### Telemetry data curation

GPS telemetry data were stored on Movebank (<https://www.movebank.org/>) and downloaded for the period 24/10/2022 (one day before the first release) to the end of deployment (either mortality of the bird or GPS retrieval). Birds were recaptured and the GPS removed on 11/01/2024 ahead of the planned 3G network shutdown in Australia. We removed spatial and temporal duplicate locations (keeping the location with the higher quality index) and removed fixes with fewer than four satellites using the function dupfilter() from *SDLfilter* (ref). We applied speed-based filtering using the custom function by Gunner (2023) using isolation forest models as a method of unsupervised anomaly detection. The user-defined thresholds were used were an angular speed of 1.07 m/s and a maximum speed of 1.19 m/s. After filtering, some ‘jitter’ remained, that is, erroneous points with speed and angle values within the bounds of biologically possible movement. To reduce jitter, we applied median resampling with a moving window of three using the function atl\_median\_smooth() from *atlastools* (ref). Finally, we plotted the individual tracks and manually filtered out the few remaining visually identifiable outliers.

### Performance metrics

We calculated a number of performance metrics from the GPS tracking data and field surveys, these were: persistence, survival, distance moved from release site, distance moved daily, home range size, change in home range size over time, and foraging efficiency. Persistence was defined as the number of days between release and mortality, with a maximum of 360 days (the number of days between the last released cohort and the end of the study). Survival was reported to 90 days post-release (in line with previous reporting from this species (Rapley 2020)) and to one year (technically to 360 days, per above) to investigate whether different lengths of time for survival would impact the strength of pre-release predictors on the outcomes. Distance moved from release site was calculated as the mean daily distance from the release site (which was the same for all founders). Distance moved per day was calculated as the sum of the movement path in one calendar day. Home range was calculated as the mean daily 90% kernel utilisation density (KUD), calculated using the function kernelUD() from *adehabitatHR* (ref). Change in home range size over time was calculated as the slope of the change in daily 90% KUD home range area.