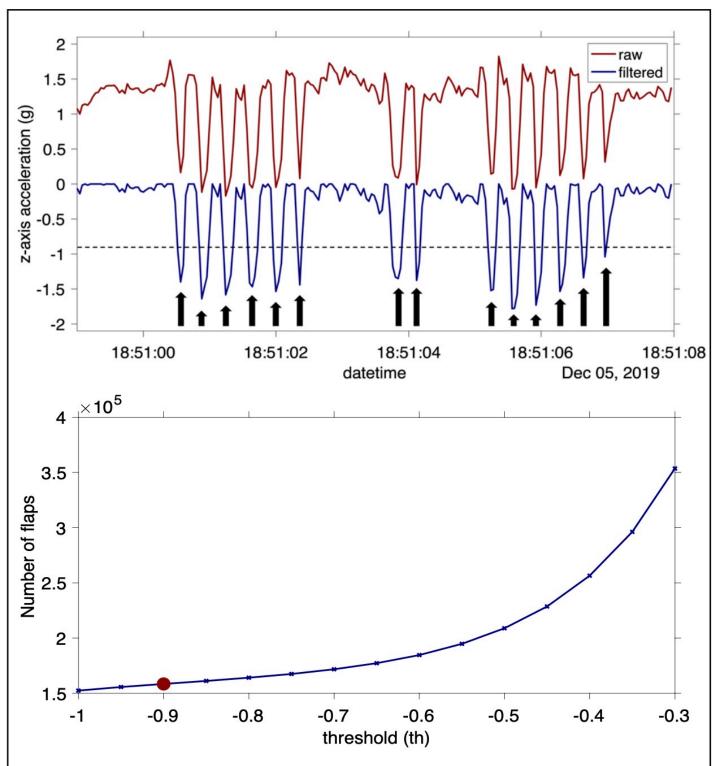


Figure s1 Top panel: filtering z-axis acceleration using a LULU filter. In this instance, the LULU filter used an upper limit (m) of 9. As indicated by the dotted line, the threshold (th) applied to detect flaps (black arrows) is -0.9. Bottom panel: the total number of flaps detected while holding m at 8 and incrementing th from -1.0 to -0.3 by intervals of 0.05. The threshold (th) is selected as the value at which the moving slope of total flap count is smallest: -0.9 in this example.

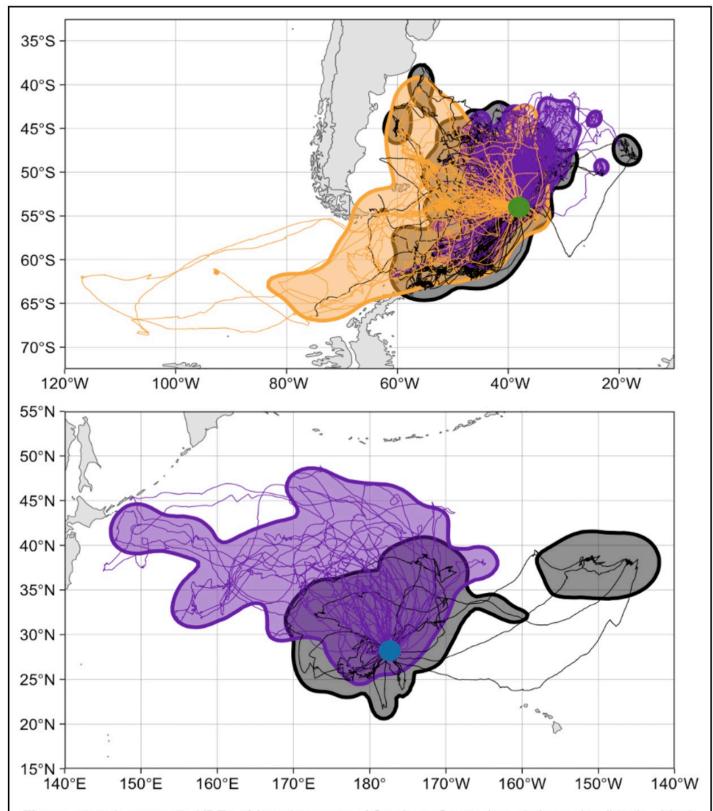


Figure s4 95th percentile KDEs of foraging areas of Southern Ocean (top plot) species (black = black-browed, purple = grey-headed, orange = wandering) and North Pacific (bottom plot) species (black = black-footed, purple = Laysan). Thin lines represent foraging tracks, bold lines and the enclosed shaded areas represent the KDEs, and dots represent colonies (green = Bird Island, blue = Midway).